

# CURRENT AFFAIRS

For Integrated Preparation of CSE Prelims + Mains + Interview



Special Feature

**JANUARY**  
Monthly MCQs

from



## INCLUDES

- ◊ Important Summits in News
- ◊ Important Days in January
- ◊ Important Terms in News
- ◊ Obituaries in News
- ◊ Awards and Prizes

### IMPORTANT ARTICLES FROM

☞ YOJANA.....	133
☞ KURUKSHETRA.....	136
☞ DOWN TO EARTH.....	140
☞ EPW.....	142
☞ FRONTLINE.....	53

\*MCQs on Prelims Latest Pattern

- Ken-Betwa Link
- Genome India Project
- Translocation of Tigers
- India's Defence Exports
- India - Kuwait Relations
- Revamping Indian Agriculture
- Central Information Commission
- Modernising India's Bureaucracy

- Temple Reforms
- Indus Valley Script
- Swami Vivekananda's Vision
- Reusing Treated Wastewater
- Ground Water Quality Report, 2024
- National Broadband Mission (NBM) 2.0
- Climate Change and Human Trafficking
- Emotional Intelligence in Public Administration



# CHAHAL ACADEMY

# IAS-UPSC-CSE

## NCERT+GS+CSAT BATCH

### Prelims+Mains+Interview

### Offline & Live Online



**MEDIUM**

**Batch Start Date**

**PURE ENGLISH**

**Feb. 24 | Mar. 10, 17**

**PURE HINDI**

**Feb. 24 | Mar. 3, 10**

**BILINGUAL**

**Feb. 24 | Mar. 3, 10, 17**

# ADMISSION OPEN

For more details contact us  **9313218122, 9625921993**

**OUR BRANCHES**

NEW DELHI | AHMEDABAD | ANAND | BHUBANESWAR | CHANDIGARH | DEHRADUN | GANDHINAGAR |  
HYDERABAD | INDORE | JAIPUR | KANPUR | KOLKATA | LUCKNOW | MUMBAI | PATNA | RAIPUR | RAJKOT |  
SURAT | THANE | VADODARA | VARANASI

# CONTENTS

## (A) POLITY & GOVERNANCE .....1

“Modernising India’s Bureaucracy: Need for Urgent Administrative Reforms”.....	1
Productivity of Parliament (18 <sup>th</sup> Lok Sabha Winter Session 2024) .....	3
Judicial appointments in India: Collegium, Challenges, and the Rule of Law.....	4
Section 152 BNS: A New Form of Sedition?.....	5
Concerns over Delimitation and the Loss of Parliamentary Seats .....	7
Amendments to Rule 93 of the Conduct of Election Rules, 1961.....	8
The Decline of Private Members’ Bills and Resolutions in Indian Parliament.....	10
New Draft Regulations by the UGC and its Opposition .....	11
National Human Rights Commission (NHRC).....	13
Central Information Commission.....	14
Important Supreme Court Rulings.....	15
Lokpal .....	16
Bharatpol.....	18

## (B) INTERNATIONAL RELATIONS ..... 20

Strengthening India’s Diplomatic Framework .....	20
India - Kuwait Relations .....	21
India-Singapore Relations .....	22
Indians and The H-1B Visa .....	23
China Approves World’s Largest Dam on Brahmaputra River.....	25
Extradition Demand by Bangladesh: Legal Challenges and International Perspectives.....	26
Programme of Action for Landlocked Developing Countries (LLDC).....	28
United Nations Convention Against Cybercrime .....	29
Ukraine Stops Russian Gas Transit to Europe.....	29
Acute Malnutrition in Children in Sudan.....	30

## (C) ECONOMY & AGRICULTURE.....32

Revamping Indian Agriculture.....	32
Weakening of The Indian Rupee.....	35
Treasury Bills (T-Bill).....	36
Wholesale Price Index (WPI).....	38
Debt Market in India.....	39
Revolutionizing Digital Commerce: The ONDC Initiative..	40
Green Deposits.....	42
Household Consumption Expenditure Survey: 2023-24 ....	43

GATT-ification of WTO.....	45
National Waterways.....	46

## (D) ENVIRONMENT & GEOGRAPHY ..... 48

Ken-Betwa Link: A Flawed Solution to India’s Water Crisis.....	48
Powering India with Renewable.....	50
Translocation of Tigers.....	50
Olive Ridley Turtle.....	52
Pallas’s Cat: Small Ghost of the Mountain.....	53
Red Panda .....	53
Dams in India.....	54
Bhopal Gas Tragedy.....	55
Persisting Peril: Illegal Rat-Hole Mining in Northeast India.....	57
Stampedes and Crowd Management.....	59
Nagapattinam and 2004 Tsunami.....	61
Panama Canal.....	62
Polar Vortex.....	64
Deccan Volcanism and Tropical Flora .....	65
National Turmeric Board.....	66

## (E) SCIENCE & TECHNOLOGY .....67

SpaDeX Mission.....	67
Third Launch Pad At Sriharikota.....	68
Genome India Project.....	70
Twigstats: Finding Genetic Ancestry.....	71
Quantum Satellite and Communications.....	72
Big Data And Data Science.....	73
Dark Matter.....	74
Semi-Dirac Fermions.....	75
Hydrogels For Cancer Treatment.....	76
SSI Mantra.....	77
Human Metapneumovirus.....	78

## (F) DEFENCE & SECURITY ..... 79

India’s Defence Exports.....	79
\$10 Billion Defense Deals Between India and France.....	80
India-U.S. Collaborate on Sonobuoys.....	81
Sixth-Generation Aero-Engine.....	82
Commissioning of New Naval Ships.....	83
Bhargavastra.....	84
NAG MK 2.....	85
LA PEROUSE Multinational Exercise.....	86

SLINEX 24..... 86

**(G) SOCIAL ISSUES ..... 88**

Redefining Masculinity: Engaging Men in the Fight for Gender Equality..... 88  
 Kerala’s Declining Birth Rates and its Social Implications.. 90  
 Climate Change and Human Trafficking..... 91  
 CISF’s Efforts Cut Suicide Rates by 40%..... 92  
 No-Detention Policy Scrapped..... 93  
 Posthumous Assisted Reproduction..... 95

**(H) HISTORY & CULTURE ..... 97**

Temple Reforms..... 97  
 Carnatic Music..... 98  
 Dance: A Living Heritage of Culture and Spirituality..... 99  
 Marathi Language..... 100  
 Water Management Techniques of the Indus Valley Civilization..... 102  
 Lothal..... 103  
 Indus Valley Script..... 104  
 Kuka Movement..... 105

**(I) GOVERNMENT SCHEMES ..... 106**

Mahatma Gandhi National Rural Employment Guarantee Scheme(MGNREGS)..... 106  
 Open Market Sale Scheme (Domestic) [OMSS(D)]..... 107  
 National Broadband Mission (NBM) 2.0 and SANCHAR SAATHI Mobile App..... 108  
 Svamitva scheme..... 109  
 PLI Scheme 1.1..... 110  
 Cashless Treatment Scheme for Road Accident Victim..... 111

**(J) REPORTS ..... 113**

State of Forest Report 2023..... 113  
 IPBES Nexus Assessment..... 114  
 Ground Water Quality Report, 2024..... 116  
 Biennial Update Report..... 117  
 Financial Stability Report..... 119  
 World Employment and Social Outlook: Trends 2025..... 120  
 Future of Jobs Report..... 120  
 Fiscal Prudence..... 122  
 Fall In Student Enrollment..... 122  
 Global Cybersecurity Outlook 2025..... 123

**(K) PERSONALITIES IN NEWS..... 124**

Honoring The Lasting Impact of Dr. Manmohan Singh’s wise Leadership..... 124  
 Swami Vivekananda’s Vision: Empowering Youth for a Viksit Bharata..... 126  
 Atal Bihari Vajpayee..... 128  
 Chaudhary Charan Singh..... 129  
 Savitribai Phule..... 130  
 Rani Velu Nachiyar..... 130  
 Thiruvalluvar..... 131  
 Khwaja Moinuddin Chisti..... 131

**(L) ARTICLES FROM YOJANA JANUARY 2025 ..... 133**

Emotional Intelligence in Public Administration: A Buddhist Approach..... 133  
 Weaving and the Indian Textile Industry..... 134

**(M) ARTICLES FROM KURUKSHETRA JANUARY 2025..... 136**

Satellite-Based Early Warning Systems for Drought and Flood Management..... 136  
 Geo-Spatial Data for Rural Resource Management..... 137

**(N) ARTICLES FROM DOWN TO EARTH JANUARY 2025..... 140**

Reusing Treated Wastewater Key To Resolving India’s Urban Water Crisis: CSE..... 140  
 Aexplained: What Is Blue Carbon?..... 141

**(O) ARTICLES FROM EPW JANUARY 2025..... 142**

The Contours of Caste in the Criminal Legal System..... 142  
 The Risks of Coal Phase Down..... 143

**(P) QUICK REVISION..... 145**

Awards and Prizes in January 2025..... 145  
 Obituaries in January 2025..... 146  
 Important Days in January 2025..... 147  
 Important Summit/Conference in January 2025..... 148  
 Terms in January 2025..... 149

**(Q) JANUARY 2025 - DAILY MCQS FROM THE HINDU & INDIAN EXPRESS..... 150**

Daily MCQs Practice..... 150  
 Daily Answer Writing Practice..... 161

### “MODERNISING INDIA'S BUREAUCRACY: NEED FOR URGENT ADMINISTRATIVE REFORMS”

**Why in News:** A recent editorial in The Hindu emphasized the urgent need for reforms in bureaucracy.

#### Key Details

- While the country has made significant strides in economic growth and innovation, issues such as **income inequality, underinvestment in key sectors, and bureaucratic inefficiency** remain.
- At the heart of this issue is the Indian Administrative Service (IAS), which has long played a central role in governance. However, persistent challenges within the IAS and the broader bureaucracy **underscore the pressing need for administrative reforms to unlock India's full economic potential.**

#### India's Bureaucracy

- The IAS is often referred to as India's “**steel frame**” due to its pivotal role in the administrative structure post-Independence. It traces its origins to the colonial Indian Civil Service (ICS) that was the backbone of British administration. After Independence, the IAS became central to India's governance, with officers taking up key administrative roles. **However, the system's legacy has come under scrutiny as it faces following modern challenges:**
  - **Political Interference:** Over the years, political interference in **transfers, promotions, and suspensions of IAS officers** has been a significant problem. Officers' positions are sometimes determined more by political loyalty rather than their qualifications or experience, which diminishes professionalism within the service.
    - ◆ **E.g.** Ashok Khemka, an IAS officer in Haryana, was transferred over 50 times in his career for taking a stand against corruption and political influence.

1991 Kerala-cadre officer, Narayanaswamy, has held numerous posts throughout his career and faced repeated penalties for exposing corruption. His anti-corruption efforts began early in his service, earning him both criticism from political superiors and widespread public acclaim. Over the course of 33 years, these efforts led to an extraordinary 31 transfers.

- **Lack of Specialization:** Frequent rotations across different departments prevent IAS officers from developing deep expertise in any one domain. As governance becomes increasingly complex, this lack of specialization hampers their ability to become effective policy experts.
  - ◆ **Case Study:** Despite working on the Sarva Shiksha Abhiyan for two years, an IAS officer, Mr. X in UP was transferred to an unrelated department. He transferred to another department before he could gain expertise which leads to a lack of domain-specific knowledge.
- **Outdated Personnel Practices:** The bureaucratic system has struggled with outdated promotion practices that fail to incentivize performance or reward competence, further contributing to inefficiency. For example, promotions are often based on seniority rather than performance, which demotivates efficient officers while rewarding mediocrity.
- **Corruption and Inefficiency:** Corruption remains a persistent issue within India's bureaucracy, eroding public trust in governance.
- According to the World Bank's measure of government effectiveness, India ranks only moderately which shows country's bureaucratic system struggles with poor quality of policy implementation and lack of administrative independence.
  - The Vyapam Scam in Madhya Pradesh highlighted the involvement of officials in recruitment fraud, shaking public confidence in governance.
  - A 2018 Transparency International report found that bribery was a common practice in accessing public services in India.

**Note:** India was ranked 93 out of 180 countries on the Corruption Perception Index (CPI) 2023.

- **Executive-Led Governance:** India's governance is often described as executive-led, with centralized decision-making. **This structure has helped in quick policy shifts and infrastructure development but has also led to significant drawbacks:**
  - **Bottlenecks in Policy Implementation:** Centralized power can slow down the implementation of policies as decisions are often delayed due to top-heavy control.

- **Lack of Accountability:** A concentration of power in the executive sometimes means a lack of accountability, with bureaucrats sidelined from decision-making.
- **Undermined Bureaucrats' Role:** The centralization of power can reduce bureaucrats' ability to act as independent policy executors, limiting their capacity to contribute effectively.
- Critics argue that the increasing centralization of power in the Prime Minister's Office (PMO) risks further undermining the autonomy of senior bureaucrats, which could lead to disempowerment of the IAS officers and hinder their role in effective governance.

**Efforts to Reform Bureaucracy:**

- In recent times (under the ruling regime), there have been attempts to address bureaucratic shortcomings. These include:
  - **Curbing Politicized Transfers:** Efforts have been made to reduce the influence of political loyalty in bureaucratic postings, aiming to restore professionalism.
  - **Enhancing Accountability:** Measures have been introduced to increase bureaucratic accountability and improve governance. *E.g. The introduction of the SPARROW system for online performance appraisal of IAS officers is a step toward ensuring accountability.*
  - **Need for Administrative Reforms:** Administrative reforms in India have been discussed since Independence. Over 50 commissions and committees have been set up to suggest improvements to the system.
    - ◆ **The First Administrative Reforms Commission (1966):** This was the first major attempt to reimagine India's administrative structure. It emphasized the **need for specialisation, accountability, and merit-based promotions** within the bureaucracy.
    - ◆ **The Second Administrative Reforms Commission (2005):** This commission recommended several reforms to modernize the bureaucracy, including:
      - ◆ Lowering the permissible age for entry into the civil services.
      - ◆ Introducing performance-based promotions and encouraging lateral entry into the system.
      - ◆ Creating safeguards to prevent arbitrary transfers and promote greater job security.

**Learning from the U.S. Model (DOGE):**

- **Proposed by Donald Trump:** The DOGE aims to streamline government functions, reduce inefficiencies, and eliminate redundant agencies.

- India could establish a body like DOGE to tackle inefficiencies within the civil service and recommend reforms.

**Government's Push for Reform through Lateral Entry:**

- Lateral entry refers to appointing professionals from the private sector, academia, or other government services to senior bureaucratic roles instead of relying solely on career civil servants like IAS officers.
- **Objective:** To infuse fresh perspectives, domain expertise, and specialized knowledge into policy making.

**Government's Efforts:**

- Since 2018, the central government has focused on recruiting professionals through lateral entry for roles requiring specific technical expertise. **By 2023, 57 professionals, including individuals from the private sector, were appointed to key roles.**

**Resistance to Lateral Entry:**

- Career bureaucrats argue that lateral entrants, who are not part of the traditional hierarchy, could demoralize IAS officers waiting for promotions.
- IAS officers fear that their career progression may be affected, reducing motivation for long-term public service.
- Critics argue that lateral entry does not provide reservation provisions, which are mandatory for IAS recruitment, thereby potentially excluding candidates from **Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC)**.
- Resistance from political allies reportedly led to a U-turn by the Modi government on some lateral entry appointments.

**A shift in the traditional bureaucratic structure:**

- **Earlier Scenario:** IAS officers held near-total dominance over Joint Secretary roles in the central government a decade ago.
- **Current Scenario:** Only 33% of Joint Secretary positions are held by IAS officers, indicating a shift in the traditional bureaucratic structure.

To improve the bureaucracy, a comprehensive approach is needed. Recruitment should focus on merit and specific expertise, and promotions should be based on performance, not just seniority. Bureaucrats should be protected from politically motivated transfers, and there should be more specialization in policymaking roles to improve accountability and efficiency. Also, the government should invest in data systems to track the performance of bureaucrats, which would help in making better decisions about their roles and responsibilities. *These reforms are crucial for India to reach its economic goals and to ensure that the government serves its people effectively.*

## EXPECTED QUESTIONS FOR UPSC CSE

### Descriptive Question

Q. Discuss the need for administrative reforms in India's bureaucracy. How effective is the concept of lateral entry in improving bureaucratic efficiency? [250 Words] [15 Marks]

## PRODUCTIVITY OF PARLIAMENT (18TH LOK SABHA WINTER SESSION 2024)

**Why in News:** The first winter session of 18th Lok Sabha ended on December 20 as one of the least productive and most acrimonious in history.

### Key Details

- Instead of focusing on discussions and passing laws, most of the time was wasted in arguments and conflicts.
- **Productivity in the Rajya Sabha was 40%**, as it met for 43 hours and 27 minutes of the schedule. The **Lok Sabha functioned for 54.5%** of its scheduled time.
- The session was scheduled to take up 16 Bills in the legislative business and the first batch of supplementary grants under the financial business.
- Out of the 16 bills, only one, called the **Bharatiya Vayuyan Vidheyak, 2024**, was passed by both the Lok Sabha and the Rajya Sabha. This bill is important for the civil aviation industry.

### Bills Passed in the Rajya Sabha only:

The **Rajya Sabha** passed two important bills:

- **The Boilers Bill:** This law makes changes to rules regarding large industrial furnaces and boilers.
- **The Oilfields (Regulation and Development) Amendment Bill:** This law changes the rules for how oilfields are managed and developed.

### Bills Passed in the Lok Sabha only:

The **Lok Sabha** passed three important bills, including:

- **The Banking Laws (Amendment) Bill:** A bill to change rules for banking laws.
- **The Railways (Amendment) Bill:** A bill to change rules for the railway sector.
- **The Disaster Management (Amendment) Bill:** A bill that updates rules for managing natural disasters.

### Bills Referred to a Joint Committee:

- Two significant bills were introduced:
  - **The Constitution (One Hundred and Twenty-Ninth Amendment) Bill** and
  - **The Union Territories Laws (Amendment) Bill** These bills aim to make **elections** in India happen at the same time (called **simultaneous elections**).

- These bills were sent to a **Joint Committee** (a group of members from both houses) for further discussion and review.

## Powers and Functions of the Indian Parliament

### Legislative Powers and Functions:

- **Main Role:** Parliament makes laws for the country. It can make laws on topics listed in the **Union List** (matters that only the central government can handle) and the **Residuary Subjects** (topics not listed anywhere).
- **Concurrent List:** If both Parliament and state legislatures make laws on the same topic, Parliament's law prevails.
- **Special Cases:** Parliament can also make laws on certain state matters under special circumstances like National Emergency or when states request it.
- **Ordinances:** If Parliament is not in session, the President can pass temporary laws (ordinances), but these need Parliament's approval within 6 weeks.

### Executive Powers and Functions:

- **Control Over the Executive:** The Parliament holds the government (Executive) accountable through various motions like no-confidence motions, debates, and discussions.
- **Responsibility:** Ministers are responsible to Parliament for their actions, particularly the **Lok Sabha** (lower house). If the government loses Parliament's confidence, it must resign.

### Financial Powers and Functions:

- **Control Over Money:** Parliament is responsible for approving all taxes and government spending. It does this through the **budget**.
- **Financial Committees:** Parliament monitors government spending using committees like the **Public Accounts Committee** to ensure there is no misuse of funds.
- **Anniversary Rule:** Money allocated by Parliament has to be spent within the financial year or it lapses.

### Constituent Powers and Functions:

- **Amending the Constitution:** Parliament has the power to amend (change) the Constitution, but it must follow specific rules. Some changes require a **special majority**, and some require the approval of **state legislatures**.
- **Basic Structure Doctrine:** Parliament cannot change the "basic structure" of the Constitution, as ruled by the Supreme Court.

### Judicial Powers and Functions:

- **Impeachment:** Parliament can impeach the **President** if they violate the Constitution and remove the **Vice-President**.
- **Removing Judges:** Parliament can recommend the removal of judges from the Supreme Court and High Courts.
- **Privileges and Contempt:** Parliament can punish members or others who break its rules or show contempt.

### Electoral Powers and Functions:

- **Electing Key Officials:** Parliament helps elect the **President** (with state legislatures) and **Vice-President**. The **Lok Sabha** elects its **Speaker**, and **Rajya Sabha** elects its **Deputy Chairman**.

- **Laws for Elections:** Parliament makes laws that regulate elections to the **President, Vice-President, and Parliament.**

#### Other Powers and Functions:

- **Deliberative Role:** Parliament is the main forum for discussing national and international issues.
- **Emergency Approvals:** It approves **emergency** declarations by the President (National, State, or Financial).
  - **State Changes:** It can create or abolish state legislative councils, change state boundaries, and modify the names of states.
  - **Judicial Power:** It regulates the **Supreme Court** and High Courts, and can create common courts for multiple states.

### External Affairs Minister's Statements on India-China Relations:

S. Jaishankar, the **External Affairs Minister**, spoke about **India-China relations** in both houses of Parliament.

Moving forward, it is essential to restore decorum and respect in parliamentary proceedings, ensuring that the focus shifts back to effective legislation and constructive debates. The government and the Opposition must prioritize dialogue and cooperation to address key issues like electoral reforms, economic policies, and national security, while upholding the principles of democracy and governance.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

- Q. In recent years, there has been a consistent decline in the productivity of Parliament. Comment on the factors behind this decline and the importance of Parliament in Indian polity. [15 marks, 250 words]

## JUDICIAL APPOINTMENTS IN INDIA: COLLEGIUM, CHALLENGES, AND THE RULE OF LAW

**Why in News:** Traditionally, the Collegium appoints judges based on recommendations from High Court Chief Justices, intelligence reports, and judicial records. However, as per some recent reports, the **Collegium will personally interview candidates** before approving their elevation as High Court Judges (**A more rigorous assessment**).

#### Key Details

- **Enhanced Scrutiny Through Interviews:** This adds an extra **layer of scrutiny** and ensures that the most competent individuals are selected.
  - The idea is that for an important constitutional role like that of a judge, face-to-face interactions with decision-makers can provide **better insights into**

a candidate's **temperament, legal acumen, and suitability** for the position.

- **Exclusion of Candidates with Close Relatives in the Judiciary:** The Collegium aims to **reduce judicial nepotism** by **excluding candidates whose close relatives are serving or have served as judges.**
  - This is significant because the Indian judiciary has been criticized for being a "judicial dynasty," where several judges come from families with a long history in the legal profession.
  - While some meritorious candidates might get excluded under this rule, the Collegium believes that this step will **promote diversity** in the judiciary by ensuring that talented individuals from non-judicial backgrounds get a fair chance.

#### Challenges in the Collegium system

- **Lack of Binding Rules and Transparency**
  - The **Collegium system** was created by the judiciary itself, not by a law made by the legislature. This means there are **no formal rules** governing how it works.
  - This leads to a situation where the system is **not accountable to anyone**, and its decisions are often **not explained publicly**. Its methods are **opaque** and **ad-hoc**, meaning decisions can seem unpredictable and unclear.
    - ◆ For example, while there is something called the "**memorandum of procedure**" (a set of guidelines for appointments), there are questions about whether breaching these guidelines has any consequences. If the **Collegium does not follow these procedures**, who will hold it accountable?
- **Government Interference:**
  - The concern here is that the **government's interference** could prevent any meaningful reform. If the government is allowed to **stonewall** or reject proposals for reform without clear reasons, the system won't improve.

#### Clear Rules for Future Collegium Functioning

- There is uncertainty about how the **Collegium will operate in the future**. Will the new reforms, like **interviewing candidates**, be included in the formal rules?
- The worry is that as different Chief Justices come and go, the **process might change** again, and there will be no guarantee that it will always be consistent or transparent.

#### The Debate Over Judicial Appointments in the Constituent Assembly

The makers of the Indian Constitution debated extensively on how judges should be appointed. **Different models were suggested, including:**

- **Complete executive control:** The President (effectively the government) having sole discretion.

- **Complete judicial control:** The judiciary having the exclusive right to appoint judges.
- **A balanced approach:** A system involving both the executive and judiciary.

Ultimately, the Constituent Assembly, under the leadership of Dr. B.R. Ambedkar, chose a “middle course” that allowed both branches to have a role in appointments.

#### Constitutional Provisions on Judicial Appointments

The Constitution of India, as drafted, provides the following framework for judicial appointments:

- **Supreme Court Judges (Article-124):**
  - Appointed by the **President of India**
  - In consultation with the **Chief Justice of India (CJI)** and other judges deemed necessary.
- **High Court Judges (Article-217):**
  - Appointed by the **President**
  - In consultation with the **CJI, the Governor of the respective State, and the Chief Justice of that High Court.**
- **Transfer of High Court Judges (Article-222):**
  - The President has the power to transfer judges from one High Court to another.
  - However, this can only be done **after consulting the CJI.**

#### Consultation in the Judicial Appointments

Although the Constitution mandates “consultation” before judicial appointments, it **does not define**:

- What level of consultation is required.
- Whether the government must follow the judiciary’s advice.
- How transparent the process should be.

This ambiguity left room for interpretation, which led to multiple legal challenges.

#### The Second Judges Case (1993) and the Collegium System

In 1993, the Supreme Court, in the **Second Judges Case**, interpreted “consultation” to mean “**concurrence**”. This meant that:

- The President (government) **must agree** with the judiciary’s decision on judicial appointments.
- However, this concurrence **was not just with the CJI alone** but with a **collegium** of senior judges.

Thus, the Court **created a new system** to protect judicial independence. The collegium, instead of the government, would take the lead in appointments.

#### Way Forward

The collegium system, despite its criticisms, remains the established legal mechanism for judicial appointments in India. While recent reforms, such as interviews for candidates and efforts to curb judicial nepotism, indicate a willingness to enhance transparency, the system still suffers

from lack of formal rules and governmental resistance. The executive’s ability to delay appointments undermines judicial independence and disrupts the balance of power envisioned in the Constitution.

#### EXPECTED QUESTIONS FOR UPSC CSE

##### Prelims MCQ

Q. Consider the following statements regarding the Collegium System:

**Statement I:** The Collegium system was created by the judiciary itself, not by a law made by the legislature.

**Statement II:** While the Supreme Court ensured judicial primacy in appointments, it did not establish binding rules for the process.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- (b) Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I
- (c) Statement I is correct but Statement II is not correct
- (d) Statement I is not correct but Statement II is correct

(b) Answer

##### Descriptive Question

Q. The collegium system for judicial appointments in India has been both praised for ensuring judicial independence and criticized for its opacity. Critically analyze the challenges associated with the collegium system and suggest reforms to strengthen judicial appointments while upholding the rule of law. [150 words] [10 marks]

#### SECTION 152 BNS: A NEW FORM OF SEDITION?

**Why in News:** Recently, the Rajasthan High Court’s ruling in *Tejender Pal Singh v. State of Rajasthan (2024)* highlighted concerns that **Section 152 of the Bharatiya Nyaya Sanhita (BNS)** could be misused to suppress legitimate dissent, similar to the way **Section 124A of the Indian Penal Code (IPC) (sedition law)** was previously used.

##### Section 152 of the BNS:

- The **Bharatiya Nyaya Sanhita (BNS)** came into effect in 2024 and formally **repealed Section 124A of the IPC.**
- However, it introduced **Section 152**, which criminalizes:
  1. **Acts that excite secession** (i.e., promoting the separation of a part of India).

2. Acts that incite armed rebellion against the government.
3. Subversive activities (any action that weakens the government's authority).
4. Encouraging separatism (promoting division or autonomy of specific regions).
5. Threats to sovereignty, unity, and integrity of India (actions that could destabilize the nation).

**Note:** While the term "sedition" is absent, the broad scope of this section makes it similar to the old sedition law.

### Issues with the Section 152

- **Lack of clear definition:** Section 152 punishes "acts endangering the sovereignty, unity, and integrity of India." However, the law does **not define** what exactly constitutes "endangering" these values.
- **Broad and Vague Language:** Broad and vague language allows the government and law enforcement agencies to interpret it in an expansive manner.
  - For example, a speech that criticizes a historical or political figure or shows sympathy towards a controversial person might be wrongly labeled as a threat to "unity and integrity."
- **May lead to Criminalisation of dissent:** This means dissent, criticism, or unpopular opinions could be criminalized under Section 152. Given the current polarized and fragmented sociopolitical climate, such a strict and vague law without safeguards may be misused to target individuals or suppress opposition voices.
- **Low Threshold for Criminal Liability ("Knowingly" Clause):** Section 152 states that a person can be punished if they act "knowingly" in a way that excites secession, armed rebellion, separatist feelings, or subversive activities. This means that intent to incite violence or rebellion is not necessary—just knowing that their actions might be perceived that way is enough for prosecution.
- **Risk of Criminalizing Social Media Activity:** Even if someone shares a post without the intention of inciting rebellion, but knows that it may be controversial, they could be charged. For instance, retweeting or sharing a critical opinion could be enough to arrest and prosecute someone.
- **No Requirement for Actual Consequences:** The law does not require the government to show actual consequences (riots, violence, rebellion, etc.) before arresting a person. The mere potential for provocation is enough. This makes wrongful arrests more likely and gives authorities excessive power to silence critics.

### Comparison with Sedition Law (Section 124A, IPC)

- **Sedition law required stronger evidence:**
  - Under Section 124A of IPC, courts often asked for **clear proof of incitement to violence** before punishing someone.
  - Section 152 lowers this requirement by criminalizing actions even when they do not directly lead to violence.

### Evidence of Past Misuse (NCRB Data)

- The National Crime Records Bureau (NCRB) shows:
  - Between 2015 and 2020, 548 people were arrested under sedition charges (Section 124A, IPC).
  - Only 12 people were convicted in 7 cases.
  - This means that many people were arrested and prosecuted but never found guilty—indicating that the law was misused to harass and intimidate citizens.
- Section 152 of BNS is even broader than Section 124A, meaning the potential for abuse is even higher. Unfortunately, the government did not learn from the misuse of sedition laws when drafting Section 152, making it equally or even more dangerous for free speech.

### Important Supreme Court Cases Supporting Free Speech

#### Balwant Singh & Anr v. State of Punjab (1995)

- Two individuals shouted slogans supporting a separate Sikh state.
- The Supreme Court ruled that casual sloganeering is not sedition unless it actually incites people to violence.
- This means that just uttering controversial words is not enough—there must be proof of real consequences.

#### Javed Ahmad Hazam v. State of Maharashtra & Ors (2024)

- The Supreme Court ruled that when judging whether speech is harmful, we should assess its impact on strong-minded and reasonable people, not on those who are easily offended or react impulsively.
- This ensures that the law is not misused to target speech just because some people feel hurt or offended.

#### Kedar Nath Singh v. State of Bihar (1962)

- The Supreme Court differentiated between two things:
  - Disloyalty toward the government (which can be punished if it incites violence).
  - Strong criticism of government policies (which is completely legal, even if it is harsh or aggressive).
- This ruling protected the right to criticize the government without fear of sedition charges.

### Way Forward

*The judiciary must ensure that Section 152 is only used in genuine cases where speech leads to real harm (such as inciting violence or rebellion). Courts must set clear limits so that enforcement agencies do not misuse this law to silence dissent. Freedom of speech is a fundamental right, and it must be protected to uphold democracy and individual liberties.*

## EXPECTED QUESTION FOR UPSC CSE

### Prelims MCQ

Q. The term “Section 152 of the Bharatiya Nyaya Sanhita (BNS)” often heard in the news roughly corresponds to which of the following offence?

- (a) Attempt to murder      (b) Crime against women  
(c) Sedition                      (d) Untouchability

Answer: (c)

## CONCERNS OVER DELIMITATION AND THE LOSS OF PARLIAMENTARY SEATS

**Why in News:** The Chief Ministers of Andhra Pradesh and Tamil Nadu have expressed serious concerns regarding the proposed delimitation exercise and the potential loss of parliamentary seats for their states.

### Key Details

- This issue stems from the fact that Andhra Pradesh, Tamil Nadu, and other southern states have made **significant progress in fertility transition**, leading to a reduced share of the population compared to the northern states.

### Readjustment after Each Census

Following each census, there is a need for **readjustment** in two key areas:

- Allocation of seats** in the Lok Sabha (House of the People) to the states.
- Division of each state into territorial constituencies.**

Parliament has the authority to determine the **process** and **body** responsible for this readjustment. In line with this, Parliament has enacted the **Delimitation Commission Acts** in 1952, 1962, 1972, and 2002 to facilitate the exercise.

### Key Amendments:

- 42nd Amendment Act (1976):** This amendment **froze** the allocation of seats in the Lok Sabha and the division of states into constituencies based on the **1971 Census**. The freeze was imposed until the year **2000**, with the aim of encouraging population control measures.
- 84th Amendment Act (2001):** The **freeze** on the readjustment of seats was **extended for another 25 years** (until 2026) with the same purpose of promoting **family planning** and limiting population growth. This amendment also allowed the **readjustment and rationalization of territorial constituencies** based on the population figures of the **1991 Census**.
- 87th Amendment Act (2003):** This amendment further **modified the delimitation process** by allowing constituencies to be delineated based on the **2001 Census** rather than the 1991 Census. However, this adjustment **did not affect** the number of seats allocated to each state in the **Lok Sabha**.

The fear is that the population control measures, which have reduced population growth, may result in diminished representation in Parliament for these states.

### Shifting Policies on Family Size in Andhra Pradesh

Highlighting the significance of this issue, Andhra Pradesh Chief Minister revealed that the state government is considering **new legislation** to encourage larger families.

- His government is thinking of enacting a law that would make only those with more than two children eligible to contest local body elections.**
- This marks a potential reversal of a previous law that barred individuals with more than two children from contesting local polls.

### Fertility Decline (Difficult to Reverse)

- Fertility transitions** (moving from high birth rates to lower ones) are a natural process as societies develop.
- Once a country reaches low fertility, it's very **difficult to reverse this trend**, even with government incentives.
- Globally, even though some countries try to increase birth rates, these efforts have mostly failed.

### China's One-Child Policy

- China implemented a **one-child policy** to control its population, but this led to **serious problems**:
  - Marriage Market Issues:** Fewer women are available for marriage because of a gender imbalance caused by a preference for male children.
  - Dependency Burden:** The aging population needs support, but there aren't enough younger people to take care of them.
  - Extremely Low Fertility:** Birth rates are now so low that it's nearly impossible to reverse them.
- These quick and strict measures reduced the population but ignored long-term effects, leading to crises in family structures and social security.

### Other Countries' Experiences

- Countries like **Japan and South Korea**, which have very low birth rates, tried to increase them with incentives (e.g., financial rewards for having children) but failed.
- These efforts show that simply encouraging more births doesn't work.

### Convergence in Fertility Decline

- Across India, **fertility rates** (number of children per family) are declining, and the differences between regions are gradually narrowing.
- However, despite this convergence, some regions still have larger populations due to **population momentum**. This happens because even with low fertility, a previously larger population base continues to grow for some time.

Policies that try to manipulate population composition (like forcing fewer or more births) disrupt the natural balance. This imbalance causes issues that are hard to fix, such as a shortage

of workers and an overburdened system of social welfare for the elderly. The southern Indian states' concerns about losing parliamentary representation due to lower fertility are understandable. However, their proposed responses, such as reversing family planning policies, are unlikely to work in the long run. Instead of focusing on short-term measures, there should be a broader focus on sustainable population strategies.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

- Q. Why was the delimitation process frozen until 2026 in India?
- (a) To ensure stability in electoral boundaries during economic reforms
  - (b) To avoid penalizing states that implemented population control measures
  - (c) To give states time to address boundary disputes
  - (d) To ensure uniform distribution of resources across states

Answer: (b)

**Descriptive Question**

Q. Delimitation is a critical exercise to ensure equitable representation in a democracy. Discuss the significance of delimitation, the challenges it poses, and suggest measures to address regional disparities while upholding democratic principles. [150 words] [10 marks]

**AMENDMENTS TO RULE 93 OF THE CONDUCT OF ELECTION RULES, 1961**

**Why in News:** Recent amendments to Rule 93 of the Conduct of Election Rules, 1961 have raised concerns about the balance between electoral transparency and security.

The Conduct of Election Rules, 1961 is a set of procedural rules established under the Representation of the People Act, 1951, to govern the conduct of elections in India. These rules provide detailed guidelines for the electoral process, ensuring its smooth, transparent, and orderly execution.

**Key Highlights from the News**

- A political party filed a petition in the Supreme Court challenging the recent amendments made to Rule 93.
- The amendment restricts public access to certain election

records, including CCTV footage, video recordings from polling booths, and Forms 17-C Parts I and II.

- Previously, the rules allowed public examination of election-related documents without exceptions, promoting greater transparency in the electoral process.
- Officials believe that the **changes aim to protect the election process from potential misuse or manipulation of electronic records**, such as creating false narratives through doctored footage.
- Critics argue that restricting access to essential election data erodes public trust in the electoral system.
- There are concerns that the changes were made unilaterally by the Election Commission without public consultation.

**Provisions Related to Elections:**

- **Article 324:** Vests the Election Commission with the power to supervise, direct, and control elections.
- **Articles 325 & 326:** Provide for universal adult suffrage and prohibit discrimination based on religion, race, caste, or sex.
- **Article 327:** Empowers Parliament to make laws regarding elections.
- **Article 328:** Empowers State Legislatures to regulate elections for State bodies.
- **Representation of the People Act (RPA), 1950 & 1951:** Governs the conduct of elections and election disputes.

Such developments have triggered a broader discussion on the urgent need for electoral reforms. The restriction of public access to critical election-related records raises questions about the transparency and accountability of the electoral process. While the Election Commission's amendments aim to protect against potential misuse of electronic records, critics argue that they undermine the core principles of free and fair elections.

**Major Electoral Reforms Introduced Over the Years:**

- **Anti-Defection Law (1985):** Added the 10th Schedule to the Constitution to curb defections.
- **Introduction of NOTA (2013):** "None of the Above" option allows voters to reject all candidates.
- **Introduction of VVPAT (2013):** Ensures voter-verifiable paper trails for electronic voting machines (EVMs).
- **Ceiling on Election Expenses:** Limits on campaign spending by candidates.
  - Candidates in larger states can spend up to **₹95 lakh for Lok Sabha elections and ₹40 lakh for Legislative Assembly elections.**

- Candidates in smaller states can spend up to ₹75 lakh (Lok Sabha) and ₹28 lakh (Legislative Assembly).
- **EPIC (Electors Photo Identity Card):** Introduced to prevent bogus voting.
- **Linking Aadhaar with Voter ID:** To eliminate duplicate and fake voter entries.
- **Electronic Voting Machines (EVMs):** Introduced in 1982 to ensure faster and more accurate counting of votes.
- **National Voter Service Portal (NVSP):** Allows citizens to check their voter status, register, and update details.
- **SVEEP (Systematic Voters' Education and Electoral Participation):** Aims to increase voter awareness and participation.
- **Postal Ballot:** Extended to senior citizens (80+ years), disabled voters, and NRIs.
- **Declaration of Criminal Records:** Candidates must declare criminal records and assets.
- **Subramanian Swamy vs Election Commission of India case (2013):** The Supreme Court ruled that Voter Verifiable Paper Audit Trails (VVPATs) must be used in elections to make the process more transparent and trustworthy. The court also instructed the government to provide funds to implement VVPATs.
- **People's Union for Civil Liberties v. Union of India (2013):** The Supreme Court directed that Electronic Voting Machines (EVMs) must have a "None of the Above" (NOTA) option.
- **Manoj Narula v. Union of India (2014):** The Court ruled that a person charged with a criminal offense cannot be disqualified from contesting elections unless convicted. However, it emphasized that political parties should refrain from fielding candidates with a criminal background.
- **Public Interest Foundation v. Union of India (2019):** The Supreme Court directed political parties to publish the criminal records of their candidates on their **official websites, social media platforms, and newspapers**. It also instructed the Election Commission of India (ECI) to create a framework to ensure that information on candidates' criminal backgrounds is widely disseminated to the public.

### Challenges in the Electoral Process:

- **Criminalization of Politics:** Rise of candidates with criminal backgrounds.
- **Use of Money Power:** High election expenses and voter bribery.
- **Fake and Bogus Voting:** Issues with electoral rolls.
- **Low Voter Turnout:** Lack of awareness and urban apathy.
- **Misuse of social media:** Spread of fake news and targeted propaganda.
- **Lack of Inner-Party Democracy:** Dynastic politics and lack of transparency in political parties.

### Landmark Cases related to Electoral Reforms:

- **Lily Thomas v. Speaker, Lok Sabha Case (1993):** The Supreme Court stated that voting is a formal way for a person to express their opinion on a matter. This includes the right to vote for, against, or even to remain neutral on a motion or resolution.
- **Association for Democratic Reforms v. Union of India (2002):** The Supreme Court ruled that every candidate contesting an election **must declare their criminal records, financial assets and liabilities, and educational qualifications**.
- **Ramesh Dalal v. Union of India (2005):** The Court held that a sitting Member of Parliament (MP) or Member of the Legislative Assembly (MLA) would be disqualified from contesting elections if convicted and sentenced to imprisonment for two years or more.

### Committees Related to Electoral Reforms

- **Dinesh Goswami Committee (1990):** Focused on ensuring free and fair elections, including changes to prevent electoral malpractices.
- **Vohra Committee (1993):** Highlighted the growing nexus between criminals and politicians in the electoral process.
- **Indrajit Gupta Committee (1998):** Recommended partial state funding of elections to reduce the influence of money power.
- **Law Commission of India 170th Report (1999):** Proposed significant changes to electoral laws to improve the election process.
- **Second Administrative Reforms Commission Report on Ethics in Governance (2007):** Headed by Veerappa Moily, this report addressed ethical governance, including **electoral integrity**.
- **S. Verma Committee Report (2013):** Addressed criminalization in politics and suggested stricter disqualifications for candidates with criminal records.

### Conclusion

Electoral reforms must aim to create an inclusive, transparent, and corruption-free electoral system. The focus should be on empowering citizens to participate actively in the democratic process, ensuring accountability in governance, and upholding the integrity of India's democracy. A collective effort involving the government, Election Commission, civil society, and the public is essential to achieve this vision.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. The Conduct of Election Rules, 1961, primarily deals with:

1. The election process for both Central and State legislatures.
2. The procedure for the filing and scrutiny of nomination papers.
3. The process of voting and counting of votes in elections.

Which of the above statements is/are correct?

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

Answer: (d)

**Descriptive Question**

Q. In 2024, amendments were made to Rule 93 of the Conduct of Election Rules, 1961, in the context of the electoral process in India. Discuss the key changes introduced in the rule and their significance for the conduct of elections. [250 words] [15 marks]

**THE DECLINE OF PRIVATE MEMBERS' BILLS AND RESOLUTIONS IN INDIAN PARLIAMENT**

**Why in News:** A recent analysis has highlighted the diminishing significance of Private Members' Bills and Private Members' Resolutions in the Indian Parliament. These are crucial mechanisms that allow individual MPs to express their views and propose initiatives independent of their party's agenda.

**Key Terms**

**Private Members' Bills**

- Proposed laws introduced by MPs who are not Ministers.
- Serve as a medium for political expression.
- Only 14 Private Members' Bills have been passed since independence, with the last one in 1970.

**Private Members' Resolutions**

- Declarations or recommendations made by MPs, voted upon by the House.
- They focus on policy directions or issues of importance.
- **Note:** Resolutions do not become laws but express the opinion or intent of the House.

Time Spent During the 17th Lok Sabha (2019–2024)	Time Spent During Two Sessions of the 18th Lok Sabha (2024)
<b>Private Members' Bills:</b> <ul style="list-style-type: none"> <li>• Lok Sabha: 9.08 hours</li> <li>• Rajya Sabha: 27.01 hours</li> <li>• Combined time spent is negligible compared to total hours of Parliament sessions.</li> </ul>	<b>Private Members' Bills:</b> <ul style="list-style-type: none"> <li>• Lok Sabha: 0.15 hours</li> <li>• Rajya Sabha: 0.62 hours</li> </ul>
<b>Private Members' Resolutions:</b> <ul style="list-style-type: none"> <li>• Lok Sabha: 16.43 hours</li> <li>• Rajya Sabha: 20.78 hours</li> </ul>	<b>Private Members' Resolutions:</b> <ul style="list-style-type: none"> <li>• Lok Sabha: 1.98 hours</li> <li>• Rajya Sabha: 2.09 hours</li> </ul>

**Challenges related to Private Members' Business**

- **Scheduled on Fridays:** Private Members' Bills and Resolutions are typically scheduled for Friday afternoons. **Fridays are inconvenient for MPs, as many are eager to leave for their constituencies for the weekend.** This leads to a lack of participation and seriousness regarding such Bills.
- **Delay in Taking Up Bills:** The limited time allocated for Private Members' business means it can take years for legislation to come up for discussion.
  - E.g. A senior Congress leader mentioned that three of his Bills, including an amendment to the anti-defection law, have been pending for over 15 years. These Bills were introduced during the 15th Lok Sabha (2009-2014) and have not been discussed yet.
- **Not Taken Seriously:** MPs often skip the discussions on these Private Members' Bills. This shows a general lack of seriousness about the process.

**IMPORTANCE OF THESE INSTRUMENTS**

**Individual Expression:** These are unbound by party directives, allowing MPs to raise independent issues or perspectives.

**Political Messaging:** For instance, in 1966, H.V. Kamath (Praja Socialist Party) introduced a Private Member's Bill to amend

the Constitution, arguing that only Lok Sabha members should be eligible for the post of Prime Minister. This was in reaction to

Indira Gandhi's appointment, as she was a Rajya Sabha member at the time.

### Key differences between Public Bills and Private Bills

Aspect	Public Bill	Private Bill
Introduced by	A minister in the Parliament.	Any member of Parliament other than a minister.
Represents	Policies of the government (ruling party).	Views of opposition parties or an individual MP.
Approval Likelihood	Higher chance of being approved by the Parliament.	Lesser chance of being approved by the Parliament.
Rejection Impact	Reflects loss of parliamentary confidence in the government, which may lead to its resignation.	No impact on government stability or parliamentary confidence.
Notice Period	Requires a seven-day notice before introduction.	Requires a one-month notice before introduction.
Drafting Responsibility	Drafted by the concerned department in consultation with the law department.	Drafting is the responsibility of the MP introducing it.

### Conclusion

Private Members' Bills and Resolutions have historically been important for independent political expression and addressing issues beyond party agendas. However, their relevance and usage have significantly declined due to systemic indifference, prioritization of government business, and lack of follow-through by MPs. **However, a senior MP suggested scheduling Private Members' business midweek (e.g., on Wednesday) instead of Friday afternoons. This could ensure better participation and focus.**

#### EXPECTED QUESTIONS FOR UPSC CSE

##### Descriptive Question

Q. Private Members' Bills and Resolutions play a crucial role in ensuring parliamentary democracy by allowing MPs to raise independent issues beyond party directives. However, their relevance has significantly declined in recent years. Analyze the challenges faced by Private Members' Business and suggest measures to strengthen their role in the legislative process. [150 words] [10 marks]

## NEW DRAFT REGULATIONS BY THE UGC AND ITS OPPOSITION

**Why in News:** The UGC has proposed changes to its 2010 regulation regarding the selection and appointment of vice chancellors (VCs).

### Key Details

- **Current Rule:** Only academicians with a **minimum of 10 years as professors** are eligible.
- **Proposed Change:** Professionals with over 10 years of experience in industries, public administration, or public policy can also be considered for the VC role.
- **Objections by States:** Some state governments argue that this violates federal principles as education is a subject of shared responsibility between the Union and the States under the Constitution. **They demand the withdrawal of the regulation.**

### Objective and Scope of the UGC Act (1956)

- **Purpose of the Act:** To coordinate and determine standards in universities, particularly in teaching, examination, and research.
- **UGC Functions:**
  - Allocate funds to universities for maintenance and development.
  - Recommend measures for improving university education.
  - Advise Union and State governments on grants to universities.
  - Collect and disseminate information on university education in India and abroad.
- **NOTE:** Section 26 of the UGC Act empowers it to frame

regulations, provided they align with the Act's purpose and are consistent with it.

### The Problem with UGC's Role in Appointing Vice Chancellors

- **Main Question:** Does the UGC have the authority to regulate VC selection under the Act?
- **UGC's Mandate:** Focuses on setting standards for teaching and research, not on VC appointments.
- **Legal Principle:** Subordinate legislation (rules and regulations) must remain within the bounds of the parent Act. If a regulation exceeds the Act's scope, it is considered *ultra vires* (beyond legal authority) and invalid.
- **Observation:** The UGC Act does not specifically address VC selection or qualifications, making the UGC's attempt to regulate this area legally questionable.

### Judicial Precedent

- **Bombay High Court Judgment (2011, Suresh Patilkhede Case):**
  - Stated that the qualifications and method of appointment of VCs do not have a direct impact on the standard of education.
  - Concluded that the UGC lacks the mandate to regulate VC appointments.
- **Supreme Court Judgment (2015, Kalyani Mathivanan Case):**
  - Overruled the Bombay High Court, stating that UGC regulations, as subordinate legislation, are binding on universities.
  - However, noted that certain UGC regulations, including those on VC selection, can be recommendatory for State universities.

#### Federal Principles and Constitutional Issues

- **Federal Principle Violation:** States argue that the regulation infringes on their autonomy in higher education, which falls under their jurisdiction per the Constitution.
- **Article 254 (Repugnancy Clause):**
  - Central laws prevail over State laws in cases of conflict.
  - However, subordinate legislation (UGC regulations) does not qualify as "central law" under Article 254. Only Acts of Parliament can override State laws.
  - State laws passed with Presidential assent take precedence over conflicting central laws in the State.

### Significance of Parliamentary Procedure

- **Parliamentary Oversight of Regulations:**
  - Regulations made under the UGC Act must be laid before Parliament.
  - Parliament does not formally approve these regulations but can amend them if necessary.
  - Supreme Court's reasoning that Parliament's laying

process gives binding authority to UGC regulations may not align with actual legislative procedure.

### Key Ruling in Kalyani Mathivanan Case

- **Binding Nature of Regulation 7.3.0:**
  - The Supreme Court clarified that UGC regulations on VC appointments are binding on Central universities.
  - For State universities, such regulations are recommendatory unless incorporated into State laws.

### Implications of the Current Controversy

- **Constitutional Debate:**
  - The validity of UGC's regulation depends on whether it aligns with the parent Act and respects federal principles.
- **Role of the States:**
  - As education is a concurrent subject, States retain significant control over university governance, including VC appointments.
- **Resolution Possibility:**
  - The Kalyani Mathivanan judgment supports the interpretation that UGC regulations are recommendatory for State universities, which could address some of the controversy.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

- Q. Consider the following statements regarding the vice chancellors (VCs):
1. Only academicians with a minimum of 10 years as professors are eligible for this post.
  2. The Vice-Chancellor (VC) is considered the 'Principal Academic and Executive Officer of the University'.
  3. The Prime Minister of India appoints Vice Chancellors based on recommendations from a selection committee.

Which of the statements given above are correct?

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

(a) Answer

#### Descriptive Question

- Q. Examine the proposed changes to the 2010 University Grants Commission (UGC) regulation regarding the selection and appointment of Vice Chancellors (VCs). Discuss their potential impact on the autonomy of higher education institutions and the quality of governance in Indian universities. [150 words] [10 marks]

## NATIONAL HUMAN RIGHTS COMMISSION (NHRC)

**Why in News:** Justice V. Ramasubramanian (Retired Supreme Court Judge) was appointed as the Chairperson of the NHRC.

- The post had been vacant since June 2024.

### About NHRC

- National Human Rights Commission of India (abbreviated as NHRC) is a **statutory body** constituted on 12 October 1993 under the Protection of Human Rights Ordinance of 28 September 1993.
- It was given a **statutory basis by the Protection of Human Rights Act, 1993 (PHRA)**.
- **Objective:** The NHRC is responsible for the protection and promotion of human rights, which is defined by the act as “rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India.

### Composition of NHRC

- The NHRC consists of the chairperson and five members (excluding the ex-officio members).
- A Chairperson, who has been a Chief Justice of India or a Judge of the Supreme Court.
- One member who is, or has been, a Judge of the Supreme Court of India and one member who is, or has been, the Chief Justice of a High Court.
- Three Members, out of which at least one shall be a woman to be appointed from amongst persons having knowledge of, or practical experience in, matters relating to human rights.
- **Ex-officio members:**
  - National Commission for Scheduled Castes,
  - National Commission for Scheduled Tribes,
  - National Commission for Women, National Commission for Minorities,
  - National Commission for Backward Classes,
  - National Commission for Protection of Child Rights; and
  - Chief Commissioner for Persons with Disabilities

### Appointment

- Sections 2, 3 and 4 of Protection of Human Rights Act, 1993 lays down the rules for appointment to the NHRC.
- The **chairperson and members of the NHRC are appointed by the President of India**, on the recommendation of a committee consisting of:
  - The Prime Minister (chairperson)
  - The Home Minister
  - The Leader of the Opposition in the Lok Sabha (Lower House)

- The Leader of the Opposition in the Rajya Sabha (Upper House)
- The Speaker of the Lok Sabha (Lower House)
- The Deputy Chairman of the Rajya Sabha (Upper House)

### Resignation and removal of Chairperson and Members

- The Chairperson or any Member may, **by notice in writing under his hand** addressed to the President of India, resign his office.
- The Chairperson or any Member shall only be removed from his office by order of the President of India **on the ground of proved misbehavior or incapacity** after the Supreme Court, on reference being made to it by the President, has, on inquiry held in accordance with the procedure.
- The President may, by order, remove from office the Chairperson or any Member if the Chairperson or such Member, as the case may be, -
  - is adjudged an insolvent; or
  - engages during his term of office in any paid employment outside the duties of his office; or
  - is unfit to continue in office by reason of infirmity of mind or body; or
  - is of unsound mind and stands so declared by a competent court;
  - is convicted and sentenced to imprisonment of an offence.

### Term of office of Chairperson and Members

- A person appointed as Chairperson shall hold office for a **term of three years** from the date on which he enters upon his office **or until he attains the age of seventy years**, whichever is earlier and shall be eligible for re-appointment.
- A person appointed as Member shall **hold office for a term of three years from the date on which he enters upon his office** and shall be eligible for re-appointment provided that no Member shall hold office after he has attained the age of seventy years.
- On ceasing to hold office, a Chairperson or a Member shall be ineligible for further employment under the Government of India or under the Government of any State.

### Powers and Functions of NHRC

- **Inquiry into Human Rights Violations:** Proactively or reactively inquire into violations of human rights by government of India or negligence of such violation by a public servant.
- **Protection and Implementation of Human Rights:** The protection of human rights and recommend measures for their effective implementation.
- **Addressing Inhibitors of Human Rights:** Review

the factors, including acts of terrorism that inhibit the enjoyment of human rights and recommend appropriate remedial measures.

- **Studying International Human Rights Instruments:** To study treaties and other international instruments on human rights and make recommendations for their effective implementation.
- **Promoting Human Rights Research:** Undertake and promote research in the field of human rights.
- **Visiting Jails and Studying Inmate Conditions:** Conducting visits to jails to evaluate the living conditions and rights of inmates.
- **Human Rights Education and Awareness:** Engage in human rights education among various sections of society and promote awareness of the safeguards available for the protection of these rights through publications, the media, seminars and other available means.
- **Supporting NGOs and Voluntary Efforts:** Encourage the efforts of NGOs and institutions that works in the field of human rights voluntarily.
- **Requisitioning Public Records:** Requisitioning any public record or copy thereof from any court or office.

### PRELIMS SPECIAL

About amendments made to Protection of Human Rights Act, 2019

- **Composition of NHRC:** Under the Act, the chairperson of the NHRC is a person who has been a Chief Justice of the Supreme Court. The Bill amends this to provide that a person who has been Chief Justice of the Supreme Court, or a Judge of the Supreme Court will be the chairperson of the NHRC.
- **Change in number of members:** The Act provides for two persons having knowledge of human rights to be appointed as members of the NHRC. The Bill amends this to allow three members to be appointed, of which at least one will be a woman.
- **New ex-officio member:** The Bill provides for including the chairpersons of the National Commission for Backward Classes, the National Commission for the Protection of Child Rights, and the Chief Commissioner for Persons with Disabilities as members of the NHRC.
- **Chairperson of SHRC:** Under the Act, the chairperson of a SHRC is a person who has been a Chief Justice of a High Court. The Bill amends this to provide that a person who has been Chief Justice or Judge of a High Court will be chairperson of a SHRC.
- **Term of office:** The Act states that the chairperson and members of the NHRC and SHRC will hold office for five years or till the age of seventy years, whichever is earlier. The Bill reduces the term of office to three years or till the age of seventy years, whichever is earlier. Further, the Act allows for the reappointment of members of the NHRC and SHRCs for a period of five years. The Bill removes the five-year limit for reappointment.
- **Union Territories:** The Bill provides that the central

government may confer on SHRC human rights functions being discharged by Union Territories. Functions relating to human rights in the case of Delhi will be dealt with by the NHRC.

### EXPECTED QUESTION FOR UPSC

#### Descriptive Question

- Q. What are the powers and functions of the NHRC in India? What changes were introduced by the amendments to the Protection of Human Rights Act, 2019? [15 marks, 250 words]

## CENTRAL INFORMATION COMMISSION

**Why in News:** The Supreme Court took a dim view of the vacancies in the Central Information Commission (CIC) and state information commissions (SICs) while directing the Centre to immediately fill the posts.

#### Key Issues Raised by the Court

- **Timely Appointments:** The Court stressed that positions should be filled without delay and asked the Centre to provide a progress report on the selection process.
- **Diversity Concerns:** The Court criticized that the appointments so far have been made only from bureaucrats and suggested that a wider range of people (with different backgrounds) should be considered.

#### Central Information Commission

- It is a statutory body, constituted with effect from 12-10-2005 under the **Right to Information Act, 2005**.
- The **jurisdiction** of the Commission extends over all Central Public Authorities.
- Central Information Commission **shall consist of the Chief Information Commissioner (CIC) and such number of Central Information Commissioners (ICs) not exceeding 10** as may be deemed necessary.
  - The CIC and ICs are appointed by the President of India. The oath of office is administered by the President.
- **Appointment of CIC/ICs**
  - RTI Act 2005 provides that the Chief Information Commissioner and Information Commissioners shall be persons of eminence in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.
  - Chief Information Commissioner or an Information Commissioner **shall not be a Member of Parliament or Member of the Legislature** of any State or Union Territory, **or hold any other office of profit** or connected with any political party or carrying on any business or pursuing any profession.



under Article 21. **The right to free legal service is clearly an essential ingredient of a 'just, fair, and reasonable' procedure** that can take away the life and liberty of a person accused of an offence.

- **Article 32:** If a State fails to fulfil its obligation to provide legal assistance to those who cannot afford it, which is the fundamental right, the aggrieved party can get it enforced under **Article 32 or Article 226 of the Constitution by approaching the apex court or the concerned High Court.**
- **Article 142:** It provides that in the exercise of its jurisdiction, the **Supreme Court** may pass such decree or make such order as is necessary for doing **complete justice** in any court or matter pending before it.

**Frivolous Lawsuit**

- A frivolous **lawsuit** is one that is **intentionally brought** by a lawyer who makes a case **even when there is no precedent, evidence, or validity to it.**
- In lieu of resolving a valid legal dispute, **it may be filed for covert purposes, such as harassing or coercing someone.**
- **Courts can dismiss** these cases early in the process and **may impose fines, sanctions, and other penalties** on the parties or attorneys who engage in such conduct.

**Right to Property**

**Why in News:** In a significant judgement emphasising the sanctity of property rights in a welfare state, the Supreme Court held that **a person cannot be deprived of their property without adequate compensation being paid in accordance with the law.**

**Status of Right to Property in India**

- Right to Property ceased to be a fundamental right by the Constitution (44th Amendment) Act, 1978.
- However, it continues to be a human right in a welfare state and a **constitutional right under Article 300A of the Constitution.**
- **Article 300A protects individuals from being dispossessed of their property without legal authority,** and thus "a person cannot be deprived of his property without him being paid adequate compensation in accordance with law for the same."
- **Tukaram Kana Joshi vs Maharashtra Industrial Development Corporation (2013) case:** Human rights are considered in the realm of individual rights, such as the right to health, the right to livelihood, the right to shelter, and the right to employment. The right to property is very much **part of** this dimension of **human rights.**

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQs**

Q1. Consider the following articles from the constitution of India:

- 1. Article 14
- 2. Article 32
- 3. Article 142

Which of the above-mentioned articles ensure(s) the Right to Justice?

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

Answer: (d)

Q2. In the context of Indian Polity, the Right to Property is a:

- (a) Fundamental Right
- (b) Constitutional Right
- (c) Economic Right
- (d) None

Answer: (b)

**LOKPAL**

**Why in News:** Lokpal of India celebrates 1st Foundation Day on 16th January.

**Key Details**

- The Foundation Day of the Lokpal of India was held for the first time on 16th January at Manekshaw Centre, New Delhi in the august presence of the Chief Justice of India, Shri Justice Sanjiv Khanna.
- It is this day, the Lokpal of India was established by virtue of coming into force of **Section 3 of the Lokpal and Lokayuktas Act, 2013,** on 16.01.2014.

**About the Lokpal**

- Lokpal is an **anti-corruption body or ombudsman,** responsible for looking into corruption complaints at the national level. The Lokpal movement in India was **spearheaded by activist Anna Hazare, with his Jan Lokpal movement in 2011.** The Lokpal and Lokayuktas Act was passed by the parliament in 2013.
- **History of Lokpal**
  - The term "Lokpal" was coined by Dr. L.M.Singhvi in 1963.
  - The concept of a constitutional ombudsman was first proposed in parliament by Law Minister Ashoke Kumar Sen in the early 1960s.
- **Members: Lokpal and Lokayuktas Act, 2013** predicates establishment of a high powered body called the Lokpal

of India, comprising of Chairperson, not exceeding eight Members (Four Judicial and Four Non-Judicial) who are appointed by the President of India after seeking recommendations from the Selection Committee constituted as per Section 4 of the Act.

- **Eligibility for members**
  - **For Chairperson:** A person who is or has been a Chief Justice of India or is or has been a Judge of the Supreme Court.
  - **For Judicial Member of Lokpal:** A person who is or has been a Judge of the Supreme Court or is or has been a Chief Justice of a High Court.
  - **For Non-Judicial Members:** A person of impeccable integrity and outstanding ability having special knowledge and expertise of not less than working twenty five years in subjects prescribed in Clause (b) of sub-section 3 of Section 3 of the Act.
- **Powers of Lokpal:** Lokpal, as a body, is bestowed with wide powers to direct inquiry investigation and to accord sanction to prosecute the public officials/functionaries referred to in Section 14 of the Act and other persons involved in commission of offence of corruption. Exhaustive 4 procedure in respect of preliminary inquiry and investigation has been predicated in Chapter VII of the Act.
- **Who can file a complaint against a public servant?**
  - According to the Lokpal (Complaint) Rules 2020, notified on 02.03.2020, a complaint can be filed by any:
    - ◆ Individual, Society, Association of Persons, Trust, Company, Limited Liability Partnership, Statutory Board, Body (Juristic Person), Corporation and Statutory Authority
- **Appointment of Chairperson and Members on recommendations of Selection Committee.**
  - The Chairperson and Members shall be appointed by the President after obtaining the recommendations of a Selection Committee consisting of the
    - ◆ Prime Minister—Chairperson;
    - ◆ The Speaker of the House of the People—Member;
    - ◆ The Leader of Opposition in the House of the People—Member;
    - ◆ The Chief Justice of India or a Judge of the Supreme Court nominated by him—Member;
    - ◆ One eminent jurist, as recommended by the Chairperson and Members to be nominated by the President.
- **Term of the Office:** The term of office for Lokpal Chairman and Members is 5 years or till the age of 70 years.
- **Coverage of Lokpal:** Jurisdiction of Lokpal includes Prime Minister, Ministers, members of Parliament, Groups A, B, C and D officers and officials of Central Government.

#### About Lokayukta

- **Role:** The Lokayukta is a state-level body in India that looks into complaints and allegations of corruption against public officials.
- **Appointment Process:** The Governor appoints the Lokayukta and the Upalokayukta, but not without consulting the Chief Justice of the State High Court and the Leader of the Opposition in the State Legislative Assembly to ensure fairness.
- **Tenure and Reappointment:** Usually, the Lokayukta serves for five years or until turning 65, whichever happens first. Once their term ends, they cannot be reappointed.
- **Removal from Office:** Importantly, the Lokayukta enjoys security of tenure—they can't be removed or transferred by the government. The only way to remove them is through an impeachment motion passed by the state legislature, which adds an extra layer of protection to their independence.

#### Challenges for Lokpal in India

- **Lack of Infrastructure**
  - Though offices have only formed in 19 states, most of them are defunct.
  - Kerala, Karnataka, and Uttar Pradesh are the only few states that have seen some success.
- **Lack of Agency**
  - The specifics of the appointment of the Lokayukta have been left entirely up to the states.
  - The need to be dependent on CBI limits the functional independence of Lokpal.
  - After seven years from the date on which the alleged offence is said to have occurred, a complaint against corruption cannot be filed.
- **Inadequate rules or regulations for proper functioning**
  - Despite the fact that the members of the Lokayukta and Lokpal have been in office for a year, the central government has yet to create norms for their proper operation, such as giving a complaint form.
  - As required by the Lokpal Act, the government has not established the Lokpal Inquiry & Corruption Wing or nominated its Directors.

#### Way Forward

- **Focus on functional autonomy:** The ombudsman's institution should be reinforced in terms of functional autonomy and manpower availability to combat corruption.
- **Citizen awareness:** Greater transparency, access to information, citizen and citizen group empowerment, as well as good leadership willing to be held accountable to the public, are all essential.
- **Separate institution:** Lokpal and Lokayukta must also be financially, administratively, and legally distinct from those they are tasked with investigating and prosecuting.
- **Transparency in Appointments:** Appointments to the

Lokpal and Lokayukta must be made in a transparent way to avoid appointing the incorrect persons.

- **Need for Decentralisation:** A range of decentralised institutions with suitable accountability mechanisms is required to avoid excessive concentrations of power in any one organisation or authority.

### Conclusion

- For the Lokpal and Lokayukta to function effectively, it is crucial to **ensure their financial, administrative, and legal independence**. Strengthening their autonomy, promoting transparent appointments, enhancing citizen participation, and decentralising power will help create a robust framework to combat corruption and build greater public trust in governance.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

Q. Discuss the challenges in functioning of Lokpal in India. Also, describe its composition and the procedure for the appointment of its members. [150 words] [10 marks]

## BHARATPOL

**Why in News:** The Union Home Minister inaugurated the BHARATPOL portal developed by the Central Bureau of Investigation (CBI).

### About BHARATPOL: Need and Significance

- **Need for Real-Time International Assistance:** The growing footprint of **transnational crimes** including cyber-crime, financial crimes, online radicalisation, organized crimes, drug trafficking, human trafficking etc, necessitates rapid and real-time international assistance in criminal investigations.
  - To address this challenge, **CBI has developed BHARATPOL Portal**, accessible through its official website, which will bring all the stakeholders on a common platform.
- **Significance and Function of the Portal**
  - The portal will significantly **facilitate Indian Law Enforcement Agencies** enabling real-time information sharing for faster access to international police assistance.
  - The BHARATPOL portal will **streamline the processing** of all requests for international assistance through INTERPOL, including the issuance of Red Notices and other colour-coded INTERPOL notices.
  - The BHARATPOL portal will become a **transformative tool** for field-level police officers, **enhancing their efficiency** in dealing with crimes and security challenges.

- By facilitating easier and faster access to international assistance, it will strengthen India's efforts in **combating transnational crimes**.

### Key Features of BHARATPOL

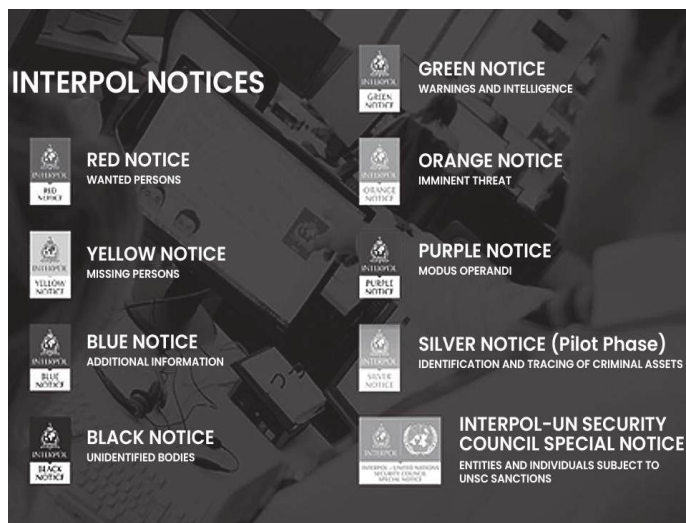
- **Unified Platform:** The portal integrates the CBI as the Interpol (NCB-New Delhi) with all law enforcement authorities in India, down to Superintendents of Police (SPs) and Commissioners of Police (CPs).
- **Simplified Request Mechanism:** The portal allows front-line police officers to easily and promptly request international assistance from 195 Interpol member countries using standardised templates.
- **Rapid Information Dissemination:** The portal enables the CBI as the NCB to rapidly share criminal intelligence and inputs from 195 countries with all law enforcement agencies in India.
- **Increase utilisation of Interpol notices:** The portal will enable easy drafting of Red Corner Notice requests and other colour coded notices of Interpol. This will lead to effective tracking of crime, criminals and proceeds of crime globally.
- **Capacity Building and Training:** The portal also provides access to relevant documents, templates, and training resources, enhancing the capability of frontline officers to conduct investigations abroad and seek foreign assistance effectively through Interpol.

### INTERPOL (International Criminal Police Organization)

- **History:** While INTERPOL was officially created in 1923, the idea was born at the first International Criminal Police Congress held in Monaco in April 1914.
- It is an **inter-governmental organization** having **196 member countries**, that help police to work together to make the world a safer place.
- **Composition of INTERPOL**
  - The General Secretariat coordinates the day-to-day activities to fight a range of crimes.
  - Run by the Secretary General, the General Secretariat is staffed by both police and civilians and comprises a **headquarters in Lyon**, a global complex for innovation in **Singapore** and several satellite offices in different regions.
  - In each country, an INTERPOL National Central Bureau (NCB) provides the central point of contact for the General Secretariat and other NCBs.

### INTERPOL Notices

- INTERPOL Notices are international requests for cooperation or alerts allowing police in member countries to share critical crime-related information.
- Notices are issued by the General Secretariat at the request of a member country's INTERPOL National Central Bureau and are made available for all our member countries to consult in our Notices database.



**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following INTERPOL Notices:

	Coloured Notice	Relates To
1.	Red Notice	Warnings and Intelligence
2.	Yellow Notice	Imminent Threat
3.	Black Notice	Modus Operandi

How many of the above pairs are correctly matched?

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

(p) Answer

# CCHAHAL ACADEMY

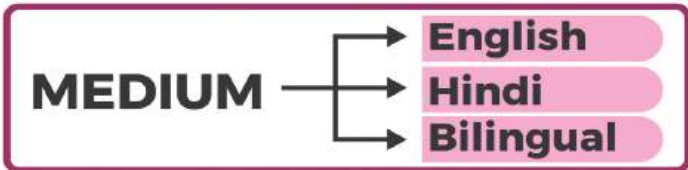
## UPSC-CSE

### 2026/27/28

**ADMISSION OPEN FOR**

**NCERT+GS+CSAT**

**Foundation Batches**



**OPTIONAL SUBJECTS** PSIR - SOCIOLOGY - HISTORY - ANTHROPOLOGY - GEOGRAPHY

Chahal Academy, 22-B, Upper Ground Floor, Near Karol Bagh, Metro Pillar No. 112, Old Rajinder Nagar, New Delhi- 110060

For more details contact us **9313218122, 9625993995**

**OUR BRANCHES**

NEW DELHI | AHMEDABAD | ANAND | BHUBANESWAR | CHANDIGARH | DEHRADUN | GANDHINAGAR | GUWAHATI | HYDERABAD | JAIPUR | KANPUR | KOLKATA | MUMBAI | NAGALAND | PATNA | RAIPUR | RAJKOT | RANCHI | SURAT | THANE | VADODARA

## INTERNATIONAL RELATIONS

**STRENGTHENING INDIA'S DIPLOMATIC FRAMEWORK**

**Why in News:** A recent article in *The Hindu* emphasized the urgent need for reforms in the Ministry of External Affairs (MEA).

**Key Details**

- India is becoming an influential global power due to its **strong economic growth, political stability, and independent foreign policy**. *Here are some examples of India's rising status:*
  - **G20 Presidency:** India successfully led the G20 summit.
  - **Russia-Ukraine Conflict:** India maintained a position of **strategic autonomy**, meaning it made decisions based on its own national interests, rather than aligning with one side.
  - **Vaccine Diplomacy during COVID-19:** India played a key role in distributing vaccines to other countries which shows its global leadership.
  - **Voice of the Global South:** India has been actively advocating for the concerns of developing countries (often called the **Global South**), representing their interests on international platforms.
- However, with this **increased global importance**, India needs to ensure that it has the **right structures and systems** in place to support its ambitions.
- Specifically, the **Ministry of External Affairs**, which handles India's foreign relations, must **evolve and improve** its **staffing, structure, and working methods** to handle the growing demands of this new era.
- Currently, there are **gaps** that need to be urgently addressed to ensure India can sustain and build on its rising global influence.

**Inadequate Manpower in the MEA**

- The MEA is **significantly understaffed**, with only about **850 Indian Foreign Service (IFS) officers** managing India's diplomatic missions across **193 embassies and consulates worldwide**.
- In comparison:
  - **U.S.:** 14,500 foreign service officers
  - **U.K.:** 4,600 officers
  - **Russia:** 4,500 officers

**Note:** Although India has increased its annual intake of IFS officers from 12-14 to 32-35, it is **still insufficient**. At this rate, it would take **decades** to reach the ideal workforce of **1,500 officers**.

**Possible Solutions**

- **Lateral Hiring:** Recruiting officers from other government services (like defence personnel with diplomatic experience and international relations experts).
- **Engaging Consultants:** Hiring specialists for specific areas, ensuring they are not just temporary appointments but integrated into policy-making.

**Need for Structural Reorganisation**

- The MEA's internal divisions are **fragmented**, leading to **inefficiencies and lack of coordination**.
- **Example: Neighbourhood Policy Management** is divided into four different divisions:
  - **PAI Division:** Handles **Pakistan, Afghanistan, and Iran**
  - **BM Division:** Manages **Bangladesh and Myanmar**
  - **Northern Division:** Covers **Nepal and Bhutan**
  - **IOR Division:** Looks after **Sri Lanka, Maldives, and other Indian Ocean countries**

**Problems with This Approach**

- This **segregation** makes it **difficult to coordinate policies effectively** for the entire region.
- **Iran and Türkiye** fall under **different divisions** that do not match their geopolitical relevance:
  - **Iran** is under the **PAI Division**, rather than the **West Asia Division**.
  - **Türkiye** is handled by the **Central Europe Division**, rather than a West Asia-focused division.

**Suggested Solution**

- **Restructuring and consolidating divisions** to create a **more streamlined and integrated approach** in dealing with key regions.

**Disparity Between Foreign and Domestic Postings**

- **IFS officers posted abroad** receive **better financial and administrative support**, whereas officers working in **Delhi** face **various challenges**:
  - **Housing issues:** While conditions have improved, there is still a **shortage of housing facilities** for officers.

- **Financial Disparity:** Officers in India receive **fewer financial benefits** compared to those serving abroad.

### Suggested Solutions

- **Better housing, medical coverage, and education facilities** for officers posted in India.
- **Financial incentives** for Delhi-based postings to boost morale.
- Recognizing that **key foreign policies are formulated in Delhi**, and making domestic postings **more attractive and rewarding**.

### Need for Specialization in Diplomacy

- The MEA lacks a **balance between generalist and specialist roles** among IFS officers.
- **Language training** is often underutilized:
  - IFS officers receive **rigorous training in one foreign language**, but they are often **not consistently posted in regions where this language is spoken**.
  - This results in a **waste of expertise** and increases reliance on **interpreters** during diplomatic negotiations.

### Suggested Solutions

- **Ensure at least one language-trained officer is present at every embassy** to reduce reliance on translators.
- **Encourage officers to specialize** in specific areas of diplomacy (e.g., **regional affairs, trade negotiations, defence cooperation**).

### Building Capacity in Emerging Technologies

- **Technology is playing an increasing role in foreign policy**, particularly in areas like:
  - Cybersecurity
  - Space policy
  - Artificial intelligence (AI)
- **Challenge:** Expecting IFS officers to master these **complex technical fields** along with their core diplomatic responsibilities is **unrealistic**.

### Suggested Solution

- **Recruiting and retaining domain specialists** who **focus exclusively** on these technical areas and advise the government on policies.

### MEA's Efforts to Evolve

Despite the various **challenges** faced by the Ministry of External Affairs (MEA), it has taken **proactive steps** to modernize and adapt to the changing global landscape. Some of the key improvements include:

### Establishment of New Divisions to Strengthen Policy-Making

- The MEA has set up **specialized divisions** to focus on emerging global trends and enhance policy effectiveness.

- **Two key additions are:**

- **Policy, Planning, and Research Division** – This division works on formulating **long-term foreign policy strategies** based on research and analysis of international trends.
- **Centre for Contemporary China Studies (CCCS)** – Given China's growing influence in geopolitics, this research center **closely monitors China's policies, economy, and strategic moves** to help India craft a well-informed response.

### Current Leadership in External Affairs

The role of the **current External Affairs Minister** has been **pivotal** in bringing **innovation, assertiveness, and strategic depth** to India's foreign policy.

- **Under the current leadership, the MEA has focused on:**
  - **Strengthening strategic autonomy** – India has maintained a **balanced approach** in international conflicts (e.g., **Russia-Ukraine war**) while safeguarding its national interests.
  - **Greater diplomatic outreach** – Active engagement with major powers and the Global South to expand India's influence.
  - **Foreign policy linked to India's development goals** – Emphasis has been placed on ensuring that India's diplomatic engagements contribute directly to its goal of becoming a 'Viksit Bharat' (Developed India) by 2047.

### Way Forward

As India moves towards **100 years of independence in 2047**, its foreign policy must evolve to match its **growing economic and geopolitical ambitions**.

- The MEA must continue adapting by:
  - Strengthening diplomatic infrastructure.
  - Enhancing manpower and specialization.
  - Deepening global partnerships that align with India's economic and security interests.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Descriptive Question

- Q. The Ministry of External Affairs (MEA) plays a pivotal role in shaping India's foreign policy and global engagement. Critically examine the need for reforms in the MEA to address emerging global challenges. [150 words] [10 marks]

## INDIA - KUWAIT RELATIONS

**Why in News:** PM Modi arrives in Kuwait on a 2-day visit. The visit aims to create a "**futuristic roadmap**" for enhancing partnerships in areas like trade, energy, and cultural exchange.

**Key Details**

- This landmark visit marks the first time an Indian Prime Minister has traveled to Kuwait in 43 years. The last Indian Prime Minister to visit the Gulf nation was **Indira Gandhi in 1981**.
- PM Modi highlighted that India and Kuwait are not just strong trade and energy partners but also have **shared interests in peace, security, stability, and prosperity** in the West Asia region.

**Recognition of PM Modi:**

- PM Modi was awarded **Kuwait's highest honour, "The Order of Mubarak Al Kabeer"**, a prestigious knighthood previously given to prominent global figures like **Bill Clinton, Prince Charles, and George Bush**.
- This is the **20th international honour conferred on PM Modi by different countries**.

**Areas of Cooperation between India and Kuwait**

**Historical Ties:**

- India and Kuwait have had strong ties for generations, dating back to the **pre-oil era** when **maritime trade (like trading pearls, spices, and textiles)** was central to Kuwait's economy.
- These relations have evolved into a strong partnership in modern times.

**Trade and Economic partner:**

- India and Kuwait share robust economic ties. Kuwait ranks as one of India's top trading partners, **with bilateral trade valued at USD 10.47 billion in the financial year 2023-24**.
- Kuwait is India's third largest trade partner in the Arab world and it accounted for **3.34% of India's global imports** in 2011.

**Energy Partner:**

- The Gulf nation is India's sixth-largest crude oil supplier, meeting 3 percent of its energy needs.

**Exports and Investment:**

- Indian exports to Kuwait have reached a record USD 2 billion, while investments by the **Kuwait Investment Authority** in India exceed **USD 10 billion**.

**Indian community in Kuwait:**

- The Indian community, which forms the **largest expatriate group** in Kuwait, plays a vital role in strengthening bilateral relations.
- With over one million Indians **making up 21 percent of Kuwait's population** and **30 percent of its workforce**, their contribution spans various sectors, including the private and domestic workforce.


**Defence Cooperation:**

- On 19 August 2023, Indian Navy's indigenously

built destroyer, **INS Visakhapatnam** docked at Al-Shuwaikh Port adding a new chapter to the bilateral navy-to-navy cooperation between India and Kuwait.

- In 2023, Indian navy conducted a **PASSEX** with Kuwait navy.

**PRELIMS SPECIAL**



**About Kuwait**

- **Location:** Kuwait is a country in West Asia and the geopolitical region known as the Middle East. It is situated in the northern edge of the Arabian Peninsula at the head of the Persian Gulf, bordering Iraq to the north and Saudi Arabia to the south.
- **Population:**
  - Kuwait has a population of 4.82 million, of which 1.53 million are Kuwaiti citizens while the remaining 3.29 million are foreign nationals from over 100 countries.
  - Kuwait has the third largest foreign-born population in the world.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Which of the following countries share a border with the Persian Gulf?

1. Iraq	2. Jordan
3. Kuwait	4. Syria
5. Iran	

Select the correct answer using the code given below:

(a) 1, 2 and 4	(b) 3 and 5 only
(c) 1, 3 and 5	(d) 1, 2 and 3

Answer: (c)

**INDIA-SINGAPORE RELATIONS**

**Why in News:** Recently, the **President of India** hosted the **President of Singapore** to commemorate the **60th anniversary of India-Singapore bilateral relations**.

## India-Singapore Relations:

### Historical

- From **ancient** times, Singapore and India have a long history dating back to the **Chola** era.
- During **British times**, the connection is credited to Sir Stamford Raffles, who founded a trading post at Singapore in 1819 near the Malacca Straits.
- Singapore later developed into a **British Indian colony under the administration of Calcutta (1830–1867)**.
- **Post-independence:** India and Singapore have had **diplomatic relations since 1965**, based on economic and political convergence.

### Economic

- Singapore is India's **8th largest trade partner** and **largest trade partner in ASEAN**.
  - **Bilateral trade** stood at **US\$ 35.61 billion in 2023-24**.
- **Singapore is the 2nd largest investor in India**, with a cumulative FDI inflow of **US\$ 159.94 billion** from April 2000 to March 2024.

### Defence

- The **ASEAN Defence Ministers' Meeting - Plus (ADMM+)** and **IORA** memberships of Singapore and India give them a platform to coordinate their stances on regional matters of shared interest.
- **Joint Military Exercises:** They regularly conduct joint military drills:
  - **Army:** "Bold Kurukshetra"
  - **Air Force:** Joint Military Training exercises
  - **Navy:** "SIMBEX" (an exercise between their navies)

### Cultural

- **Around 9.1%**, or roughly 3.5 lakhs, of Singapore's 3.9 million residents are **ethnic Indians**.
- Around 1.6 million foreign residents in Singapore, **around 3.5 lakh, or 21%, are Indian expatriates**.
- **One of Singapore's four official languages is Tamil**.
- India and Singapore **regularly exchange cultural events** such as performing arts, theatre, art, languages, and youth exchanges.

### Multilateral Cooperation

- **Shared Global Platforms:**
  - India and Singapore work together in several international groups, including:
    - ◆ East Asia Summit
    - ◆ G20
    - ◆ Commonwealth
    - ◆ Indian Ocean Rim Association (IORA)
    - ◆ Indian Ocean Naval Symposium (IONS)

- This multilateral involvement helps both countries coordinate on global and regional issues.

### Significance of Singapore for India

- **Foreign Investment:**
  - In the financial year 2023-24, Singapore invested about \$11.77 billion in India.
- **Strategic Location:**
  - Singapore's location acts as a bridge between India and other ASEAN nations, which is crucial for India's Act East Policy (a strategy to strengthen ties with Southeast Asia).
- **Maritime Trade Hub:**
  - Positioned on major global shipping routes, Singapore plays a key role in international maritime trade.
- **Business Link:**
  - Around 9,000 Indian companies are registered in Singapore, highlighting strong business connections.
- **Cultural Hub:**
  - The regular cultural exchanges help strengthen mutual understanding and people-to-people links.

### Conclusion

India and Singapore have developed a strong and diverse partnership, rooted in mutual respect and trust. This growing relationship spans various sectors, including trade, defense, digitalisation, healthcare, and sustainability, providing a solid foundation for continued collaboration and strengthening ties between the two nations.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

Q. Recently, the Unified Payments Interface (UPI) of India and the PayNow platform of which of the following countries was connected to facilitate speedier remittances between the two nations?

- (a) Singapore                      (b) Malaysia  
(c) UAE                                (d) None

(a) Answer

#### Descriptive Question

Q. Discuss the key areas of cooperation between India and Singapore and suggest measures to further enhance bilateral ties. [15 Marks, 250 Words]

### INDIANS AND THE H-1B VISA

**Why in News:** Weeks before Donald Trump returns as US president, his supporters are locked in a public row about skilled immigration and H-1B visas.

## More about the Issue

The issue started after Trump appointed Sriram Krishnan, an Indian-born tech expert, as his top adviser on artificial intelligence (AI). In November, Krishnan posted on social media, calling for making skilled immigration easier, which upset many of Trump's loyal supporters, who are strongly against immigration.

### Skilled Immigration

It refers to the process where people move to a new country to work in jobs that require special skills, education, or expertise. These jobs might include roles in fields like technology, medicine, engineering, or finance. Skilled immigrants are typically given visas or work permits based on their qualifications and the demand for their skills in the destination country.

## What is the H-1B Visa Program?

- The H-1B visa is a special visa that allows U.S. employers to hire foreign workers for jobs that require a high level of skill and at least a bachelor's degree.
- This is typically for jobs in fields like technology, engineering, medicine, and other specialized areas.

## Purpose of the Program

- The H-1B visa was created in 1990 with the goal of helping U.S. employers fill job positions that require specific skills that are not readily available in the U.S. workforce.
- In other words, the program allows employers to hire skilled foreign workers when they cannot find qualified workers within the U.S. for particular jobs.

## Visa Duration and Renewal

- The H-1B visa is granted for a maximum period of six years.
- After six years, the worker must either:
  - Leave the U.S. for at least 12 months before returning, or
  - Apply for permanent residency (a "Green Card") to stay in the U.S. permanently.

## Annual Visa Limit (Cap)

- There is a limit on how many new H-1B visas can be issued each year. This is known as the "regular cap."
- The regular cap is set at 65,000 new visas each fiscal year (from October to September).
- In addition to this, there are another 20,000 visas available for individuals who have a master's degree or higher from a U.S. university.

## Exemptions and Over Cap Petitions

- Not all H-1B visa applications are subject to this annual limit or cap.
- If someone is already in the U.S. on an H-1B visa and they apply for a new job, their petition does not count toward the cap. These are called "continuing employment" petitions.

- **For example**, in fiscal year 2023, the U.S. Citizenship and Immigration Services (USCIS) approved 118,948 new H-1B petitions (initial employment), but 267,370 petitions for workers continuing in their jobs (renewals) were also approved.

## Exemptions for Certain Employers

- Some employers are not subject to the visa cap. These include:
  - **Higher education institutions** (like universities),
  - **Nonprofit organizations affiliated with universities**,
  - **Nonprofit research organizations**,
  - **Government research organizations**.
- If the employer falls into one of these categories, they can apply for H-1B visas without worrying about the annual cap.

### Important Data to Remember:

- **Largest beneficiaries H-1B Visa** - Data from the US government show that Indians account for **more than 70% of all H-1B petitions approved each year since 2015**.
- People born in **China come a distant second**, hovering at the 12-13% mark since 2018.

## Benefits of H-1B visa

- **Guaranteed prevailing wages:** H-1B visa holders are guaranteed a certain wage **based on their experience level, education, job, and area in the US**.
- **Flexibility to change jobs:** H-1B holders can switch sponsoring employers relatively easily by asking the new employer to file an H-1B Change of Employer petition on their behalf.
- **Dual intent status:** The H-1B is a dual intent visa, which means **visa holders can apply for a green card while on a temporary visa**. This provides a clear pathway to permanent residence if that is the long-term goal.
- **Benefits for H-1B visa holders' spouses:** Spouses **can attend a college or university without additional authorization needed also**. Spouses can apply for work authorization using Form I-765.
- **Benefits for H-1B visa holders' children:** Children who are unmarried and under 21 years old can attend schools without a student visa.

## Criticism of the H-1B Program

- Critics argue that the H-1B program, which was intended to bring the best talent from around the world to the U.S., is being misused by tech companies.
- They believe tech companies are hiring foreign workers (especially through the H-1B visa) for lower-paying positions, often at wages much lower than what American workers would expect for the same jobs.
- For example, Elon Musk, who supports the H-1B visa program, argues that there is a shortage of skilled engineering talent in the U.S. However, critics argue that

the problem isn't a lack of talent but that U.S. companies find it too expensive to hire Americans, so they prefer to hire cheaper foreign workers.

**Conclusion:** Despite these criticisms, some industry experts argue that the H-1B visa program is crucial for filling the skills gap in the U.S. The global competition for skilled workers, especially in STEM fields (Science, Technology, Engineering, and Mathematics), is intense. Both China and India produce a large number of STEM graduates every year.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding the H-1B visa programme:

1. The H-1B visa can be issued for a maximum of 6 years at a stretch.
2. Indians are the 2nd largest beneficiary of H-1B visas after China.
3. H-1B visa holders cannot apply for permanent residence.

Which of the statements given above is/are correct?

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

Answer: (a)

**CHINA APPROVES WORLD'S LARGEST DAM ON BRAHMAPUTRA RIVER**

**Why in News:** Recently, China defended its plan to build the world's largest dam on the Brahmaputra River in Tibet, saying the project will not "negatively affect" lower riparian states and that safety issues have been addressed through decades of studies.

**Key Details**

- China approved the construction of the world's largest dam, stated to be the planet's biggest infra project, on the Brahmaputra River in Tibet close to the Indian border, **raising concerns in India and Bangladesh.**
- The project estimated to cost around **\$137 billion** is located in the ecologically fragile Himalayan region, along a tectonic plate boundary where earthquakes occur frequently.
- The **hydropower project** will be built in the lower reaches of the Yarlung Zangbo River, the Tibetan name for the Brahmaputra.
- The dam will be built at a huge gorge in the Himalayan reaches where the Brahmaputra River makes a huge

U-turn to flow into Arunachal Pradesh and then to Bangladesh.

- The dam project aims to speed up the **development of clean energy** and respond to climate change and extreme hydrological disasters.

**What are the specific concerns for India?**

- **Impact on Water Flow from China to India:** The dam could **impact the flow of water from China to India** because the bulk of water in the Brahmaputra system comes from Tibet.
- **Impact on Agricultural Productivity:** The **flow of silt, crucial for agriculture, can get interrupted**, thus affecting the productivity of agriculture in low riparian states.
- **Impact on Local Biodiversity:** Changes in river flow can **impact the local biodiversity of existing river channels**, which could result in habitat loss, **reduced environmental flow**, and migration difficulties for species.
- **Ecological Fragility and Earthquake Risk:** This region is among the world's most **ecologically fragile and earthquake-prone**, thus during a disaster, it can lead to the release of a large volume of water downwards.

**Coordination Mechanism between India and China on Trans-boundary River**

- Memorandum of Understanding upon provision of Hydrological Information of the River Brahmaputra/ Yaluzangbu
  - In accordance with the provisions contained in the MoU, the **Chinese side is providing hydrological information (water Level, discharge, and rainfall) to Indian authorities on a regular basis** during monsoon season (15th May to 15th October every year).
- Memorandum of Understanding on Hydrological Data Sharing on River Sutlej / Langqen Zangbo
  - Under this MoU, the Chinese side provides **hydrological information** of Tsada station located on River Sutlej/Langqen Zangbo.
  - The MoU is now under process of renewal through diplomatic channels.
- Umbrella Memorandum of Understanding (MoU)
  - Memorandum of Understanding on **Strengthening Cooperation on Trans-Border Rivers** signed in October 2013.
  - The duration of provision of hydrological information of three hydrological stations was enhanced from 1st June-15th October to 15th May-15th October.
  - This umbrella MoU of 2013 further opens up other areas of cooperation in the water sector and **has no expiry period.**
- Expert Level Mechanism (ELM)
  - An expert-level mechanism was set up **to discuss interaction and cooperation on the provision of flood**

season hydrological data, emergency management, and other issues regarding trans-border rivers.

- The ELM meetings are held alternately in India and China every year.

**PRELIMS SPECIAL**

**Brahmaputra River**

- The Brahmaputra River is a transboundary river in Asia, flowing through the **Tibet Autonomous Region of China, India, and Bangladesh.**
- **Origin - Chemayungdung glacier near Manasarovar Lake near Mount Kailash in Tibet.**
- In **Tibet** it is known as **Yarlung Tsangpo.**
- It **enters India through Arunachal Pradesh as the Dihang River** after carving out a deep gorge near **Namcha Barwa.**
- Flowing through Assam, the river receives many tributaries along its journey and **enters Bangladesh as Jamuna.**
- It **merges with the Ganges and becomes the Meghna** and finally drains into the Bay of Bengal.
- With a length of 3969 km The Brahmaputra is **the 6th longest in Asia**, with a catchment area of 580,000 sq. km.
- In Assam there is a riverine island formed by the Brahmaputra known as **Majuli**, and it is regarded as the largest riverine island in the world.

**Conclusion:** China’s plan to build the **world’s largest dam on the Brahmaputra River** has raised concerns for India and Bangladesh, particularly regarding water control, potential flooding, and ecological impacts. While China has assured its neighbors about safety and **environmental precautions**, **the project remains a contentious issue** due to its location in a seismically active region and its potential geopolitical implications. Both countries are in talks to ensure cooperation on trans-border river management.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding Brahmaputra River:

1. It passes through 4 countries.
2. It enters India through Arunachal Pradesh.
3. Brahmaputra river hosts world’s largest riverine island.

How many statements given above is/are correct?

- (a) One only                      (b) Two only
- (c) All Three                      (d) None

Answer: (b) 2&3 only

**Description Question**

Q. Critically discuss the implications of China’s proposed mega dam on the Brahmaputra for India’s water security and national interests, and also suggest suitable countermeasures. [150 words] [10 marks]

**EXTRADITION DEMAND BY BANGLADESH: LEGAL CHALLENGES AND INTERNATIONAL PERSPECTIVES**

**Why in News:** Bangladesh officially asked India to extradite Sheikh Hasina back to Bangladesh for legal proceedings. This request was made through a **formal diplomatic note called a “note verbale”** to India’s Ministry of External Affairs. **So far, the Indian government has not publicly responded to this request.**

**Key Details**

- Sheikh Hasina fled to New Delhi in August 2024 to seek refuge during massive protests against her government in Bangladesh.
- She was declared a fugitive for not appearing before the authorities after leaving Dhaka on August 5, 2024.
- On August 13, 2024, a First Information Report (FIR) was filed against her and others.
- She is accused of planning to suppress student protests, which allegedly led to the mistreatment and killing of many protesters. These actions are being called crimes against humanity and genocide.
- The Bangladesh authorities are working to collect solid evidence to build a strong legal case against Sheikh Hasina. They aim to ensure the prosecution has credible information to secure a conviction.
- On October 17, 2024, Bangladesh’s International Crimes Tribunal issued arrest warrants for Sheikh Hasina and 45 others, including former ministers and officials. **On November 18, 2024, the Tribunal gave investigators until December 17, 2024, to complete their investigations and prepare a charge sheet for the court.**

**Trial Process**

- In common law systems (e.g., India, UK), a trial cannot start without the accused being present in court. For a trial to begin, the accused must either appear physically or virtually. However, some jurisdictions allow a lawyer’s presence to count as the accused’s “constructive presence,” but this idea is controversial in common law countries.
- According to Section 339 B of Bangladesh’s Code of Criminal Procedure (1898), a trial can legally proceed even if the accused is not physically present.
  - **Example of Similar Precedent:** The International

Criminal Court (ICC) recently allowed such a trial. On October 29, 2024, ICC held a hearing against Joseph Kony, accused of severe crimes in Uganda, despite him being absent and in hiding for 19 years.

- The alleged crimes occurred in Bangladesh. The victims, witnesses, and evidence are in Bangladesh which makes it an apt and logical location for the trial.

#### ICC's Jurisdiction

- Bangladesh is a party to the Rome Statute of the International Criminal Court (ICC), which governs the ICC's operations.
- Crimes against humanity fall under the ICC's jurisdiction as per Articles 5, 11, and 12 of the Rome Statute. The ICC jurisdiction is based on four criteria:
  - **Material jurisdiction:** The alleged acts qualify as crimes against humanity due to their gravity.
  - **Personal jurisdiction:** The accused (Ms. Hasina) is a citizen of Bangladesh, a state party to the Rome Statute.
  - **Territorial jurisdiction:** The crimes occurred within Bangladesh's territory.
  - **Temporal jurisdiction:** The crimes happened after 2002, when the Rome Statute came into force.

#### Principle of Complementarity

- The ICC acts as a court of last resort. It intervenes only when a country is unwilling or unable to handle cases domestically.
- Since Bangladesh has already initiated Ms. Hasina's trial at the domestic level, the ICC currently has no reason to step in.

#### Intervention by ICC

Article 53, read with Article 17 of the Rome Statute, states that the ICC can intervene if:

- The accused's rights are in danger.
- The domestic trial is not independent or impartial.
- The trial appears designed to punish the accused rather than deliver justice.

#### Customary International Law and India's Position

- **Principle of Aut Dedere Aut Judicare:** This is a principle of international law that means a country must either prosecute or extradite a person accused of serious crimes like genocide, war crimes, or crimes against humanity. Bangladesh argues this principle applies to India regarding Sheikh Hasina.
- **India's Legal Obligation:** India is not bound to extradite Sheikh Hasina to Bangladesh. While the principle is a recognized norm in international law, it does not create a mandatory obligation for India to comply.
- India signed a bilateral extradition treaty with Bangladesh in 2013 and operates under the Indian Extradition Act, 1962, which provides a legal framework for extradition of nationals and non-nationals.

#### India's Potential Defenses Against Extradition

- **Political offenses:** India can argue that the crimes Sheikh

Hasina is accused of are political offenses, which is a valid reason to deny extradition. However, this argument is weak. Her alleged acts, like state-sponsored violence, torture, and other crimes against humanity, are not considered political offenses under international law. **Human rights organizations like Amnesty International and Human Rights Watch have reported serious violations under her regime that makes the political offense argument less convincing.**

- **Rule of non-inquiry:** Under traditional common law, extradition decisions are left to the government (executive), and courts do not interfere. However, this rule is less accepted now, and Indian courts may intervene if there are valid concerns. Given Bangladesh's past record of prison torture and poor conditions, Indian courts may refuse to extradite her to ensure her safety and fair treatment.
- **Constitutional Protections for Sheikh Hasina in India:** Even though Sheikh Hasina is not an Indian citizen, she is still protected under Articles 20 and 21 of the Indian Constitution. Article 21 ensures the right to life and liberty for all persons, including non-citizens.
  - **The Supreme Court of India, in the 1996 case of *National Human Rights Commission vs State of Arunachal Pradesh*, ruled that even non-citizens are entitled to these protections.**

#### Proposed Resolution

- **In-House Arrest and Remote Trial:** India can propose an in-house arrest arrangement, allowing Ms. Hasina to participate in her trial via video conferencing, with a lawyer of her choice physically present in the Bangladesh court. **India can assure Bangladesh of full cooperation in investigation and evidence gathering.**
- **Sentencing Agreement and Human Rights Compliance:** If convicted, Ms. Hasina could serve her sentence in India under a sentencing agreement. This arrangement aligns with **Article 2(4) of the UN Charter**, demonstrating India's commitment to a fair and peaceful resolution.
- **Collaborative Approach:** Ensuring a collaborative framework for the trial would avoid emotional or polemical arguments that could damage India-Bangladesh relations. This method showcases a progressive model of cooperation for the international community, balancing the interests of justice with the rights of the accused.
- **Alternative Solution:** Bangladesh, under Article 14 of the Rome Statute, can refer the case to the International Criminal Court (ICC) for trial. Alternatively, the ICC's prosecutor can initiate a proprio motu (self-initiated) examination under Article 15. Ms. Hasina can surrender to the ICC, ensuring that she won't face extradition to Bangladesh.

#### Conclusion

Considering Ms. Hasina's age and health, extraneous treatment or extradition to potentially harsh conditions in

Bangladesh would be unjustifiable. A balanced resolution would uphold her human rights and prevent any perception of vengeance. This approach reflects India's bona fide intent, safeguards bilateral ties with Bangladesh, and reinforces India's image as a responsible international actor committed to fair trial standards.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

Q. Extradition law between countries is influenced by which of the following international principles?

- (a) Universal jurisdiction
- (b) Principle of reciprocity
- (c) Principle of non-intervention
- (d) Principle of territorial waters

Answer: (b)

#### Descriptive Question

Q. The recent extradition demand by Bangladesh for individuals accused of various crimes has raised significant legal and diplomatic challenges. What measures can be taken to streamline the extradition process while respecting human rights and sovereignty? [250 words] [15 marks]

## PROGRAMME OF ACTION FOR LANDLOCKED DEVELOPING COUNTRIES (LLDC)

**Why in News:** In its seventy-ninth session the United Nations General Assembly adopted a 10-year action programme to address the unique challenges faced by landlocked developing countries.

### Programme of Action for Landlocked Developing Countries (LLDC)

- UNGA adopted the draft resolution titled Programme of Action for Landlocked Developing Countries for the Decade **2024–2034**.
- The Assembly called upon all relevant stakeholders to commit to implementing the instrument, which outlines a series of commitments for action across five priority areas.

#### Priority Areas under the Programme of Action (PoA)

- **Structural Transformation and Innovation:** A key objective of the Programme of Action is to expand economic horizons in Landlocked Developing Countries (LLDCs) by promoting deeper industrialisation, more productive agricultural practices, and value addition to exports.

- **Trade, Trade Facilitation, and Regional Integration:** Another critical component of the Programme of Action is guaranteeing efficient and cost-effective transit to and from the sea.
- **Transit, Transport, and Connectivity:** Given the challenges that arise from being landlocked, the PoA places special focus on building resilient infrastructure networks.
- **Enhancing Adaptive Capacity and Resilience:** Adapting to climate change and tackling disasters effectively form core dimensions of the Programme of Action. The PoA also emphasizes the availability and accessibility of adaptation finance, advocating for more predictable and scalable resources to strengthen resilience.
- **Means of Implementation:** To ensure that the aspirations translate into tangible outcomes, the PoA provides a strategic framework for resource mobilization. Strengthening domestic taxation systems, curbing illicit financial flows, and building robust financial markets enable LLDCs to increase their own investments in critical sectors.

### Vienna Programme of Action (2014 - 2024)

- The Vienna Programme of Action (VPoA) was a ten-year plan adopted by the United Nations in 2014 to promote the sustainable development of Landlocked Developing Countries (LLDCs).
- The VPoA aimed to address the unique challenges faced by LLDCs, such as **high transportation costs, limited access to global markets, and the need for infrastructure development**.
- The VPoA recognized that improving connectivity and access to regional and global markets is essential for the economic growth and development of LLDCs.
- **6 Priority Areas**
  - **Priority 1:** Fundamental transit policy issues
  - **Priority 2:** Infrastructure development and maintenance
    - ◆ Transport infrastructure
    - ◆ Energy and information and communications technology infrastructure
  - **Priority 3:** International trade and trade facilitation
    - ◆ International trade
    - ◆ Trade facilitation
  - **Priority 4:** Regional integration and cooperation
  - **Priority 5:** Structural economic transformation
  - **Priority 6:** Means of implementation

### Landlocked Developing Countries (LLDC)

- **List of Countries:** Afghanistan, Armenia, Azerbaijan, Bhutan, Plurinational State of Bolivia, Botswana, Burkina Faso, Burundi, Central African Republic, Chad, Eswatini, Ethiopia, Kazakhstan, Kyrgyzstan, Lao PDR, Lesotho, Malawi, Mali, Mongolia, Nepal, Niger, North Macedonia, Paraguay, Republic of Moldova, Rwanda, South Sudan,

Tajikistan, Turkmenistan, Uganda, Uzbekistan, Zambia, and Zimbabwe.

- **Challenges faced by LLDCs**
  - **Lack of access to the sea:** The average distance to the nearest seaport for the LLDCs is 1,370 km. They are dependent on their transit neighbours' infrastructure and administrative procedures for the transportation of their exports and their imports.
  - **Increased cost of trade:** LLDCs face almost double the trade costs of coastal Countries.
  - **Infrastructure gaps in transport:** This leads to delays in the movement of goods.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following countries:

- |                |             |
|----------------|-------------|
| 1. Afghanistan | 2. Bolivia  |
| 3. Peru        | 4. Zimbabwe |

How many of the above are landlocked countries?

- |                |              |
|----------------|--------------|
| (a) Only one   | (b) Only two |
| (c) Only three | (d) All four |

Answer: (c) (1, 2 and 4 only)

**UNITED NATIONS CONVENTION AGAINST CYBERCRIME**

**Why in News:** The United Nations General Assembly adopted the United Nations Convention against Cybercrime, a landmark global treaty aimed at strengthening international cooperation to combat cybercrime and protecting societies from digital threats.

**About the Convention**

- **First comprehensive global treaty:** The Convention is the **first comprehensive global treaty on this matter**, which provides States with a range of measures to be undertaken to prevent and combat cybercrime.
- **Strengthening International Cooperation:** It involves Strengthening International Cooperation for Combating Certain Crimes Committed by Means of Information and Communications Technology Systems and for the Sharing of Evidence in Electronic Form of Serious Crimes.
- **Principles of Cooperation:** The **convention outlines general principles of cooperation and identifies key areas for collaboration** in investigations, prosecution and judicial proceedings.
  - This includes a range of law enforcement activities, including the freezing, seizing, confiscating and

returning proceeds of crimes, as well as actions related to collecting and sharing electronic evidence.

- The convention also **maintains a fine balance** between enhancing international cooperation while recognising the sanctity of the national sovereignty principle.
- **Criminalisation of ICT-related offences:** The **convention classifies the selling, buying and possessing of material related to child sexual abuse** as criminal offences. Expanding its scope, it also recognises the production, offering, selling, distribution and possession of such material through the use of ICTs as criminal activities.
- **Contains Nine Chapters:** The Convention's **nine chapters** provide a comprehensive approach to prevent and combat the global problem of cybercrime while including human rights safeguards.
- **Addressing Technical and Legal Challenges:** The **Convention resolves technical and legal challenges** by adjusting traditional means and methods of criminal investigations to the information and communication technology environment and by strengthening international cooperation.

**Conclusion**

The adoption of the UN Convention against Cybercrime is a welcome step that illustrates the willingness of states to address the rising threat in digital space collectively. The participation of multiple stakeholders in the negotiation towards a draft is also suggestive of how decision-making to address the threats could not be limited to states.

**UKRAINE STOPS RUSSIAN GAS TRANSIT TO EUROPE**

**Why in News:** Ukraine has stopped allowing Russian natural gas to pass through its pipelines to Europe after a transit agreement expired at the end of 2024.

**Key Details**

- **This decision is part of Ukraine's national security measures amid ongoing conflict with Russia.**
- Before this halt, even during the conflict, Russian gas was transported through Ukraine to European countries under a **five-year deal**. This arrangement provided revenue for both Russia and Ukraine.
  - With the agreement's expiration, Ukraine chose not to renew it, aiming to reduce Russia's financial gains from gas exports.
- European nations have been decreasing their reliance on Russian energy, especially after the 2022 invasion of Ukraine. They've sought alternative energy sources, including liquefied natural gas (LNG) from countries like **Norway and the United States. This diversification has lessened the immediate impact of Ukraine's decision on European energy supplies.**

- However, regions like **Transnistria in Moldova**, which depended on Russian gas through Ukraine, may face energy shortages due to this transit halt. European energy markets might experience price fluctuations, but significant disruptions are not anticipated because of the prior diversification efforts.



How many of the countries given above is/are assisted by India's BHISHM Cubes?

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

Answer: (c)

## ACUTE MALNUTRITION IN CHILDREN IN SUDAN

**Why in News:** The United Nations Children's Fund (UNICEF) has estimated that **3.2 million children under the age of five** in Sudan will face **acute malnutrition** this year. This is a result of ongoing conflict and the dire conditions in the country.

### Severe Acute Malnutrition (SAM) Cases

- Of the 3.2 million children, approximately **772,000 children are expected to suffer from severe acute malnutrition (SAM)**, a life-threatening condition that can lead to death if untreated.
  - SAM typically involves extreme weight loss, weakness, and a higher susceptibility to infections.

### Famine in Sudan

- Famine has already taken hold in **five areas** across Sudan, as reported by the **Integrated Food Security Phase Classification (IPC)**, a UN-backed initiative (*Note: Famine is the most severe level of food insecurity, marked by a combination of extreme hunger and widespread malnutrition*).
  - The IPC report highlights the devastating impact of the ongoing conflict on food systems, leading to the breakdown of food access, distribution, and availability.

### Ongoing Conflict and Its Effects

- Sudan has been embroiled in **20 months of violent conflict** between the **Sudanese Army** and the **Rapid Support Forces (RSF)**, a paramilitary group.
- The war has led to widespread devastation, causing extensive loss of life and mass displacement.
- The fighting has **killed tens of thousands** of people, and the **humanitarian situation has worsened drastically** as a result of this prolonged conflict.

### Mass Displacement and Humanitarian Crisis

- The conflict has resulted in the displacement of **12 million people**, making this the **world's largest displacement crisis**. These individuals have fled their homes seeking safety and basic necessities.
- This displacement has put enormous pressure on the already weak infrastructure, leaving millions without adequate shelter, food, and healthcare.

### India's Assistance to Ukraine

- India provided **10 BHISHM Cubes** to Ukraine during Prime Minister Modi's visit (August, 2024). These cubes weigh **22 tonnes** and include **10 generator sets**.
- **BHISHM Cubes:**
  - These are mobile medical units designed to provide critical care in emergencies or disasters. They are also called **Aarogya Maitri Cubes**. Each cube is a self-contained medical facility that can handle critical trauma care and treat **100 survivors for up to 48 hours**.
  - **Indigenously Developed:** Created under **Project BHISHM** and **Project Aarogya Maitri**, initiated by the Ministry of Defence in 2022.
  - **Components:**
    - ◆ Fully equipped operation theatre
    - ◆ Mini-ICUs and ventilators
    - ◆ X-ray machine and blood-testing equipment
    - ◆ Cooking station
    - ◆ Power generator and shelter facility
  - **Modular Design:**
    - ◆ The equipment is packed in mini-cubes.
    - ◆ A combination of these mini-cubes is used to set up a mobile hospital.
    - ◆ The mini-cubes are transported in a "Cube Cage," which holds 36 mini-cubes.

**Note:** India has also gifted these units to **Sri Lanka** and **Myanmar**.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following countries:

1. Ukraine
2. Sri Lanka
3. Myanmar

## Suspension of Medical Activities

- The medical charity **Doctors Without Borders (MSF)**, which has been providing essential healthcare services in Sudan, has **suspended activities at a key hospital** in the capital due to **violent attacks**. These attacks, which have targeted medical facilities and staff, have forced MSF to halt operations in the area.
  - This suspension of medical services significantly hampers the ability to provide care to the war-torn population, further exacerbating the humanitarian crisis, especially for the injured and those suffering from malnutrition.

### Key facts about UNICEF

**Founded:** December 11, 1946 by the United Nations.

**Initial Purpose:** UNICEF was established to provide emergency food and healthcare to children in countries devastated by World War II. Over time, its mission expanded to focus on improving children's welfare globally.

**Original Name:** United Nations International Children's Emergency Fund, later shortened to UNICEF.

**Headquarters:** UNICEF's headquarters is in New York City, USA.

**Field Offices:** UNICEF operates in more than **190 countries and territories** worldwide, with a presence in some of the most remote and vulnerable regions of the world.

### Governance and Structure:

- UNICEF is governed by the **UN Economic and Social Council** and is one of the **UN's specialized agencies**. It is funded through voluntary contributions from governments, individuals, and corporate donors.
- **Executive Director:** UNICEF is led by an **Executive Director**, appointed by the UN Secretary-General.
- **UNICEF's Executive Board:** Consists of 36 members, elected by the UN Economic and Social Council for three-year terms.

### Funding:

- UNICEF's work is primarily funded through **voluntary contributions** from governments, individuals, foundations, and corporations.
- It receives funding from both **public** (governments) and **private sources**, ensuring a broad base of support for its programs.

### Advocacy and Campaigns:

- UNICEF is actively involved in **advocating for children's rights** on the global stage, often participating in major international forums such as the **UN General Assembly** and the **World Health Assembly**.
- It runs several campaigns like **#EndViolence**, **#EveryChildAlive**, and **#ForEveryChild** to raise awareness and generate support for children's issues.

### Recognition:

- **Nobel Peace Prize:** UNICEF was awarded the **Nobel Peace Prize** in **1965** for its work in improving children's lives worldwide.
- **Princeton Global Network:** UNICEF is recognized as one of the leading organizations for humanitarian and child welfare globally.

## Conclusion

The situation in Sudan is dire, with millions of children facing malnutrition, widespread famine, and limited access to healthcare due to the ongoing conflict. International organizations like UNICEF and MSF are working to address the crisis, but the continued violence and instability hinder their efforts. The situation remains a major humanitarian emergency that requires immediate and sustained international attention and intervention.

## EXPECTED QUESTION FOR UPSC CSE

### Prelims MCQ

Q. Consider the following statements regarding the Severe Acute Malnutrition (SAM):

1. It is a critical form of undernutrition affecting children under five years of age.
2. There is no case of Severe Acute Malnutrition (SAM) in Africa.

Which of the statements given above is/are correct?

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

Answer: (a)

## REVAMPING INDIAN AGRICULTURE

**Why in News:** This article highlights several issues related to Indian agriculture and presents suggestions for the upcoming Union Budget for 2025-26.

### Status of Agriculture Sector in India

- **Employment:** According to the **Economic Survey 2023-24**, the agriculture sector provides livelihood support to about 42.3% of the population.
- **Share in GDP:** Agriculture has a share of 18.2% in the country's GDP at current prices.
  - The sector has been buoyant, which is evident from the fact that it has registered an average annual growth rate of 4.18% at constant prices over the last five years and as per provisional estimates for 2023-24, the growth rate of the agriculture sector stood at 1.4%.
- Economic Survey states that the Investment in agriculture research and support of enabling policies have contributed substantially to **food security**.
- It is estimated that for every rupee invested in agricultural research (including education), there is a payoff of ₹13.85. In 2022-23, ₹19.65 Thousand Crore was spent on agriculture research.
- **Production and Output**
  - Economic Survey says that in 2022-23, foodgrain production hit an all-time high of 329.7 million tonnes, and oilseeds production reached 41.4 million tonnes.
  - **In 2023-24, food grain production is slightly lower at 328.8 million tonnes, primarily because of poor and delayed monsoons.**
  - The domestic availability of edible oil has risen from 86.30 lakh tonnes in 2015-16 to 121.33 lakh tonnes in 2023-24.
  - The total area coverage of all oilseeds has increased from 25.60 million hectares in 2014-15 to 30.08 million hectares in 2023-24 (17.5% growth).
  - This has reduced the percentage share of imported edible oil, from 63.2% in 2015-16 to 57.3% in 2022-23, despite rising domestic demand and consumption patterns.
- **Agri Marketing:** As of 14th March 2024, more than 1.77 Crore farmers and 2.56 Lakh traders have been registered on the e-NAM portal.
- **Farmers Producer Organisation (FPO):** As of 29 February 2024, 8,195 FPOs have registered under the new FPO scheme, and equity grants of ₹157.4 crore were released to 3,325 FPOs. Credit guarantee cover worth ₹278.2 crore was issued to 1,185 FPOs.
- **Social Security:** As of 07 July 2024, 23.41 lakh farmers have enrolled under the Pradhan Mantri Kisan Maandhan Yojna (PMKMY).
- **Insurance:** The overall insured area in 2023-24 reached 610 lakh ha compared to 500.2 lakh ha in 2022-23 under the Pradhan Mantri Fasal Bima Yojana (PMFBY). A total of 5549.40 Lakh farmer applications were insured under the scheme since 2016-17, and ₹150589.10 Crore has been paid as claims.
- **Allied Sector**
  - **Livestock Sector:** From 2014-15 to 2022-23, the livestock sector grew at an impressive Compound Annual Growth Rate (CAGR) of 7.38% at constant prices. The contribution of livestock to the total GVA (at constant prices) in agriculture and allied sectors increased from 24.32% in 2014-15 to 30.38% in 2022-23.
  - **Fisheries Sector:** The fisheries sector, a crucial contributor to the Indian economy, makes up **about 6.72% of the agricultural GVA** and has grown at a compound annual rate of **8.9% between 2014-15 and 2022-23 (at constant prices)**.

### Factors Affecting Agricultural Productivity in India

- **Increase in Small Land Holdings:** Marginal and small land holdings face a number of issues, such as problems with using mechanisation and irrigation techniques.
- **Access to Agricultural Credit and Insurance:** Access to agricultural credit is linked to the holding of land titles. As a result, small and marginal farmers, who account for more than half of the total land holdings, and may not hold formal land titles, are unable to access institutionalised credit.
  - **Inadequate access to crop insurance:** Persistent issues with the crop insurance system:
    - ◆ unawareness about insurance schemes
    - ◆ inadequate coverage of insurance schemes

- ◆ assessment of the extent of damages in case of crop losses
- ◆ timely settlement of claims
- **Availability of Water:** Currently, about 51% of the agricultural area cultivating food grains is covered by irrigation. The rest of the area is dependent on rainfall (rain-fed agriculture).
- **Soil and Fertilizers**
  - Indian soil consists of primary nutrients such as nitrogen, phosphorous and potassium, secondary nutrients such as sulphur, calcium and magnesium, and micro-nutrients such as zinc, iron, and manganese.
  - **The Ministry of Agriculture has noted that the quality of Indian soil is deteriorating.** About 5.3 billion tonnes of soil gets eroded annually, at a rate of about 16.4 tonne/hectare.
  - **Imbalance in use of fertilizers:** Imbalance in the use of fertilizers in soil may also result in a loss of fertility. While the recommended ratio of use of the NPK fertilizers is 4:2:1, this ratio in India is currently at 6.7:2.4:1.
- **Challenges in the development and distribution of quality seeds:**
  - access to quality seeds
  - inadequate research support
- **Agricultural Machinery:** The status of mechanisation in agriculture varies for different activities, the overall level of mechanisation is still less than 50%, as compared to 90% in developed countries.
  - Some challenges faced by farm mechanisation include different soil and climatic zones which require customised farm machinery, and small land holdings with lack of access to resources.
- **Climate Change:** Projected impacts of climate change on Indian agriculture
  - Productivity of cereals would decrease due to increase in temperature and decrease in water availability (especially in Indo-Gangetic plains).
  - Greater loss expected in rabi. Every 1°C increase in temperature reduces wheat production by 4-5 million tons.

### Agri-Allied Sectors: Major challenges and issues

- **Livestock Sector**
  - **Shortage of feed and fodder:** Crop residue is used as animal feed but a large portion is burnt in the field to clear the field after harvest. Area under fodder cultivation is only about 4% of the cropping area and it has remained static over last four decades.
  - **Unorganized:** Livestock sector particularly small ruminants; sheep, goat, piggery are highly unorganized.
  - **Inadequate infrastructure for marketing, processing and value addition:** Marketing of livestock and

livestock products remains largely unorganized, traditional, and fragmented, with a few exceptions.

- **Livestock and Environment:** Climate change aggravates heat stress in dairy animals, adversely affecting their productive and reproductive performance.
- **Fisheries and Aquaculture Sector**
  - Lack of a reliable database relating to aquatic and fisheries resources.
  - Weak multi-disciplinary approach in fisheries and aquaculture.
  - Poor yield optimization, problems in harvest and post-harvest operations, landing and berthing facilities for fishing vessels and issues in the welfare of fishermen.
- **Horticulture Sector**
  - Wastage and spoilage loss.
  - Paucity of post-harvest management, packing and storage, specialized transport and storage arrangements to maintain the chain from farm to fork.
  - Inadequate infrastructure like transportation, cold storage, warehouses etc.

### Role of Union Budget and Fiscal Policy in Addressing Agriculture Challenges

- **Enhancing Climate Resilience in Agriculture**
  - **Increased Funding for Agri-R&D**
    - ◆ Current expenditure on agricultural research and development (R&D) is less than 0.5% of agri-GDP.
    - ◆ Doubling this to at least 1% is crucial to develop climate-resilient crops and practices.
  - **Promoting Sustainable Farming Practices**
    - ◆ Invest in programs like the Natural Farming Mission while ensuring they meet food security needs.
    - ◆ Support soil health through measures that boost organic carbon and moisture retention.
- **Reforming the Fertiliser Subsidy Policy**
  - **Correcting Fertiliser Imbalances**
    - ◆ Current subsidies favor urea, leading to overuse of nitrogen and underuse of phosphate, potash, and micronutrients.
    - ◆ Promote balanced fertilisation by subsidizing biofertilisers, nano-urea, nano-DAP, and other innovative products.
  - **Direct Income Transfers to Farmers**
    - ◆ Leverage data from soil health cards, fertiliser sales, and PM-KISAN to implement per-hectare income transfers.
    - ◆ Free fertiliser prices from controls, improving nutrient efficiency and reducing environmental damage.

- **Building Robust Agri-Value Chains**
  - **Focus on Fruits and Vegetables**
    - ◆ Develop a value chain on the lines of the dairy sector to ensure farmers receive 75-80% of consumer payments.
    - ◆ Establish a dedicated board for fruits and vegetables akin to the National Dairy Development Board (NDDB).
  - **Learning from the Dairy Sector**
    - ◆ India leads global milk production due to cooperative and private sector synergy.
    - ◆ Similar efforts can revolutionise fruits and vegetables, addressing inefficiencies and inflation.
- **Addressing Policy-Induced Market Distortions**
  - **Revising Export and Stocking Policies**
    - ◆ Stop frequent bans on exports of agricultural commodities like onions, rice, wheat, and sugar.
    - ◆ Encourage stable export policies to avoid negative impacts on farmers' incomes and agri-markets.
  - **Reducing Anti-Farmer Market Practices**
    - ◆ Eliminate the dumping of surplus food grains like rice and wheat in the domestic market below economic cost.
    - ◆ Rationalize stocking limits and futures market restrictions to create a fair-trading environment.
- **Increasing Farmer Income and Reducing Negative Support**
  - **Addressing Negative Producer Support Estimates (PSE)**
    - ◆ India's PSE is negative (-15.5%) compared to China (14%) and OECD countries (13.8%).
    - ◆ Focus on policies that eliminate implicit taxes on farmers due to price controls and export bans.
  - **Promoting Pro-Market Policies**
    - ◆ Shift from pro-consumer bias to balanced policies that support both farmers and consumers.
    - ◆ Encourage private sector participation and investments in agriculture markets.
- **Aligning Agriculture with Food Systems**
  - **Holistic Approach to Agriculture**
    - ◆ Treat agriculture as a food system encompassing production, marketing, and consumption.
    - ◆ Prioritise food and nutritional security alongside sustainable practices.
  - **Encouraging Value Addition:** Support processing, branding, and marketing of agri-products to enhance farmer income and reduce post-harvest losses.

### Further Policy Recommendations

- Adopting a cluster approach for better execution.

- India is a large country, and implementing country-wide schemes is cumbersome and has a lower impact. Therefore, it is recommended that a cluster approach be followed.
- Clusters of selected commodities can help focused diagnostics of the challenges across the crop value chain.
- Clusters can help disseminate region-specific advisory, develop the skills of FPOs and build trust in novel technologies through collective responsibility.
- **Revamping the post-harvest infrastructure**
  - Creation and linking of storage, grading and cooling units across the country at high-demand areas such as mandis, ports and airports, as well as promoting micro-cold storages at farmgate and village levels.
  - It will help reduce losses, promote grade-based pricing of produce, leading to better prices, reduce transportation costs and eliminate distress selling by farmers.

### Schemes for Agriculture and Welfare of Farmers

- **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**
  - PM-KISAN is a central sector scheme launched on 24th February 2019 to supplement financial needs of land holding farmers, subject to exclusions.
  - Under the scheme, financial benefit of Rs. 6000/- per year is transferred in three equal four-monthly installments into the bank accounts of farmers' families across the country, through Direct Benefit Transfer (DBT) mode.
- **Pradhan Mantri Kisan MaanDhan Yojana (PM-KMY)**
  - Pradhan Mantri Kisan Maandhan Yojna (PMKMY) is a central sector scheme launched on 12th September 2019 to provide security to the most vulnerable farmer families.
  - PM-KMY is a contributory scheme, small and marginal farmers (SMFs), subject to exclusion criteria, can opt to become member of the scheme by paying monthly subscription to the Pension Fund.
- **Pradhan Mantri Fasal Bima Yojana (PMFBY)**
  - PMFBY was launched in 2016 in order to provide a simple and affordable crop insurance product to ensure comprehensive risk cover for crops to farmers against all non-preventable natural risks from pre-sowing to post-harvest and to provide adequate claim amount.
- **Modified Interest Subvention Scheme (MISS)**
  - The Interest Subvention Scheme (ISS) provides concessional short term agri-loans to the farmers practicing crop husbandry and other allied activities like animal husbandry, dairying and fisheries.
  - ISS is available to farmers availing short-term crop loans up to Rs.3.00 lakh at an interest rate of 7% per annum for one year.
- **Agriculture Infrastructure Fund (AIF)**
  - In order to address the existing infrastructure gaps and

mobilize investment in agriculture infrastructure, Agri Infra Fund was launched under Aatmanirbhar Bharat Package.

- AIF was introduced with a vision to transform the agriculture infrastructure landscape of the country.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

Q. Discuss how the Union Budget 2025-26 can address issues like climate change, skewed subsidy policies, and anti-market interventions to make agriculture more productive, competitive, remunerative to farmers, and environmentally sustainable. [15 Marks] [250 Words]

## WEAKENING OF THE INDIAN RUPEE

**Why in News:** The Indian rupee has hit an **all-time low recently** against the dollar. The Indian rupee's exchange rate against the US dollar has breached the 85-mark.

#### Exchange Rate

- An exchange rate is the rate at which one currency can be exchanged for another between nations or economic zones.
- It is used to determine the value of various currencies in relation to each other and is important in determining trade and capital flow dynamics.
- There are two methods of quoting the exchange rate.
  - **Direct Method**
    - ◆ A given number of units of local currency for a unit of foreign currency is the Direct Method for quoting exchange rate e.g. USD 1 = Rs.85.
    - ◆ In the Direct Method, home currency is variable.
    - ◆ In India the direct method of quotation is used since August 1993.
  - **Indirect Method**
    - ◆ In the Indirect Method of quotation, the variable is the foreign currency expressed in a fixed unit of home currency. For e.g. Rs.100 = USD 1.6260.

#### Reasons for the Falling Rupee

- **Continuous outflow of foreign funds**
  - When Foreign Institutional Investors (FIIs) invest in Indian stocks and bonds, they bring foreign currency into the country, increasing the demand for the Indian rupee. This increased demand strengthens the rupee.
  - Conversely, when FIIs withdraw their investments from India, they sell their Indian assets and convert the rupees they receive into foreign currency, typically US dollars. This increased demand for dollars weakens the rupee.

- In the last few months, we have seen FIIs pulling out of the Indian market. In October, the net outflow was Rs 1.14 lakh crore, while in November, the net outflow was Rs 45,974 crore. It is one of the main reasons for the falling rupee.
- **US Election Result**
  - Donald Trump recently won the US presidential election and became US President.
  - The win is likely to lead to higher US Treasury yields and a stronger dollar due to market expectations of fiscal expansion, rising interest rates, and increased safe-haven demand.
  - These factors would pressure Asian currencies, including the Indian rupee, by triggering capital outflows, increasing import costs, and widening trade deficits.
- **Ongoing Geopolitical Tension**
  - Ongoing geopolitical tensions, particularly the Russia-Ukraine conflict and increasing US-China rivalry, have created a volatile global economic environment.
  - This uncertainty has led to a risk-off sentiment among international investors, prompting them to seek safety in US dollar-denominated assets.

#### Impact of a Falling Rupee on Indian Economy

- **Positive Impacts**
  - **Export Boost:** A weaker rupee can make Indian exports more competitive in the global market. This can lead to increased demand for Indian goods and services, boosting export earnings. The Indian IT industry is one of the biggest beneficiaries of the falling rupee.
  - **Remittance Benefits:** For Indians living abroad, a weaker rupee means that their remittances can go further in India. It can benefit the economy, especially in regions heavily reliant on remittances.
- **Negative Impacts**
  - **Inflationary Pressure:** A falling rupee can lead to higher import costs, particularly for essential commodities like crude oil. This can fuel inflation, eroding purchasing power and affecting consumer sentiment.
  - **Increased Debt Burden:** Indian companies with foreign debt will face higher costs to service their loans as the rupee depreciates. This can strain corporate balance sheets and hinder investment.
  - **Foreign Investor Sentiment:** A weakening rupee can erode investor confidence, leading to capital flight and a decline in foreign direct investment (FDI) inflows.
  - **Economic Growth:** A combination of higher inflation and reduced investment can slow down economic growth.

**Stabilizing the Indian Rupee**

- **Selling Dollars:** The RBI can directly intervene in the foreign exchange market by selling US dollars from its foreign exchange reserves.
  - This increases the supply of dollars, reducing its demand and thus weakening the dollar relative to the rupee.
  - India’s forex reserve had an all-time high a few months back, and now RBI is selling dollars from the reserves to ensure the rupee does not nosedive against dollars.
- **Buying Rupees:** By buying rupees, the RBI can increase the demand for the Indian currency, strengthening it.
- **Interest Rate Adjustments:** The RBI can adjust interest rates to influence the demand for the rupee.
  - Higher interest rates can attract foreign investors, increasing the demand for the rupee.
- **Liquidity Management:** By controlling the liquidity in the market, the RBI can impact the exchange rate.
  - Tightening liquidity can reduce inflationary pressures and strengthen the rupee.

Historically, the Indian rupee depreciates against the USD at a long-term annual rate of 3.2% (last 20 years’ data). In the last year, the depreciation was low at 1.7%. Experts believe that the rupee will fall significantly in the next few years. As per the SBI research report, the rupee may depreciate 8-10% against the US dollar during the Trump 2.0 regime. Investors should closely monitor the direction, as it not only impacts the equity market but the overall Indian economy.

**PRELIMS SPECIAL**

**Effective Exchange Rate**

- The Effective Exchange Rate (EER) is a measure of the value of a country’s currency relative to a basket of other currencies. It provides a more comprehensive view of a currency’s performance compared to using a bilateral exchange rate (e.g., USD to EUR).
- The effective exchange rate is an indicator to grasp a country’s international competitiveness in terms of its foreign exchange rates that cannot be understood by examining only individual exchange rates between the country’s currency and other currencies.
- **Types:** NEER and REER

**Nominal Effective Exchange Rate (NEER)**

- The nominal effective exchange rate (NEER) adjusts nominal bilateral exchange rates by applying weighted trade data of its trading partners.
- NEER is the weighted average of bilateral nominal exchange rates of the home currency in terms of foreign currencies.

**Real Effective Exchange Rate (REER)**

- Real effective exchange rate (REER), in addition, takes into account of price level (approximated by consumer price indices) differences between trading partners.

- REER is the real effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.
- An increase in REER implies that exports become more expensive and imports become cheaper; therefore, an increase indicates a loss in trade competitiveness.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

- Q. With reference to the Indian economy, consider the following statements:
1. An increase in the Nominal Effective Exchange Rate (NEER) indicates the appreciation of the rupee.
  2. An increase in the Real Effective Exchange Rate (REER) indicates an improvement in trade competitiveness.
  3. An increasing trend in domestic inflation relative to inflation in other countries is likely to cause an increasing divergence between NEER and REER.

Which of the above statements are correct?

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

(c) Answer

**Descriptive Question**

- Q. How can India balance the advantages of a weaker rupee, such as increased exports and remittance benefits, with the challenges it poses, including inflationary pressures and foreign investor sentiment? [15 Marks] [250 Words]

**TREASURY BILLS (T-BILL)**

**Why in News:** The Indian government wants to borrow ₹4 lakh crore from the market using Treasury Bills (T-Bills).

- This borrowing will be done through:
  - ₹1.68 lakh crore via 91-day T-bills
  - ₹1.28 lakh crore via 182-day T-bills
  - ₹98,000 crore via 364-day T-bills

**Why is the government doing this?**

- Because of tight liquidity conditions (less money available in the market), the government needs to raise short-term funds to manage expenses.

**About Government Securities**

- **What is G-Sec:** In order to meet its fiscal expenditure, the government has to borrow money. The RBI issues T-bills and Bonds on behalf of the Government to raise money by

offering a fixed return on investment. **Very similar to how banks give interest on fixed deposits and use that money to lend to others, the government uses it to run our country.**

• **Types of G-Secs**

➤ **Short Term:** These are G-Secs with **original maturity of less than one year**. Examples include Treasury Bills (T-bills) and Cash Management Bills (CMBs).

◆ **T- Bills and its types:**

✓ T-bills are short-term debt instruments issued by the government to meet its short-term borrowing needs.

✓ **Advantage:** These bills are highly liquid and considered a safe investment since they are backed by the government.

✓ **Types of T- Bill:** T-Bills are issued with three different maturity periods: **91 days, 182 days and 364 days**.

◆ **Cash Management Bills (CMBs):** CMBs are also **short-term instruments (maturity less than 91 days)** introduced by the government in 2010. They serve to address **temporary mismatches in the government's cash flows**.

➤ **Long Term:** Long-term G-Secs have original maturity of one year or more. **These include Government Bonds, also known as Dated Securities, and State Development Loans (SDLs)**.

◆ **Dated G-Sec:** These securities pay a fixed or floating interest rate on their face value, with payments made semi-annually. **Maturities for dated G-Secs typically range from 5 to 40 years**.

◆ **State Development Loans:** These are dated securities issued by state governments. Like dated G-Secs, they also make semi-annual interest payments.

• The **central government issues both short-term instruments called Treasury Bills (T-bills)** and long-term instruments called bonds. **State governments**, on the other hand, issue only bonds, which are known as **State Development Loans (SDLs)**.

• **How are the G-Secs issued:**

➤ G-Secs are issued through auctions conducted by RBI.

➤ Auctions are conducted on the electronic platform called the E-Kuber, the Core Banking Solution (CBS) platform of RBI.

➤ Commercial banks, scheduled UCBs, Primary Dealers, insurance companies and provident funds, who maintain funds account (current account) and securities accounts with RBI, are members of this electronic platform.

**How and in what form can G-Secs be held**

• The Public Debt Office (PDO) of RBI, acts as the registry and central depository for G-Secs. They may be held by

investors either as physical stock or in dematerialized (demat/electronic) form.

➤ **Physical form:** G-Secs may be held in the form of stock certificates. A stock certificate is registered in the books of PDO. **The transfer of a stock certificate is final and valid only when the same is registered in the books of PDO.**

➤ **Demat form:** Holding G-Secs in the electronic or scripless form is the safest and the most convenient alternative as it eliminates the problems relating to their custody, viz., loss of security. The holders can maintain their securities in dematerialised form in either of the two ways:

◆ **SGL Account:** A Subsidiary General Ledger (SGL) Account shall mean an account opened and held with the Bank for holding or/and transacting in Government Securities.

◆ **Gilt Account:** As the eligibility to open and maintain an SGL account with the RBI is restricted, an investor has the option of opening a Gilt Account with a bank. The servicing of securities held in the Gilt Accounts is done electronically, facilitating hassle free trading and maintenance of the securities.

• Investors also have the option of holding G-Secs in a dematerialized account with a depository (NSDL / CDSL, etc.). This facilitates trading of G-Secs on the stock exchanges.

**PRELIMS SPECIAL**

**About CDSL and NSDL**

- Central Depositories Services India Ltd. (CDSL) and National Securities Depository Ltd. (NSDL) are both government registered share depositories in India.
- Share depositories hold shares in an **electronic form**. In earlier days where share trading was available only in offline modes, shares were held in the form of physical paper certificates.
- **SEBI** oversees both NSDL and CSDL

**EXPECTED QUESTION FOR UPSC CSE:**

**Prelims MCQ**

Q. Consider the following statements about T- Bills:

1. They are long-term debt instruments issued by the Central government.
2. The State Government doesn't issue treasury bills.
3. These bills are highly liquid in nature.

Select the correct answer using the code given below:

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

Answer: (c)

## WHOLESALE PRICE INDEX (WPI)

**Why in News:** The Government of India has decided to constitute a Working Group for base revision of the current series of Wholesale Price Index (WPI) from base 2011-12 to 2022-23.

### Need for Revision of WPI Series

- On account of the structural changes over time in the economy, products and their specifications are changing even faster.

- Under the **fixed basket approach** the base year is changed at regular intervals.
- Simultaneously index basket weights and source agencies are also updated to keep the index series representative.
- So far, **seven revisions** have taken place introducing the new base year, viz. 1952-53, 1961-62, 1970-71, 1981-82, 1993-94, 2004-05 and 2011-12. The current revision is the **eighth** since its regular introduction.

### Comparison of WPI and CPI

	Wholesale Price Index (WPI)	Consumer Price Index (CPI)
<b>About</b>	It measures the inflation or the average price changes in the sales of <b>goods</b> at the wholesale or retailer level.	It measures the inflation or the average price change in the sales of <b>goods and services</b> at the consumer level.
<b>Target Audience</b>	Here, the target audience or the focus of the index is on the goods traded and sold between retailers and businesses.	Here, the target audience or the focus of the index is on the goods that are directly sold and consumed by the customers.
<b>Basket of Goods and Services</b>	The total number of items covered under WPI is 697.	The total number of items covered under CPI for rural is 448 and for urban, it is 460.
<b>Components</b>	<ul style="list-style-type: none"> <li>Primary Articles</li> <li>Fuel and Power</li> <li>Manufactured Products</li> </ul>	<ul style="list-style-type: none"> <li>Food and beverages</li> <li>Clothing and footwear</li> <li>Housing</li> <li>Fuel and light</li> <li>Pan, tobacco and intoxicants</li> <li>Miscellaneous</li> </ul>
<b>Measurement of Price</b>	The price measurement of WPI is limited to just goods.	The price measurement of CPI is done for both: goods and services.
<b>Frequency of Data Collection</b>	The data is collected frequently and released weekly for the primary items on the WPI. For the rest, it is done on a monthly basis.	The data is collected and released every month.
<b>Nodal Office</b>	Office of the Economic Adviser, Department of Industrial Policy and Promotion, Ministry of Commerce & Industry	National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI)
<b>Base Year</b>	2011-12	2012

#### WPI Food Index

- It was introduced in the new WPI series with base 2011-12.
- This index is estimated by taking the aggregate of WPI for Food Products (9.12) and Food Articles (15.26)
- The total weightage of the WPI Food Index is 24.38%.

### Components of WPI

	Major Group	Weightage
1.	Primary Articles	22.62%

2.	Fuel & Power	13.15%
3.	Manufactured Products	64.23%

#### Producer Price Index (PPI)

- Producer Price Index (PPI) measures the average change in the price of goods and services either as they leave the place of production, called output PPI or as they enter the production process, called input PPI.

#### PPI vs WPI

- WPI captures the price changes at the point of bulk transactions

and may include some taxes levied and distribution costs up to the stage of wholesale transactions. PPI measures the average change in prices received by the producer and excludes indirect taxes.

- Weights of items in WPI are based on net traded value whereas in PPI weights are derived from Supply Use Table.
- PPI removes the multiple counting biases inherent in WPI. PPIs can be compiled separately for Out PPIs, Input PPIs and Export and Import PPIs. In build Stage of Processing, indices can be compiled to avoid multiple counting.
- **WPI does not cover services whereas PPI includes services.**

### Inflation

- Inflation is defined as a sustained increase in the general price level of goods and services in an economy over a period of time.
- It is measured as an annual percentage increase. (e.g., 5% inflation means prices are 5% higher than last year).
- When the general price level rises, each unit of currency buys fewer goods and services. **This implies that inflation reflects a reduction in the purchasing power per unit of money.**

### Types of Inflation

- **Based on Rate**
  - **Creeping Inflation:** Creeping Inflation also known as a Mild Inflation or Low Inflation refers to that type of inflation when the rise in prices is very slow like that of a snail or creeper. It is the mildest form of inflation with less than 3% per annum.
  - **Walking or Trotting Inflation:** When prices rise moderately with a single digit of more than 3% but less than 10% per annum it is called Walking Inflation.
  - **Running Inflation:** A rapid acceleration in the rate of rising prices is referred as Running Inflation. This type of inflation occurs when prices rise by more than 10% per annum.
  - **Galloping Inflation:** Galloping inflation also known as Jumping inflation occurs when prices rise by double- or triple-digit inflation rates of more than 20% but less than 1000% per annum.
  - **Hyperinflation:** When prices rise at an alarming high rate with quadruple or four-digit inflation rate of above 1000% per annum then is termed as Hyperinflation.
  - **Chronic Inflation:** If creeping inflation persist for a longer period of time, then it is often called as Chronic or Secular Inflation. It is called chronic because if an inflation rate continues to grow for a longer period without any downturn which may possibly lead to Hyperinflation.
- **Based on Cause**
  - **Demand-Pull Inflation:** Demand-Pull Inflation also known as Excess Demand Inflation takes place when aggregate demand for a good or service outstrips aggregate supply. In other words, when aggregate demand for all purposes-consumption, investment and government expenditure-exceeds the supply of goods at current prices then it is called Demand-Pull Inflation. Demand-Pull inflation gives

rise to a situation often economists describe as “Too much money chasing too few goods”.

- **Cost-Push Inflation:** When prices rise due to growing cost of production of goods and services then it is known as Cost-Push Inflation. Cost-push inflation also came to known as “New Inflation” is determined by supply-side factors mainly caused by higher wage-push, Profit-Push and higher costs of raw materials.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Which of the following components has the highest weightage in Wholesale Price Index (WPI):

- (a) Primary Articles
- (b) Fuel & Power
- (c) Manufactured Products
- (d) Food

Answer: (c)

## DEBT MARKET IN INDIA

**Why in News:** NITI Aayog is looking at ways to balance government debt and corporate debt markets so that companies can raise funds more easily.

- Currently, the **government debt market (where the government borrows money)** is much bigger than the **corporate debt market (where companies borrow money)**.

### What is the Debt Market?

- A **debt market** is a financial system where **governments, companies, and institutions borrow money** by selling bonds or other debt instruments.
- When you buy a bond, you are **lending money** to the issuer (government or company) in exchange for **regular interest payments** and repayment after a fixed period.

### Examples of debt instruments:

- **Government bonds** (issued by the central & state governments)
- **Corporate bonds** (issued by companies)
- **Debentures** (long-term loans issued by companies)
- **Short-term deposit certificates**

### Role of Debt Market in the Economy

- **Helps in mobilizing money** – It allows governments and companies to **raise funds efficiently**.
- **Funds government projects** – The government uses this money to **build infrastructure, roads, and schools**.
- **Affects interest rates** – It helps in implementing the **monetary policy** of RBI.
- **Gives businesses an alternative to bank loans** – Companies can **borrow money at lower interest rates** compared to bank loans.

## Corporate Debt Market in India

- The **corporate bond market** is where **companies borrow money** by issuing bonds.
- It has **grown significantly** and plays a major role in funding **infrastructure & business expansions**.
- **Key facts:**
  - Total size of corporate bond market: **₹217 trillion (as of March 2024)**
  - Corporate bond issuances in **FY24: ₹8.6 lakh crore**
  - Corporate bonds make up **22% of India's total bond market**.

## Trends in Corporate Bond Market

- **Private placements dominate** – 98% of corporate bonds are issued through **private placements** (where companies directly sell bonds to large investors instead of public markets).
- **Public issuance declining** – Public bond issuance fell from 12% in 2014 to just 2% in 2024.
- **More trading in corporate bonds** – Daily average trading volume is now **₹5,722 crores in FY24**.
- **Most bonds are now listed** – 90% of corporate bond trading happens in **listed securities** (bonds traded on stock exchanges).

## Challenges

- **Liquidity Constraints:** Despite increasing issuances, secondary market trading remains stagnant.
- **Retail Participation:** High face values of bonds limit retail investor involvement.
- **Fragmentation:** The presence of multiple bond International Securities Identification Numbers (ISINs) for the same issuer hampers liquidity.
- **Poor Market Mechanisms:** A weak market infrastructure, characterized by poor market-making and a sluggish secondary market, hinders active participation.

## Regulatory Reforms: Initiatives Strengthening India's Debt Market

- **Consolidation and Reissuances to reduce fragmentation:** SEBI has reduced the number of ISINs per issuer to improve liquidity.
- **Reduction in Face Value to Encourage Retail Participation:** Face value for privately placed bonds reduced from ₹10 lakh to ₹10,000 to encourage retail participation.
- **Electronic Book Provider (EBP) Platform: Online Price Discovery of Private Placements:** It streamlined the bond issuance process by facilitating electronic bidding and allotment.
  - This initiative not only enhanced transparency but also improved efficiency in price discovery, making it easier for issuers to raise funds and for investors to participate in bond offerings.

- **Request For Quote (RFQ) Platform: Electronification of Secondary Corporate Bond Trading:** The RFQ Platform was created with the goal of transforming corporate bond trading from a traditional OTC-based trading to an electronic trading platform.
- **Tri-Party Repo on Corporate Bonds with Settlement Guarantee:** Introduced to enhance bond market liquidity and reduce counterparty risk.
- **Framework for Online Bond Platforms:** SEBI introduced a framework for fintech platforms to ease retail investor access.
- **Once listed, always listed – a reform to enable transparency:** It ensures transparency by mandating continuous listing of bonds.
- **Revamped Information repository of listed bonds in India - the Centralized Bond Database:** Provides investors with easy access to information on listed bonds.
- **New Credit Default Swaps (CDS) Guidelines by RBI:** According to the RBI, the purpose of introducing Credit Default Swaps (CDS) on corporate bonds is to give market participants a tool for effectively managing and transferring credit risk through risk redistribution.
  - CDS as a risk management product offers the participants the opportunity to hedge off credit risk and also to assume credit risk which otherwise may not be possible.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

- Q. Discuss the role of the corporate debt market in India's economic development. Highlight the key trends, challenges, and regulatory reforms that have shaped the market in recent years. [15 marks] [250 words]

## REVOLUTIONIZING DIGITAL COMMERCE: THE ONDC INITIATIVE

**Why in News:** Prime Minister recently, stated that ONDC (Open Network for Digital Commerce) has **not only empowered small businesses but has also revolutionized the e-commerce sector fostering growth and prosperity across the nation.**

### Key Details

- The Open Network for Digital Commerce (ONDC) is a transformative initiative by the **Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce**, Government of India aimed at **democratizing digital commerce**.
- It was launched in April 2022, and incorporated as a **non-profit, Section-8 company and incubated at the Quality Council of India**.

- ONDC is an initiative aiming at **promoting open networks for all aspects of the exchange of goods and services over digital or electronic networks.**
- ONDC is based on **open-sourced methodology**, using open specifications and open network protocols independent of any specific platform.
- It envisions creating a **level playing field for sellers, buyers, and service providers** across India, particularly small and medium enterprises (MSMEs).
- As of **January 2, 2024**, the sellers and service providers are spread across **616+ cities** expanding the geographical coverage of the ONDC network.

### Objectives of the ONDC Initiative

- **Democratization of Commerce:** Break the dominance of large e-commerce platforms by enabling interoperability across networks.
- **Inclusivity:** Empower small businesses, retailers, and local artisans to access the digital marketplace.
- **Cost Efficiency:** Lower the cost of customer acquisition and transaction processing for sellers.
- **Market Expansion:** Bridge regional and linguistic gaps,

### Benefits of ONDC

Benefits Of ONDC		
Sr. No.	Stakeholder	Benefit
1	Sellers	➤ Access to a wider audience
		➤ Reduced dependence on large platforms.
		➤ Enhance revenue opportunities
2	Buyers	➤ Increased options for products and services
		➤ Competitive pricing due to broader seller participation
3	Service Providers	➤ Opportunities for logistics, fintech, and IT service providers to integrate into the network
4	Consumers	➤ Discover sellers, products, and services on any compatible platform
		➤ Match demand with nearby suppliers and choose local businesses

### Impact of ONDC

- **Market Democratization:** Ensuring that businesses of all sizes can thrive.
- **Economic Growth:** Increased digital commerce activity contributing to GDP.
- **Job Creation:** Expanding opportunities in technology, logistics, and ancillary services.
- **Consumer Empowerment:** Offering diverse options and competitive pricing.

### Collaborations with Government Departments/Ministries

- **Ministry of MSME:** To onboard small businesses and

bringing untapped markets into the fold of digital commerce.

- **Customer Empowerment:** Increase options for buyers by providing access to a broader array of sellers.

### How Does It Work?

- ONDC employs **open network protocols to facilitate seamless interaction between participants.**
- The network enables buyers and sellers from different platforms to transact with each other using standardized APIs.
- **The key components include:**
  - **Decentralized Architecture:** Unlike traditional platforms, ONDC does not own or operate e-commerce services. It acts as an enabler for interconnectivity.
  - **Open Protocols:** Based on open standards, ONDC ensures that any seller or buyer platform adhering to these protocols can participate.
  - **Role Segregation:** Participants are classified into roles such as Buyer Applications, Seller Applications, and Logistics Providers, ensuring clear delineation of responsibilities.

local artisans, enhancing their digital presence, for example, the MSME-TEAM Initiative.

- **Ministry of Commerce and Industry:** For policy alignment and fostering international trade through the ONDC network.
- **Digital India Program:** Leveraging digital infrastructure to ensure widespread access.
- **Startup India:** Promoting entrepreneurship and innovation by integrating startups into the ONDC ecosystem.
- **Quality Council of India:** The DigiReady Certification



- On maturity, the deposits would be renewed or withdrawn at the option of the depositor.
- The deposits shall be denominated only in Indian rupees as per RBI norms.

### Use of Green Deposits in India

- **Funding projects:** Capital raised via green deposits can be used in funding projects related to solar, wind, biomass, and hydropower energy projects that integrate energy generation and storage.
- **Focus on sustainable energy:** Further, the funds can be used in sectors which enable energy efficiency, clean transportation, climate change adaptation and sustainable water and waste management.
- **Green Infrastructure:** Green deposits can also be used for funding green buildings, projects relating to coastal and marine environments.

### Third-Party Audit

The RBI mandates an **annual independent audit** of the funds raised through green deposits to ensure they are used for the intended green projects.

### Challenges faced by them in India

- **Low investment by private sectors:** While most public sector banks have started accepting green deposits, private banks are slow adopters to such deposits.
- **Need for Framework:** There is a need for a framework about measuring which industry and activity is green, and how to account for that.
- **Lack of awareness:** Most customers don't fully understand the purpose or benefits of green deposits, so they don't find them attractive.
- **Competitive Interest rates:** Another core challenge bankers face in mobilising green deposits is lower rate of interest. For instance, SBI offers 7% for the general public on 2–3-year tenor retail domestic term deposit, whereas if a customer opts for green deposit at a similar tenor, they get 6.65%.

### Way Forward

- **Reduction in CRR:** A reduction in cash reserve ratio (CRR) requirement for green deposit will help banks garner more customers.
- **Customer Awareness:** More marketing and customer awareness of the green deposits as a product is required to boost volumes.
- **Establish an Indian Green Taxonomy:** Set clear guidelines for what qualifies as a 'green' project and establish measurable targets for each sector.
- **Use of ESG funds in green deposits:**
  - All large corporations have medium to long term environmental, social and governance (ESG) commitments to fulfil.
  - By parking ESG funds in green deposits with banks,

lenders can on-lend to green field projects which will further the green cause, and help corporates meet ESG requirements.

### PRELIMS SPECIAL

#### About Green Deposits Framework

- **Aim:** To prevent greenwashing, which refers to making misleading claims about the positive environmental impact of an activity.
- **Application:** The framework applies to all scheduled commercial banks and small finance banks (except for regional rural banks and local area banks) and non-banking finance companies (including housing finance companies).
- **Investors:** Both corporate and individual customers can invest in green deposits.
- Banks and NBFCs shall put in place a comprehensive board-approved policy on green deposits, and a copy of the policy shall also be made available on their websites.
- Banks will be **barred** from investing green deposits in business projects involving fossil fuels, nuclear power, tobacco, etc.
- **Impact assessment by lenders:** Lenders must annually assess the impact associated with the funds lent for or invested in green finance activities and submit a review report before their Board.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

- Q. What do you understand about 'Green Deposits' as issued by the RBI? What challenges do they face, and what are the ways to promote them? [15 marks] [250 words]

## HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY: 2023-24

**Why in News:** Recently, the **Ministry of Statistics and Programme Implementation (MoSPI)** prepared and released summary results of the **Household Consumption Expenditure Survey (HCES), 2023-24**.

### What is the Household Consumption Expenditure Survey (HCES)?

- HCES is designed to collect information on **consumption and expenditure of the households on goods and services**.
- The survey provides data required to assess trends in economic well-being and to determine and update the basket of consumer goods and services and weights used for the calculation of the Consumer Price Index.
- Data collected in HCES is also used to measure poverty, inequality, and social exclusion.



**Descriptive Question**

Q. Examine the key findings of the Household Consumption Expenditure Survey: 2023-24 and discuss their implications for inclusive growth and policy formulation in India. [15 marks] [250 words]

**GATT-IFICATION OF WTO**

**Why in News:** The World Trade Organization (WTO) marked its 30th anniversary on January 1, 2025, and **it missed the crucial target of revitalizing a fully functioning dispute settlement system by the end of 2024.**

**GATT-ification of WTO**

- WTO is undergoing a process of regression to practices reminiscent of the General Agreement on Tariffs and Trade (GATT) era, **characterized by diplomacy-driven trade relations and weaker legal mechanisms.**
  - **Weakening Legal Framework:** The non-operational Appellate Body signifies a breakdown of the system, as **unresolved disputes now languish without enforcement.**
  - **Decline in Institutional Authority:** Countries are increasingly bypassing WTO mechanisms and resorting to unilateral measures, such as tariffs and sanctions, undermining the institution's authority. **Example: The U.S. and China imposing tariffs on each other.**
    - ◆ This rollback of legal commitments marks a return to ad hoc, power-driven negotiations, a hallmark of the GATT period.
  - **Resistance to Multilateralism:** The GATT period was dominated by bilateral and regional agreements, a trend re-emerging as countries prioritize flexible and politically expedient trade deals over binding global agreements.

**About the WTO**

- The World Trade Organization (WTO) is the **only global international organization** dealing with the rules of trade between nations.
- The **WTO agreements are central to its framework**, negotiated and signed by most of the world's trading nations and ratified by their parliaments.
- The primary objective is to ensure the smooth, predictable, and unrestricted flow of trade.
- The WTO has many roles: it **operates a global system of trade rules, it acts as a forum for negotiating trade agreements**, it settles trade disputes between its members and it supports the needs of developing countries.
- All major decisions are made by the WTO's member governments: **either by ministers (who usually meet at least every two years) or by their ambassadors or delegates (who meet regularly in Geneva).**

**What Needs to Be Done? (Recommended Reforms)****Fix the Dispute Settlement System**

- Restart the Appellate Body so WTO can enforce trade rules again.
- Speed up case decisions so trade disputes don't drag on.
- Ensure fair and neutral judgment to regain trust.

**Strengthen Leadership & Governance**

- Powerful countries (like the US, China, and EU) should support WTO instead of ignoring it.
- Reform decision-making to stop any one country from blocking progress.
- Make sure developing countries have a fair say in trade decisions.

**Improve Transparency & Monitoring**

- Ensure countries report trade data properly.
- Tackle political conflicts that slow down decision-making.
- Work with other global organizations on digital trade and climate change.

**Make WTO More Inclusive**

- Provide fairer treatment for developing countries based on their needs.
- Help small businesses (MSMEs) enter global trade.
- Stop unfair practices by large state-owned companies.

**Institutional & Structural Reforms**

- Get input from businesses and civil society on trade policies.
- Make WTO's secretariat stronger to handle global trade challenges.
- Make trade data freely available for better transparency.

The WTO is losing power, and trade is becoming more dependent on political negotiations rather than global trade laws. The collapse of the dispute resolution system is a serious problem. To restore its credibility, WTO needs stronger legal enforcement, better governance, and more inclusive trade policies. Without reforms, global trade will become more chaotic, unfair, and unpredictable.

**Note:** For more information on WTO, refer June Current Affairs Magazine Page no. 36.

<https://chahalacademy.com/assets/pdf/june-2024-current-affairs-magazine.pdf>

**EXPECTED QUESTION FOR UPSC CSE****Descriptive Question**

Q. How can the WTO effectively balance the competing priorities of major economies like the U.S. and China and address the concerns of developing nations to restore its authority in global trade governance? [10 Marks] [150 Words]

## NATIONAL WATERWAYS

**Why in News:** The **Inland Waterways Development Council (IWDC)** is the highest-level meeting where important decisions are made to improve and expand the use of rivers and canals for transportation in India.

- At this meeting, major announcements were made to improve infrastructure along **national waterways** (rivers, canals, and lakes used for transport).
- The event is organized by the **Inland Waterways Authority of India (IWAI)**, which is responsible for developing and maintaining inland water transport.
- The IWAI works under the **Ministry of Ports, Shipping & Waterways (MoPSW)**.

### Key Announcements & Outcomes

- Investment of ₹50,000 crore in the next five years**
  - The government plans to spend a large amount of money to improve waterways, build better transport infrastructure, and boost trade and tourism.
- ₹1,400 crore for projects across 21 inland waterway states**
  - Various new projects will be launched in 21 states to develop water-based transport and infrastructure.
- Riverine Community Development Scheme**
  - This program aims to help people living near rivers by improving their living conditions, creating job opportunities, developing tourism, and protecting the river environment.
- National River Traffic and Navigation System (NRT&NS)**
  - A system will be introduced to ensure smooth and safe movement of boats and ships on inland waterways.
- Central Database Module & Issuance of Certificates**
  - A digital system will be developed to make the certification process easier for vessel (boat/ship) owners.

### Major National Waterways

National Waterway (NW)	Details	Status
NW 1	Ganga-Bhagirathi-Hooghly River System (Haldia - Allahabad)	<ul style="list-style-type: none"> <li>• <b>Jal Marg Vikas Project (JMVP).</b></li> <li>• The major components are Multi-modal Terminal at Varanasi, Sahibganjand Haldia, Construction of New Navigational Lock at Farakka, modernization of old lock gate at Farakka, Kalughat Intermodal Terminal, and Fairway Development</li> <li>• <b>Physical progress - 61.79%</b></li> <li>• <b>Financial progress - 61.57%</b></li> </ul>

- Regional Centre of Excellence (RCoE) in Dibrugarh, Assam**
  - A training and research center will be set up to train workers, promote innovation, and develop the inland water transport (IWT) sector in the Northeast.
- Expansion of the Quick Pontoon Opening Mechanism (QPOM)**
  - A system used on the Ganga (NW-1) to quickly install temporary floating bridges and docks will now be implemented on all National Waterways.
- New ship repair facility in Ghazipur**
  - A maintenance center will be built in **Ghazipur, Uttar Pradesh**, to repair ships and boats, reducing the time they remain out of service due to breakdowns or maintenance work.

### Growth in Inland Water Transport (IWT)

- **Since 2014:**
  - **767% increase** in operational **national waterways**.
  - **635% increase** in **cargo volume** transported via waterways.
  - **233% increase** in government **investments** in waterways.
  - Cargo traffic on national waterways grew from **18 million tonnes to 133 million tonnes in 10 years** (22% annual growth).

### National Waterways in India

- For the development of Inland Water Transport (IWT) in the country, 111 waterways (including 5 existing and 106 new) spread over 24 States have been declared National Waterways (NWs) under the **National Waterways Act, 2016**.
- On the basis of the outcome of the techno-economic feasibility study and Detailed Project Report (DPR), of these NWs action plan has been formulated for 26 NWs which were found viable for cargo and passenger movement.

NW 2	Brahmaputra River (Dhubri - Sadiya)	<ul style="list-style-type: none"> <li>• <b>Comprehensive Development of NW-2.</b></li> <li>• The major components are Construction of <b>Bogibeel cargo terminal</b>, Construction of terminal at Jogighopa, Development of Approach Road from Pandu Port Terminal to NH-27 and Development of Ship Repair Facility at Pandu, Guwahati (Assam) and fairway development.</li> <li>• <b>Physical progress – 71.23%</b></li> <li>• <b>Financial progress - 71.23%</b></li> </ul>
NW 16	Barak River (Lakhipur -Tuker Gram)	<ul style="list-style-type: none"> <li>• Comprehensive Development of NW-16 &amp; Indo Bangladesh Protocol Route (IBP)</li> <li>• The major components are Construction of Terminal at Sonamura on Gumti river, Up gradation of Badarpur and Karimganj Terminals, Construction of Office building, and residential complex along with boundary wall in Silchar and Procurement of one Amphibian Dredger and Survey Vessel and fairway development.</li> <li>• <b>Physical progress - 16.39%</b></li> <li>• <b>Financial progress - 16.39%</b></li> </ul>
NW 3	West Coast Canal (Kottapuram - Kollam), Champakara and Udyogmandal Canals	<ul style="list-style-type: none"> <li>• Development of 23 National Waterways (consisting of NW-3, NW-4, NW-5 and 16 new NWs) for the purpose of shipping &amp; navigation.</li> <li>• The major components are Fairway Development, Terminal Development and allied Infrastructure, Hydrography Survey, charting &amp; RIS etc.</li> <li>• <b>Physical progress – 47.84%</b></li> <li>• <b>Financial progress – 47.56%</b></li> </ul>
NW 4	Krishna River (Vijayawada – Muktyala)	
NW 5	Dhamra-Paradip via Mangalagadi to Pankopal	

### Steps taken by the Government to increase cargo movement through the National Waterways

- **Jalvahak scheme:** To provide 35% incentive to promote utilisation of the IWT sector by cargo owners. It is being extended to other National Waterways covering other States and Union Territories.
- **Shift of cargo by PSUs:** For the modal shift of cargo to waterways, more than 140 Public Sector Units have been approached to plan their movement using Inland Water Transport mode.
- **Integration with Ports:** Syama Prasad Mookherjee Port, Kolkata has been requested for the operation and management of Multi-Modal Terminals at Varanasi, Sahibganj, Haldia and Intermodal terminal at Kalughat along with other terminals on NW-1.
- **River Cruise Tourism:** A total of 34 Waterways have been identified for cruise movement and 10 have already been operationalised.
- **IBP Route:** Indo Bangladesh Protocol route no. 5 & 6 between Maia and Sultanganj has been operationalized recently with successful trial movements.

- **Ro-Ro/Ro-Pax services** have been implemented in Assam, Bihar, Kerala and Uttar Pradesh. The Ro-Ro/Ro-Pax operations are monitored regularly.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following National Waterways in India:

	National Waterway (NW)	Rivers / Location
1.	NW 2	Brahmaputra River
2.	NW 4	Barak River
3.	NW 5	Krishna River

How many of the above pairs is / are correctly matched?

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

Answer: (a) (1 only)

## KEN-BETWA LINK: A FLAWED SOLUTION TO INDIA'S WATER CRISIS

**Why in News:** Recently, the Prime Minister of India laid the foundation stone for the Ken-Betwa River Link Project.

### Key Details

- The project aims to **address water scarcity in the Bundelkhand region**, which spans parts of **Uttar Pradesh and Madhya Pradesh**. It involves linking the **Ken River (considered water-surplus)** with the **Betwa River (water-deficient)** to improve water availability.
- River interlinking is presented as a “geoengineering” solution to the ongoing water crisis, which is being framed as a technological fix for India’s water issues.

### Historical Background

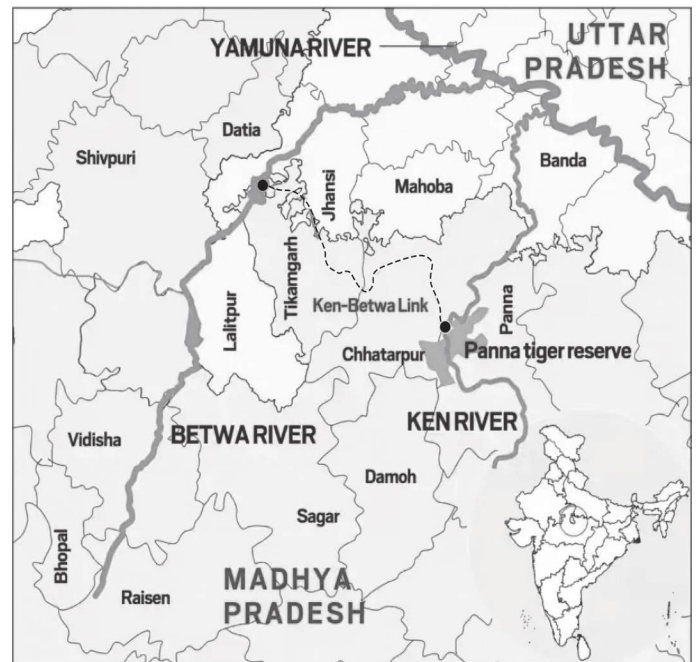
- The idea of inter-basin water transfer was **first proposed 130 years ago by Sir Arthur Cotton**, who built irrigation systems in the Godavari and Krishna rivers.
- **M. Visvesvaraya**, a respected Indian engineer, improved this idea, and later, in the 1970s and 1980s, **engineers like K.L. Rao and Captain Dinshaw J. Dastur** expanded it further.
- Initially called the “**National Water Grid**,” this idea evolved into the **Inter-Linking of Rivers (ILR) Programme** which aims to move excess water from surplus rivers (like the Ganga and Brahmaputra) to water-scarce areas in central and southern India.

### Concerns

- **Impact on Panna Tiger Reserve:** This project involves building a dam in the **Panna Tiger Reserve**, which has raised concerns about flooding and submerging parts of the reserve.
- **Water Supply vs. Environmental Impact:** Bundelkhand, in the past, had a significant amount of forest cover — about 58% in 1938. The project aims to provide water to this drought-prone area, but it also **poses environmental concerns due to the potential loss of forests** and wildlife habitat in the tiger reserve.
- **Project Cost and Expert Objections:** The project costs around ₹45,000 crore and has faced objections from experts, including those in a Supreme Court-appointed committee. **The concept of linking rivers is seen as**

flawed because it ignores the high environmental costs and the potential for the destruction of rivers and their deltas.

- **Legal and Regulatory Concerns:** It has been launched despite bypassing legal norms that restrict hydroelectric power projects (Legal Concerns).
- **Climate Change Considerations:** The project does not account for the effects of climate change, which may alter rainfall patterns and river flow.



### National Water Development Agency (NWDA)

- The NWDA was established in 1982 to carry out surveys, studies, and prepare reports on the feasibility of river links.
- The agency identified 30 potential river links, split into 14 Himalayan and 16 Peninsular River links, aiming to reduce the effects of floods, droughts, and water shortages in agriculture.

### The Eco-Services of Rivers

Rivers provide many natural benefits, often called **eco-services**, that help maintain environmental balance. However, policymakers often ignore these benefits when planning large projects like river interlinking or dam construction. They assume that some river water is “wasted” when it flows into the sea, but this is a misunderstanding of how rivers work.

### Rivers Are Part of a Larger Ecosystem

- Rivers are not just flowing water, they are part of a **drainage basin**, which includes the surrounding land, groundwater, and the area where the river meets the sea (deltaic plains).
- **Changing the river's natural flow affects the entire ecosystem, including plants, animals, and human communities that depend on it.**

### How Free-Flowing Rivers Benefit Us

- **Silt Transport & Delta Formation:** Rivers carry silt (fine soil) from their upper regions to the sea. This **builds deltas**, which are fertile and support farming, fishing, and biodiversity.
- **Floods Are Not Wasteful:** Floodwaters carry minerals that **improve soil fertility** and **recharge groundwater**. Instead of seeing floods as "extra water," we should understand that they help sustain life.
- **Biodiversity & Livelihoods:** Many communities, especially the poor, depend on river ecosystems for **fishing, farming, and water supply**. Changing river flow can destroy their livelihoods.

### What Happens When We Divert Rivers?

- **Saltwater Intrusion:** Deltas need a continuous flow of freshwater. If rivers are diverted, seawater moves inland, making land **salty and infertile**.
- **Lessons from the Indus Delta:**
  - The Indus Delta in Pakistan was once one of the most fertile areas.
  - When the British built barrages (dams) to control the river, and later Pakistan continued the same approach, the delta **became dry and unproductive**.
- **The Narmada Example:** The Sardar Sarovar Dam on the Narmada River in India is another case where water diversion is **reducing downstream flow**, harming ecosystems and communities.

### Global Disasters from River Alterations

- **The Kissimmee River (USA):** In Florida, the U.S. government changed the river's natural path to control floods. As a result, wetlands **were destroyed**, and now the government is spending huge amounts to **restore the river**.
- **The Aral Sea (Central Asia):** Once one of the largest lakes, it has almost **disappeared into a desert** because Soviet engineers diverted its source rivers for irrigation.

#### India's Water Crisis

India faces a **severe water crisis**, but the main problem is not a lack of water- It is **poor management and policies**.

Why Is India Running Out of Water?

- **Poor Water Management:**
  - Water is used inefficiently in **agriculture, industries, and cities**.

- Groundwater is **over-extracted** without proper recharge.
- **Environmental Mismanagement:**
  - Deforestation and pollution reduce the availability of clean water.
  - Rivers are **polluted by industries, sewage, and religious activities**.
- **Weak Laws and Corruption:**
  - Water laws are unclear, and enforcement is weak.
  - Corruption in water projects leads to **inefficient or harmful policies**.

### How Can India Solve Its Water Crisis?

- **A Better National Water Policy:**
    - Water management should consider **entire river basins**, not just individual projects.
    - The government should work with **local communities, scientists, and engineers**.
  - **Efficient Water Use in Agriculture:**
    - **Drip irrigation**, like in Israel, saves 25%-75% of water.
    - Farmers should be encouraged to grow **less water-intensive crops**.
  - **Groundwater & Wastewater Management:**
    - Groundwater extraction should be **regulated** to prevent depletion.
    - Wastewater recycling can reduce dependence on fresh water.
- Incorporating Traditional Knowledge**
- Ancient Indian water conservation techniques, like **stepwells, tanks, and check dams**, should be revived.

### Conclusion

Rivers provide essential ecological services, and any major changes to their flow must be carefully studied. Short-sighted projects can have devastating long-term effects on the environment, economy, and human lives. India's water crisis can be solved through better management, scientific planning, and sustainable practices rather than disruptive engineering projects. Scientists, policymakers, environmental activists, and local communities must work together. Sustainable water policies should focus on conserving and restoring rivers, rather than blindly constructing dams or diverting water.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

- Q. Consider the following statements regarding the Ken-Betwa River Link Project:
1. Both rivers are the tributaries of the Ganga River.
  2. The project doesn't pass through any tiger reserve of India.

Which of the statements given above is/are **incorrect**?

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

(c) :Answer

**Descriptive Question**

Q. The Ken-Betwa River Link Project is a significant step toward addressing water scarcity and boosting irrigation in drought-prone areas. Discuss the potential benefits of the project along with the environmental, social, and economic challenges associated with it. [150 words] [10 marks]

**POWERING INDIA WITH RENEWABLE**

**Why in News:** Recently, the Union Ministry of New and Renewable Energy (MNRE) has reported **remarkable progress in India’s renewable energy sector**, highlighting significant achievements between December 2023 and December 2024.

**Key Details**

**Total Renewable Energy Capacity**

- India’s **installed capacity for renewable energy** as of December 2024 is **209.44 GW**, a remarkable 15.84% increase from 180.80 GW in December 2023.
- Compared to the 13.05 GW installed in 2023, the **total capacity added in 2024 was 28.64 GW**, a notable year-over-year growth of 119.46%.

**Solar Energy**

- With the **addition of 24.54 GW in 2024**, solar power led this boom, indicating a 33.47% increase in its **total installed capacity** from 73.32 GW in 2023 to **97.86 GW** in 2024.

**Wind Energy**

- Wind energy also contributed to this expansion, with an additional **3.42 GW installed in 2024**, increasing the **total wind capacity to 48.16 GW**, a growth of 7.64% from 2023.

**Bio-Energy**

- Bioenergy’s **installed capacity** increased by 4.70% from 10.84 GW in December 2023 to **11.35 GW** in December 2024, demonstrating its impressive growth.

**Small Hydropower**

- With **installed capacity** rising from 4.99 GW in 2023 to **5.10 GW** in 2024, or a 2.20% increase, small hydropower plants experienced gradual growth.

**PRELIMS SPECIAL**

**Panchamrit:** India’s Climate Action Plan

- Reach 500 GW of non-fossil energy capacity by 2030.
- 50 percent of its energy requirements from renewable energy by 2030.
- Reduction of total projected carbon emissions by one billion tonnes from now to 2030.
- Reduction of the carbon intensity of the economy by 45 percent by 2030, over 2005 levels.
- Achieving the target of net zero emissions by 2070.

**Conclusion**

These impressive figures underscore the Government of India’s continued efforts to scale up renewable energy capacity in India, reflecting India’s dedication to fulfilling its climate commitments while strengthening energy security.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding India’s policy of Panchamrit on India’s climate action:

- It aims to generate 1000 GW of non-fossil energy capacity by 2030.
- It aims to achieve net zero emissions by 2050.
- It aims to reduce the carbon intensity of the economy by 45 percent by 2030, over 2005 levels.

Which of the above-given statements is/are correct?

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

(c) :Answer

**TRANSLOCATION OF TIGERS**

**Why in News:** Madhya Pradesh Chief Minister has directed for the translocation of 15 tigers from Madhya Pradesh to Rajasthan, Chhattisgarh and Odisha.

**Key Details**

- The plan is to move **12 tigresses (female tigers) and 3 male tigers** to these states, but this will only happen once the central government gives permission.
- No specific timeline has been set for when the tigers will be moved.
- The tigers will be moved from three famous tiger reserves in MP: Bandhavgarh, Pench, and Kanha.
- The states receiving the tigers will be responsible for covering the costs of the translocation.**

**Details of Translocation**

- Chhattisgarh will receive six tigresses and two male tigers.

- Rajasthan will get four tigresses.
- Odisha will receive one male tiger and two tigresses.

**Note:** The movement of the tigers will be supervised by a certified veterinarian to ensure that the tigers are safe and do not face any harm during the translocation process.

#### Current Tiger Population in MP

- MP is home to the highest number of tigers in India, with 785 tigers, according to the latest "Status of Tigers: Co-predators & Prey in India-2022" report.
- The report was released by the National Tiger Conservation Authority (NTCA) and the Wildlife Institute of India.
- The state of Karnataka comes second, with 563 tigers, and Uttarakhand is in third place with 560 tigers.

#### Tiger Reserves in MP

- Madhya Pradesh has eight notified tiger reserves, including Kanha, Pench, Bandhavgarh, Satpura, Sanjay Dubri, Panna, Veerangana Durgavati, and Ratapani (which was recently declared as the eighth reserve).
- Madhav National Park in MP has not yet been declared as a tiger reserve.

### Tigers

- **Scientific Name:** Panthera tigris
- **IUCN Status:** Endangered
- **Sub-species**
  - Continental (*Panthera tigris tigris*)
  - Sunda (*Panthera tigris sondaica*)
- The largest of all the Asian big cats, tigers rely **primarily on sight and sound** rather than smell for hunting.
- They typically hunt alone and stalk prey.
- **Lifespan:** Tigers have been known to reach up to 20 years of age in the wild.
- Tigers are mostly solitary, apart from associations between mother and offspring.
- **Habitats:** Tropical rainforests, evergreen forests, temperate forests, mangrove swamps, grasslands, and savannas
- **Tigers in India:** As per the 5th cycle of the All-India Tiger Estimation 2022 (usually done in cycles of four years), India has a minimum of 3,167 tigers and is now home to more than 70% of the world's wild tiger population.

#### Distribution of Tigers in India

- Tiger habitats in India are categorised into **five major landscapes** based on biogeography and interconnectivity.
  - Shivalik Hills & Gangetic Plains Landscape
  - Central Indian Highlands & Eastern Ghats Landscape
  - Western Ghats Landscape
  - North Eastern Hills & Brahmaputra Plains Landscape
  - Sunderbans Landscape

- The largest number of tigers are found in the Central Indian Highlands & Eastern Ghats Landscape, and the fewest are found in the Sunderbans Landscape.

#### Tiger Conservation in India

- Government of India with the World Wildlife Fund launched **Project Tiger** in 1973 as a centrally sponsored scheme covering nine protected areas.
- In 2005, the Tiger Task Force submitted a report to the Government of India, leading to significant amendments to the Wildlife (Protection) Act in 2006. These amendments resulted in the establishment of the **National Tiger Conservation Authority (NTCA)** and the Wildlife Crime Control Bureau as statutory bodies.



#### Inter-state Tiger Relocation Project

- The tiger relocation project was initiated in 2018 wherein two big cats, a male (Mahavir) from Kanha Tiger Reserve and a female (Sundari) from Bandhavgarh from Madhya Pradesh were relocated to Satkosia Tiger Reserve in Odisha, to shore up the tiger population in the state.
- The relocation was meant to serve two **purposes**:
  - reducing tiger population in areas with excess tigers to majorly reduce territorial disputes.
  - to reintroduce tigers in areas where the population has considerably reduced due to various reasons.
- **Outcome:** The project ran into trouble within weeks of initiation.
  - The arrival of the tigers was followed by severe protests by villagers living on the fringes of the reserve. The villagers feared the big cats would endanger their livelihoods, lives and livestock.
  - Within months of the translocation, Mahavir was found dead due to poaching.
  - Sundari was tranquilised and shifted back to Madhya Pradesh.

- Subsequently, the project was suspended by NTCA.
- **Factors** that contributed to the likely failure of the project
  - Lack of confidence and trust building between the forest department and the villagers.
  - The translocation was done in haste. The field staff and tiger reserve management were not prepared.
  - The translocation was done in haste. The field staff and tiger reserve management were not prepared.
  - The local communities were not taken into confidence nor conveyed the benefits from tourism that tigers could bring them.
  - Protection was not up to the mark and the only undisturbed, prey rich habitat was already occupied by the old resident tigress causing Sundari to occupy human-dominated, disturbed areas.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following Tiger Reserves:

	Tiger Reserve	State
1.	Bandhavgarh Tiger Reserve	Rajasthan
2.	Satkosia Tiger Reserve	Odisha
3.	Kanha Tiger Reserve	Madhya Pradesh

How many of the above pairs are correctly matched?

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

Answer: (b) (2 and 3 only)

**OLIVE RIDLEY TURTLE**

**Why in News:** Hundreds of Olive Ridley turtles washed ashore dead on the Tamil Nadu coast leading to a high-level review meeting by the Tamil Nadu government.

**Key Details**

- **Olive Ridley Turtles and their Nesting Season:** Olive Ridley turtles, which form an essential part of the ecosystem in the ocean, arrive in batches for nesting on the beaches of Tamil Nadu during the breeding season (December to March) every year.
- **Mass Mortality along the East Coast:** However, this year, the shores along the East Coast from Chennai to Kanchipuram saw over 1,000 olive ridley turtles washing ashore dead. It is a major cause of concern.
- **Possible Cause of Death:** One possible cause of death is the nets used for squid and cuttlefish fishing. These nets, which extend over a kilometre and are weighted at the

bottom, can trap turtles, preventing them from surfacing for air, leading to suffocation.

**About Olive Ridley Turtles**

- **Distribution:** The Olive ridley turtles are the **smallest** and **most abundant** of all sea turtles found in the world, inhabiting **warm waters of the Pacific, Atlantic and Indian oceans.**
- **Arribada:** These turtles along with Kemps ridley turtles are best known for their **unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
- **Features:**
  - Growing to about 2 feet in length, and 50 kg in weight, the Olive ridley gets its name from its olive-coloured carapace, which is heart-shaped and rounded.
  - Males and females grow to the same size; however, females have a slightly more rounded carapace as compared to the male.
  - They are **carnivores** and feed mainly on jellyfish, shrimp, snails, crabs, molluscs and a variety of fish and their eggs.
  - These turtles spend their entire lives in the ocean and **migrate** thousands of kilometres between feeding and mating grounds in the course of a year.
  - Females return to the very same beach from where they first hatched, to lay their eggs.
- **Largest Mass Nesting Sites:** The coast of **Odisha** in India is the **largest mass nesting site** for the olive ridley, followed by the coasts of Mexico and Costa Rica.
- **IUCN Status:** Vulnerable

**Threats to Olive-Ridley Turtles**

- **Hunting and Poaching:** In several coastal areas across the world, one of the main sources of food is sea turtles. The hunting often takes place during peak nesting season.
- **Longline and Trawler:** Often sea turtles reside in the same zone as commercially valuable fishes and they are caught in the longline, trawls or gill nets.
- **Marine Debris:** Each year over a million marine animals die because of marine debris. 80% of this debris comes from land. Out of all marine creatures, sea turtles are the most vulnerable to marine pollution.
- **Artificial Lights:** Before industrialisation, nesting was easier for turtles as the beaches were quiet and dark which is an ideal requirement. Today, the lights from resorts, residences and hotels discourage nesting which results in resorting to either unsuitable zones or laying eggs in the oceans.
- **Climate Change:** The rise of temperature is directly impacting the nesting season - land temperature determines the gender and the warmer temperature will lead to the birth of female turtles which is a threat to genetic diversity; warmer sea temperature impacts the

food resources of sea turtles leading to starvation and untimely death.

**Solutions for Protecting the Turtles**

- **Education and Awareness:** Promoting education is a key strategy to prevent the hunting and poaching of sea turtles.
- **Modification of Fishing Gear:** Changing the size of hooks from a J-shape to a circle helps prevent turtles from getting caught.
- **Use of Turtle-Excluder Devices (TEDs):** Attaching TEDs to trawlers or gillnets allows sea turtles to escape through a trap door. TEDs work by utilizing the turtle’s weight to push open the door and exit the net.
- **Reducing Marine Debris:** Avoiding littering on beaches and following the 3Rs (Reduce, Reuse, Recycle) can help minimize marine pollution.
- **Turtle-Friendly Lighting:** Turning off lights on nesting beaches or using Turtle Safe Lighting, which is dimmer, helps hatchlings move safely towards the sea.
- **Habitat Conservation:** Planting vegetation along beaches improves nesting conditions for sea turtles.

**Conclusion**

The deaths of Olive Ridley turtles in Tamil Nadu highlight the urgent need for conservation. Protecting their nesting sites, reducing marine pollution, and promoting responsible fishing can help ensure their survival for future generations.

- **Distribution and habitat:**
  - Wide but fragmented distribution throughout montane grasslands and steppes of Central Asia.
  - China, Mongolia, Kazakhstan, Kyrgyzstan, Russia, Afghanistan, India, Iran, Pakistan, Nepal.
- **Species profile:**
  - Naturally **secretive**, it is rarely seen and little known.
  - **Short legs and dense fur** for a stocky appearance and insulation.
  - **Coat coloration and flat ears** set on the sides for supreme camouflage.
  - Characteristic **black spots on the forehead**.
- **Conservation status:**
  - **IUCN Red List:** Least Concern
  - **Indian Wildlife (Protection) Act, 1972:** Schedule I
  - **CITES:** Appendix II
- Pallas’s cat was once hunted for its fur, but is **legally protected since hunting was banned in December 1988.**



**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

- Q. Which of the following best describes the term Arribada, sometimes seen in news?
- (a) A tribal folk dance in Odisha.
  - (b) Wildlife festival in Andaman & Nicobar
  - (c) Mass nesting event of sea turtles
  - (d) Mass migration of tropical fishes towards the equator

Answer: (c)

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

- Q. With reference to India’s biodiversity, Otocolobus manul is?
- (a) Birds
  - (b) Primates
  - (c) Reptiles
  - (d) None of the above

Answer: (d)

**PALLAS’S CAT: SMALL GHOST OF THE MOUNTAIN**

**Why in News:** Recently, the first photographic evidence of the elusive Pallas’s cat (also known as manul) in Himachal Pradesh, India, was recorded during a snow leopard population survey.

**All about Pallas’s Cat**

- **Scientific name:** *Otocolobus manul*

**RED PANDA**

**Why in News:** Recently, Padmaja Naidu Himalayan Zoological Park (PNZP) in Darjeeling, West Bengal, received two male red pandas from Rotterdam Zoo, Netherlands, for conservation breeding purposes.

**Red Panda (aka Lesser Panda)**

- **Scientific name:** *Ailurus fulgens*.
- **Natural habitat:** Native to eastern Himalayan regions of India, China, Bhutan, Nepal, and Myanmar. It thrives best at 2,200-4,800 metres in mixed deciduous and conifer forests.

- State animal of **Sikkim**.
- **Conservation status:**
  - **IUCN Red List:** Endangered
  - **Indian Wildlife (Protection) Act, 1972:** Schedule I
  - **CITES:** Appendix I
- **Behaviour:** Red pandas are crepuscular, arboreal and solitary. They are **most active during the twilight hours** of early morning and evening (crepuscular), spending most of the day resting in trees (arboreal), conserving their energy.
- **Population:** According to the **World Wildlife Fund**, their population is **less than 10,000**.



### Padmaja Naidu Himalayan Zoological Park

- Established in **1958**.
- It is located in **Darjeeling, West Bengal**.
- PMZP hosts the country's most successful **conservative breeding programme for red pandas**.
- The planned conservation breeding programme began in 1986 as a **part of the Global Captive Breeding Masterplan**.

#### EXPECTED QUESTION FOR UPSC CSE

##### Prelims MCQ

Q. Consider the following statements regarding Padmaja Naidu Himalayan Zoological Park:

1. It is located in Sikkim.
2. It holds the country's most successful conservative breeding programme for Giant Pandas.

Which of the statements given above is/are correct?

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

Answer: (d)

## DAMS IN INDIA

**Why in News:** The Supreme Court said that the Union government was yet to wake up from its "slumber" and fully implement a nearly five-year-old law to prevent disasters related to dams and ensure their safe functioning

### Key Details

- A **three-judge Bench** said that the **Dam Safety Act of 2021** was **"existing on paper"** after the State of Kerala argued that "nothing has been done", including the constitution of a National Committee on Dam Safety.
- The court also highlighted the **need for the government to be transparent about the composition of the National Committee**, including the names of the members and their fields of expertise and qualifications.

### About Dams in India

- The **total number of large dams in India is 5,334**. About 447 large dams are under construction in India. In terms of number of dams, India ranks third after China and the United States.
- Maharashtra has the maximum number of large dams followed by Madhya Pradesh.

### Dam Safety in India

- The Government of India has taken several initiatives to improve the safety conditions of these dams in the country.
- **Dam Safety Act**
  - In order to address the dam safety issues holistically, the Union Government has enacted the Dam Safety Act in December 2021.
  - **New Framework:** The Act provides for an empowered institutional framework for dam safety both at the Centre and State and will also help in standardizing and improving dam safety practices across the country.
  - **Four tier mechanism:** The act provides for four tiers of institutional mechanism: establishment of National Committee on Dam Safety (NCDS) and National Dam Safety Authority (NDSA) at Centre level and establishment of State Committee on Dam Safety and the State Dam Safety Organization at State level.

### Other Initiatives Taken

- **DRIP:**
  - In order to improve the safety and operational performance of selected existing dams in the country, the Government of India is implementing the **Dam Rehabilitation and Improvement Project (DRIP)** with external funding.
  - Under the World Bank funded DRIP Phase-I programme, which was implemented during April 2012 to March 2021, 223 existing dams located in 7 States were comprehensively audited and rehabilitated at a cost of Rs. 2,567 crores.
  - After completion of DRIP Phase I programme, Government of India has taken up DRIP Phase-II & III.



### Emerging challenge of Dam Safety

- **Aging Dams:** With the increasing age of most of the major dams, the challenge of dam maintenance and management is at an all time high. There are 227 large dams in India which are more than 100 years old.
- **Structural Issues:** Many dams have varied structural deficiencies and shortcomings in operation and monitoring facilities, while few do not meet the present design standard- both structurally and hydrologically.
- **Lack of Institutional capacities:** Most of the States have been failing to provide sufficient budgets for maintenance and repair of the dam.

- **Loss of life and livelihood:** Weakening dams pose a safety hazard to human life and property downstream.

### Way Forward

- **Assessment of Risk:** There is a need to classify dams based on hazard risk.
- **Adherence to Safety Margins:** Designing and constructing dams that adhere to safety margins.
- **Periodic Assessments:** Institute emergency flood warning systems, and undertake safety reviews and period risk assessment studies.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following pairs of dam and rivers matched:

Dam	-	River
1. Tungabhadra	-	Krishna
2. Ukai	-	Tapi
3. Rana Pratap sagar	-	Chambal
4. Tehri	-	Alaknanda

How many of the above pairs are correctly matched?

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

Answer: (b) (2 and 3 only)

**BHOPAL GAS TRAGEDY**

**Why in News:** Indore Mayor has demanded that the plan to shift 337 tonnes of toxic waste from the Union Carbide factory in Bhopal to be dumped in Pithampur (in Dhar district) should be reconsidered.

**Background of the Issue**

- This is the toxic waste from the now-defunct Union Carbide factory in Bhopal, which was involved in the **infamous 1984 Bhopal gas tragedy**.
- This action was taken after the Madhya Pradesh High Court criticized the authorities for not taking action to clear the toxic site in Bhopal, even though the court had given multiple orders to do so in the past.

**Legal Framework for Toxic Waste Management**

India has enacted several laws to regulate the generation, storage, transportation, and disposal of toxic waste.

**The Environment (Protection) Act, 1986:**

- Umbrella legislation for the protection of the environment.
- Authorizes the central government to regulate hazardous waste management.

**Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016:**

- Regulates hazardous waste generation, storage, recycling, and disposal.
- Controls import/export of hazardous waste.

**Biomedical Waste Management Rules, 2016:**

- Mandates segregation and safe disposal of biomedical waste.
- Promotes the use of incinerators and autoclaves.

**E-Waste (Management) Rules, 2016:**

- Introduced the concept of **Extended Producer Responsibility (EPR)**.
- Encourages manufacturers to collect and recycle e-waste.

**The Public Liability Insurance Act, 1991:**

- Provides immediate relief to victims of hazardous accidents.

**Bhopal gas tragedy (The Night of December 2, 1984)**

- **What happened?**
  - **Methyl Isocyanate (MIC)**, a highly toxic gas, leaked from a pesticide plant owned by Union Carbide India Ltd. (UCIL), a subsidiary of Union Carbide Corporation (UCC), a U.S.-based company.
  - Thousands of people living near the factory were exposed to the gas, leading to severe health effects like **breathing problems, burning eyes, and unconsciousness**.
- **Immediate impact:**
  - Around **3,000 people** died within the first few days, and many more suffered long-term health issues.
  - Women's reproductive health was affected, and children born later faced **congenital disabilities**.
- **Environmental damage:**
  - Water sources near the factory became polluted and unsafe, leading to long-term environmental harm.

**The Aftermath**

- **Global significance:**
  - The UN's **International Labour Organization (ILO)** identified it as one of the world's major industrial disasters, affecting over **600,000 people**.
- **Causes of the disaster:**
  - **Negligence:** Safety protocols were inadequate, and workers were not trained about the dangers of MIC.
  - **Experts like Dr. S. Varadarajan** stated that the gas was handled carelessly, without proper safety measures or emergency plans.
- **Legal and legislative changes:** Following laws were a direct result of lessons learned from the disaster:
  - **Environment (Protection) Act, 1986:** Empowered the central government to regulate industries for environmental and public safety.
  - **Public Liability Insurance Act, 1991:** Provided financial relief to those affected by hazardous substances.

**The Demand for Compensation**

- **Initial settlement:**
  - In 1989, the Indian government and Union Carbide reached an **out-of-court settlement** of \$470 million for victims. The **Supreme Court upheld** this settlement.
  - Critics argue this amount was insufficient for the scale of the tragedy.

- **Problems with compensation distribution:**
  - The government faced delays in distributing the money, causing protests from survivors.
- **Warren Anderson's case:**
  - Anderson, the chairman of Union Carbide, was arrested when he visited India but was released on bail. He later ignored summons which led to the issuance of a non-bailable warrant in 1989.
  - Anderson never returned to India and died in 2014.

### The 2010 Petition for Additional Compensation

- **What is it?**
  - In 2010, the Indian government filed a **curative petition** seeking additional compensation from Dow Jones, which acquired Union Carbide in 1999.
  - The government argued that the original \$470 million was insufficient and sought over **ten times that amount**.
- **Dow Jones's stance:**
  - The company denies responsibility, claiming it had no connection to the disaster.
  - It opposes reopening the case, arguing that the earlier settlement is legally binding.
- **Legal challenges:**
  - The Supreme Court has previously ruled in favor of finalizing the 1989 settlement, making it hard to reopen the case now.
  - Critics, including legal experts, say enforcing additional compensation after such a long delay would require a significant effort.

### Current Government Actions

- **Attorney General's statement:**
  - In 2022, the Attorney General told the Supreme Court that international cases show instances where earlier settlements were reconsidered.
  - However, the delay since the 1989 judgment makes achieving any change challenging.
- **Potential impact on India's reputation:**
  - Dow argues that reopening the case could harm India's image as a country that does not uphold legal agreements, potentially discouraging foreign investment.

The Bhopal Gas Tragedy remains a landmark case of industrial negligence with catastrophic human and environmental consequences. Efforts to seek additional compensation from Dow Jones face legal and procedural challenges, as decades have passed since the initial settlement. Survivors and activists continue to demand accountability, arguing the original compensation was grossly inadequate for the long-term damage caused.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

- Q. Which of the following was a direct result of the Bhopal Gas Tragedy?
- Strengthening of labor laws in India
  - The introduction of the Public Liability Insurance Act of 1991
  - The establishment of the National Disaster Management Authority (NDMA)
  - Increased foreign investment in the Indian chemical industry

(b) :Answer

#### Descriptive Question

- Q. Analyze the causes and consequences of the Bhopal gas tragedy. How did the Bhopal Gas Tragedy shape industrial safety laws and environmental policy in India? [150 words] [10 marks]

## PERSISTING PERIL: ILLEGAL RAT-HOLE MINING IN NORTHEAST INDIA

**Why in News:** A recent incident in Assam's Dima Hasao district led to the recovery of four workers' bodies from a flooded rat-hole coal mine. **This tragedy indicates that illegal rat-hole mining is still being practiced despite being officially banned.**

#### Key Details

- The **National Green Tribunal (NGT)** banned rat-hole mining in Meghalaya in April 2014. This decision was influenced by an earlier disaster in July 2012, where 30 coal miners were trapped in a mine in South Garo Hills, Meghalaya.
- A report by a **monitoring committee led by Justice B.P. Katakey (Set by the NGT)** found that the illegal mining of coal continues due to **strong demand from industries such as cement manufacturing and thermal power plants in the northeastern region**. This demand fuels and sustains the illegal practice, making enforcement of the ban difficult.
- In December 2018, 15 miners were trapped in a rat-hole mine in Meghalaya's East Jaintia Hills. At that time, **Supreme Court Justice A.K. Sikri** questioned the role of officials in allowing such illegal activities to continue.
  - The court indicated that illegal mining could not happen without the tacit support or negligence of authorities.

### What is Rat-Hole Mining?

It is an **illegal and hazardous** method of coal extraction, mainly practiced in Meghalaya. It involves digging **narrow, horizontal tunnels** (resembling rat burrows), barely large enough for a single miner. Workers use basic tools like **pickaxes and shovels** in **cramped, poorly ventilated tunnels**, making the process extremely **dangerous and labor-intensive**.

#### Types of Rat-Hole Mining:

- **Side-Cutting Procedure:** Narrow tunnels are dug **into hill slopes** to extract thin coal seams.
- **Box-Cutting:** A **rectangular pit** is created first, followed by a **vertical shaft** and then **horizontal tunnels** for coal extraction.

**Geographical Spread:** Predominantly found in Meghalaya but also reported in other **northeastern states** with **thin coal seams** unsuitable for large-scale mining.

#### Causes of Rat-Hole Mining:

- **Poverty:** Local tribal communities, lacking livelihood options, engage in this mining for **quick income**, despite the risks.
- **Land Ownership Issues:** **Ambiguous land titles** prevent legal mining, allowing illegal operators to exploit loopholes.
- **Coal Demand:**
  - **High demand** for coal, both **legal and illegal**, sustains this practice.
  - **Middlemen and illegal traders** create a market, endangering miners' lives.

### Supreme Court's 2019 Judgment on Meghalaya's Appeal Against the Ban

- In July 2019, the Supreme Court reviewed an appeal by the Meghalaya government challenging the ban on rat-hole mining.
- The court agreed with the NGT's decision, stating that illegal and unscientific mining is harmful. **It does not benefit local communities, the workers involved, or the environment.**
- The Supreme Court described rat-hole mining as a **"primitive" method** of extraction. This means it is outdated, unsafe, and environmentally destructive.
- The court's judgment reinforced the need to replace such hazardous methods with modern, regulated mining practices.

### Mining Rights vs. Environmental Laws

The court acknowledged that private landowners in Meghalaya have rights over minerals found on their land. However, this does not mean they can carry out mining in an unregulated or unsafe manner. **The judgment clarified that all mining activities must comply with national laws and environmental regulations.**

The court emphasized that Meghalaya's mining policies must align with key legal frameworks, including:

- **The Mines and Minerals (Development and Regulation) Act, 1957** – Governs the mining sector and mineral rights.

- **The Environment (Protection) Act, 1986** – Protects the environment from harmful industrial activities, including mining.
- **The Mineral Concession Rules, 1960** – Regulates how mining leases and concessions are granted.

**Note: Even if landowners wish to mine on their land, they must follow these legal guidelines.**

### About National Green Tribunal (NGT)

It was established in 2010 under the **National Green Tribunal Act, 2010** to handle cases related to environmental protection and conservation of forests and natural resources. **It functions as a specialized judicial body with expertise in environmental law and policy.**

Unlike regular courts, NGT includes **expert members** with technical knowledge, allowing for better understanding and resolution of complex environmental issues.

#### Procedure Followed

The **Tribunal does not follow the Code of Civil Procedure (CPC), 1908**, which is used by traditional courts in India.

Instead, it functions based on **principles of natural justice**, which means:

- It ensures fairness and impartiality in hearings.
- It allows flexibility in legal procedures to facilitate quicker decisions.
- It ensures that all affected parties get an opportunity to be heard.

One of the key mandates of the NGT is to ensure that environmental cases are resolved **within 6 months** of filing. This time-bound approach is crucial because **delays in environmental cases** can lead to **irreversible ecological damage**. The efficiency of the NGT helps in **faster implementation of environmental laws** and ensures that justice is not delayed.

#### Locations of NGT Benches

The **Principal Bench** (main office) of the NGT is in **New Delhi**. In addition, there are **four regional benches** in **Bhopal, Pune, Kolkata and Chennai**.

#### Composition of the Tribunal

The NGT consists of **three types of members** to ensure a balance between legal and technical expertise:

- **Chairperson:** He/She is a **retired Supreme Court judge**. The Chairperson provides judicial leadership and ensures the effective functioning of the tribunal.
- **Judicial Members:** They are **retired High Court judges**. They bring legal expertise to the Tribunal and ensure that the principles of law are followed in environmental cases.
- **Expert Members:** They are professionals with **at least 15 years of experience** in fields related to the **environment, forestry, ecology, or environmental policy**. They provide technical and scientific inputs for decision-making in complex environmental cases.

## Environmental Restoration Measures

- To address environmental damage caused by illegal mining, the court upheld an earlier NGT directive requiring the Meghalaya government to deposit ₹100 crores.
- This amount was taken from the **Meghalaya Environment Protection and Restoration Fund** and given to the **Central Pollution Control Board (CPCB)**. The funds were meant for restoring the environment in mining-affected areas.

## Conclusion

While legal frameworks such as the Mines and Minerals (Development and Regulation) Act, 1957, and the Environment (Protection) Act, 1986, exist to regulate mining, their implementation remains weak. Stronger monitoring, stricter accountability for officials, and alternative livelihood opportunities for miners are essential to curb illegal mining and prevent further loss of life.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

- Q. What is rat-hole mining, and why does it persist in Northeast India despite its environmental and social consequences? Critically analyze the challenges associated with regulating rat-hole mining and suggest measures to mitigate its impact on the environment and local communities. [250 words] [15 marks]

## STAMPEDES AND CROWD MANAGEMENT

**Why in News:** Recently, the Andhra Pradesh government held officials accountable for the tragic stampede in Tirupati which claimed the lives of six devotees.

### More about the Issue

Chief Minister of Andhra Pradesh acknowledged there were **significant gaps in coordination** among the officials involved, which contributed to the mishap. He pointed out that it was **essential for the administration to be prepared** for the large crowds that regularly visit the temple, particularly during peak times, to avoid such incidents.

### Stampede

A **stampede** refers to a sudden, uncontrolled rush or charge of people or animals, often caused by panic or fear. In the case of people, it usually happens when a large group of individuals pushes or rushes in a particular direction in a chaotic manner, often leading to injuries or even fatalities. **Stampedes typically occur in crowded situations, like at festivals, events, or places of worship, where the crowd's movement becomes unmanageable and dangerous.**

### Causes of Death in a Stampede

- Traumatic asphyxia
- Myocardial infarction (heart attack)
- Crushing injuries to internal organs
- Head injuries
- Neck compression

### Maha Kumbh stampede

- The **Maha Kumbh stampede** in Prayagraj on **Mauni Amavasya** led to the death of **30 people** and injuries to **at least 60 others**. The tragedy occurred when a **barricade collapsed** amid a **massive crowd surge** on **Akhara Marg**, causing panic and a stampede. The **police and administration** quickly conducted **rescue operations**.
- The **Uttar Pradesh government** set up a **three-member judicial inquiry commission**, led by **Justice Harsh Kumar (retd.)**, to investigate the cause of the incident and suggest **preventive measures** for the future.

### Types of Stampedes

#### Unidirectional Stampede:

- **Unidirectional** means “moving in one direction.”
- This type of stampede happens when a crowd is moving in the same direction, and something suddenly changes that affects how they move. This change could be:
  - A **positive change** (e.g., something that excites the crowd and causes them to push forward more aggressively).
  - A **negative change** (e.g., a sudden obstacle or barrier that stops or slows the crowd, causing them to panic and push against each other).

Essentially, in **unidirectional stampedes**, the crowd is generally moving in one direction, but an unexpected event (such as an obstacle or a sudden surge in energy) causes the crowd to lose control, leading to chaos and potentially dangerous situations.

#### Turbulent Stampede:

- **Turbulent** refers to something that is **chaotic or disorderly**.
- A **turbulent stampede** occurs in a situation where there are multiple factors contributing to crowd disorder, such as:
  - **Uncontrolled crowds:** When a crowd is not being managed or directed properly, people may move unpredictably.
  - **Induced panic:** When people get scared (often due to a rumor, a loud noise, or a perceived threat), they panic and push others around them, making the situation worse.
  - **Crowds merging from different directions:** If people are coming from different directions and meet at a single point (like an entrance or narrow space), it can cause confusion and forceful pushing, increasing the risk of a stampede.

## Crowd Management

- Crowd management refers to the structured process of planning, organizing, and overseeing large gatherings to ensure safety and order.
- This management approach requires anticipating potential risks and preparing strategies in advance to minimize and mitigate any dangers that may arise, particularly in the event of an emergency or unforeseen situation.

### NDMA Guidelines for Crowd Management in India

#### 1. Capacity Planning

- Implement an efficient system for counting and monitoring visitors at designated entry points to regulate crowd flow.
- Ensure that all visitors pass through specified physical or virtual checkpoints for better tracking and management.

#### 2. Crowd Control

Effective crowd control focuses on balancing demand and supply by:

- Controlling crowd inflow to prevent overcrowding.
- Regulating movement within the venue for smooth navigation.
- Managing crowd outflow efficiently, if necessary.

#### 3. Hazard, Risk, and Vulnerability Analysis (HRVA)

- Conduct HRVA at mass gathering locations, considering pre-event scenarios, to prepare for response, recovery, and mitigation.
- Utilize HRVA insights to develop a decision-support system that enhances rescue and relief efficiency during crowd-related incidents.
- Identify potential threats and causes of disasters using existing data.
- Assess risks after identifying these threats to enhance planning and preparedness.

#### 4. Failure Mode and Effect Analysis (FMEA)

- NDMA recommends that event organizers conduct FMEA, which involves evaluating hazards based on **severity, frequency, and difficulty of detection** on a 1-10 scale to determine an overall **Risk Priority Number (RPN)**.

#### 5. Developing a Course of Action

- For each identified risk or gap, planners should formulate a **course of action**.
- Assess the resources required for each option and compare them with available resources to ensure effective implementation.

### Role of Technology in Crowd Management

- **AI-Powered Monitoring and Predictive Analytics**
  - **Real-Time Occupancy Tracking:** AI-powered sensors

and cameras enable venues to monitor crowd density and movement patterns in real-time, offering a live feed of venue occupancy. This allows for proactive adjustments to seating, entry, or even crowd flow, ensuring a comfortable experience.

- **Dynamic Space Management:** AI systems can also analyze customer behavior, helping venues rearrange seating or optimize layout during busy hours, ensuring efficient use of space and reduced crowd density.
- **Mobile Apps for Real-Time Updates and Reservations**
  - **Advanced Booking Systems:** Mobile apps with integrated booking systems give venues the ability to offer timed reservations, helping to stagger guest arrivals and ensure a steady flow of traffic. Guests benefit from shorter wait times and an elevated sense of convenience.
  - **Feedback Loops:** Many mobile apps now allow guests to provide real-time feedback on crowd levels or service, which managers can monitor and respond to instantly, enhancing customer engagement and trust.
- **Enhanced Security Through Smart Surveillance**
  - **Behavioural Analysis for Safety:** With AI-driven surveillance, venues can track crowd behaviour and detect any unusual or potentially risky activities. Behavioural analysis enables rapid response to emerging security concerns, helping to maintain a safe atmosphere.
  - **Automated Alerts and Escalations:** AI-based surveillance tools can set automatic alerts for specific crowd thresholds or detect anomalies, such as bottlenecks, in real time. This proactive monitoring ensures issues are addressed before they escalate, promoting safety and comfort for all guests.

### Way Forward: Recommendations for Effective Crowd Management and Preventing Stampedes

- **Stampede Risk-Reduction Framework:** Having the right framework for planning mass gatherings is crucial, as it involves an inter-agency, multi-disciplinary approach that relies on identifying potential hazards to design and implement appropriate mitigation measures, as noted by Illyas and others.
- **Better Design of Spaces:** Improving the physical organization and design of spaces is essential for effective crowd management.
- **Live Surveillance of the Crowd:** The live surveillance of the crowd can help organizers monitor crowd density, bottlenecks, pressure buildup, and identify the source of disturbances which can help in better crowd management.
- **Inter-agency Communication:** Effective communication among organizers and the crowd is essential. It is crucial for organizers, who often represent different bodies such as temple authorities, local administration officials, and police, to communicate clearly.

## EXPECTED QUESTION FOR UPSC CSE

### Descriptive Question

Q. Being the world's most populated country and having over-crowded cities, India is not a stranger to mass gatherings and stampedes. Discuss the factors leading to stampedes. [10 marks] [150 words]

## NAGAPATTINAM AND 2004 TSUNAMI

**Why in News:** On the 20th anniversary of the Indian Ocean tsunami, revisiting Nagapattinam's experience reflects on the progress made, and also the gaps, in shaping response and strategy and importance of ensuring long-term resilience.

### Key Details

- Among the hardest-hit areas of the Tsunami of December 26, 2004 was Nagapattinam, Tamil Nadu, it also marked a turning point, becoming a case study in how tragedy can inspire systemic reforms and lay the groundwork for more resilient societies.
- When the tsunami struck the Indian coast, Nagapattinam's 187.9-kilometre-long coastline, dotted with 73 habitations, bore the brunt.

### Case study: How Nagapattinam responded

- **Structured Response:** Rescue operations were spearheaded by self-contained area-specific teams, led by experienced officers drawn from unaffected districts and supported by personnel from critical departments such as revenue, local bodies, health, police, public works, and fisheries.
- **Due care of hygiene:** The quick and dignified disposal of bodies was prioritised to prevent disease outbreaks, with coastal areas disinfected using microbial inoculants and chemicals.
- **Emergency Infrastructure:** Infrastructure restoration efforts focused on re-establishing electricity, water supply, and road connectivity. Over 13,000 temporary shelters were constructed across 50 locations to house displaced families, providing essential shelter and safety.
- **Focus on Livelihood restoration:**
  - Livelihoods were revived and economic growth propelled by empowering coastal communities with strengthened infrastructure, including modern ports, fishing harbours, and improved agricultural practices.
  - Alternative livelihoods were fostered by supporting women's self-help groups and improving market access, while educational facilities were upgraded to serve as disaster-safe environments.
- **Building long-term resilience:**
  - Infrastructure upgrades, such as strengthened health-

care facilities, schools, and transportation networks, enhanced the region's preparedness for future disasters.

- Coastal defence measures, including sea walls, shelter belt plantations, and multi-hazard shelters, provided vital protection for vulnerable coastal areas.
- Additionally, the growing relevance of risk insurance, extending beyond crops to assets such as housing, marked a step toward comprehensive disaster risk management, though much progress remains to be made.

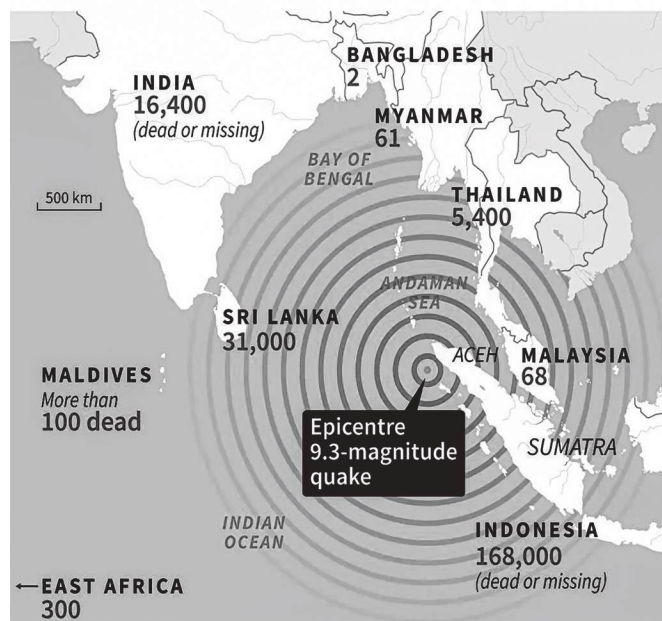
### About the 2004 Ocean Earthquake and Tsunami

#### Global Comparisons (Lessons for India)

- **Haiti:** Lack of insurance and weak disaster management delayed recovery from the 2010 earthquake.
- **Chile:** Effective disaster management plans and comprehensive insurance led to faster recovery.
- **Japan:** Pre-emptive investments in risk reduction, early warning systems, and strict building codes minimize disaster impacts.
- **Takeaway for India:** India must adopt proactive strategies, enforce building codes, and improve insurance mechanisms.

## The 2004 Indian Ocean tsunami

A massive earthquake on December 26, 2004 set off a series of tsunamis that tore across the Indian Ocean, killing more than 220,000 people



- On 26 December 2004, a major earthquake with a magnitude of 9.3 struck with an epicentre off the west coast of Aceh in northern Sumatra, Indonesia.
- The undersea megathrust earthquake, known by the scientific community as the Sumatra–Andaman earthquake, was caused by a rupture along the fault between the Burma plate and the Indian plate.

- A massive tsunami with waves up to 30 m (100 ft) high, devastated communities along the surrounding coasts of the Indian Ocean, killing an estimated 227,898 people in 14 countries.
- It is the deadliest natural disaster of the 21st century, one of the deadliest natural disasters in recorded history, and the worst tsunami disaster in history.

### About Tsunami

- It is a series of waves in a water body caused by the displacement of a large volume of water, generally in an ocean or a large lake.
- **Cause of Tsunami:** Earthquakes, volcanic eruptions and underwater explosions (including detonations, landslides, glacier calvings, meteorite impacts and other disturbances) above or below water all have the potential to generate a tsunami.
- **Characteristics:**
  - Tsunamis have a small wave height offshore, and a very long wavelength (often hundreds of kilometres long, whereas normal ocean waves have a wavelength of only 30 or 40 metres)
  - As the tsunami approaches the coast and the waters become shallow, wave shoaling compresses the wave and its speed decreases below 80 kilometres per hour (50 mph). Its wavelength diminishes to less than 20 kilometres (12 mi) and its amplitude grows enormously.

### Impacts of Tsunami

- **Loss to Infrastructure:** Tsunami waves wreck everything in their path: boats, houses, bridges, vehicles, trees, telephone lines, power lines, and just about everything else.
- **Loss to Human Lives:** The cost of human life is one of the most significant and destructive consequences of a tsunami since surviving a tsunami is virtually impossible. Tsunamis claim the lives of hundreds of thousands of people.
- **Environmental loss:**
  - The landscape is changed by a tsunami. It uproots trees and plants, as well as animal habitats including bird nesting sites.
  - Drowning kills land animals, and waste kills sea animals when toxic substances are washed into the sea, poisoning marine life.
- **Health and Diseases**
  - In tsunami-affected areas, the disease could spread due to flooding and polluted drinking water. When water is stagnant and polluted, illnesses like malaria will spread.

- Since it is difficult for people to remain healthy and diseases to be treated in these environments, infections and illnesses will spread rapidly, resulting in more deaths.

### PRELIMS SPECIAL

#### Initiatives taken by Government against Tsunami

- **Early Warning System:** GoI has established the state-of-art India Tsunami Early Warning Centre (ITEWC) (operational since 2007) at the Indian National Centre for Ocean Information Services (INCOIS) as an autonomous body under the Ministry of Earth Sciences.
- INCOIS has extended the **GIS-based 3D protocol** on Tsunami warning to all vulnerable areas in the country with new methodologies and improved warning procedures.
- Strengthening **Tsunami Research** has been a key focus of GoI since 2004.
- **National Disaster Management Guidelines** for management of Tsunami, 2010
- Regular Mock Drills are conducted by NDMA, INCOIS and Ministry of Home Affairs
- Awareness generation programs in coastal area is also conducted regularly since 2004.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

- Q. Explain the phenomena of Tsunami. How did the Indian Ocean 2004 Tsunami change India's response and mitigation strategies. [15 marks, 250 words]

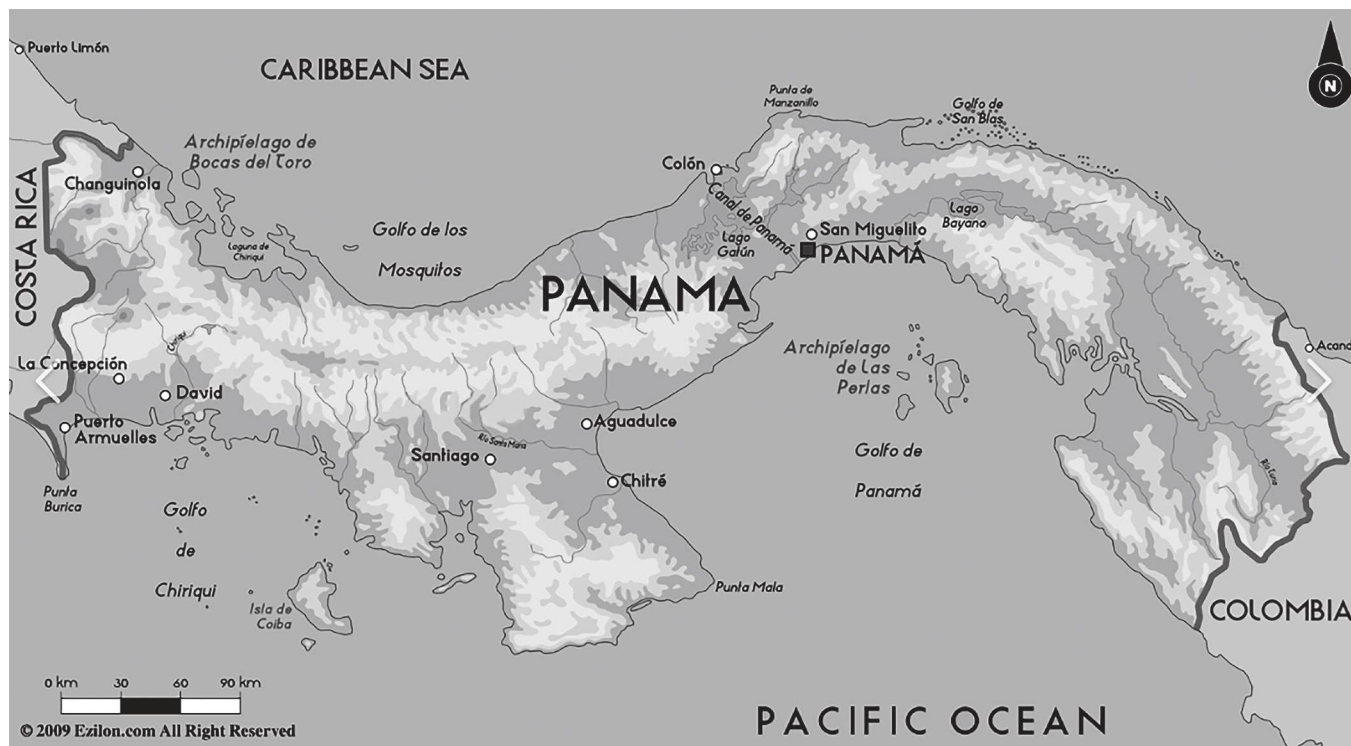
## PANAMA CANAL

**Why in News:** After winning the U.S. presidential election, Donald Trump has made **bold and controversial statements**, including:

- **Plans to annex (take control of) Canada and Greenland** – The U.S. has historically been interested in these regions.
- **Demanding control over the Panama Canal** – This is a **new claim** by Mr. Trump and has caused a major controversy.

#### What is the Panama Canal and Why is it Important?

- The **Panama Canal** is an **82-km-long waterway** that connects the **Pacific Ocean** and the **Atlantic Ocean**.
- It helps **ships avoid a long and difficult journey** around the **southern tip of South America (Cape Horn)**.
- This **saves around 13,000 km of travel distance** and **many days of journey**.
- More than **14,000 ships** pass through the canal **every year**.
- The **U.S. is the biggest user** of the canal, with **74% of the ships** being American. **China** is the **second biggest user**, with **21% of the ships**.



### Trump's statement

- Trump **complained about rising shipping rates**, claiming that the U.S. is being “ripped off”.
- He said that if **Panama does not follow the original agreement properly**, then the U.S. will demand the canal back.
- He also expressed **concern about China's growing influence** in the region.
- On his social media platform, **Truth Social**, he posted an image of the canal with the caption “**Welcome to the United States Canal**”.

### Panama's Strong Response

- Panama rejected Trump's statement, saying that every part of the Panama Canal belongs to Panama and will always belong to Panama. **Panama's President stated that shipping rates are set based on economic factors, not randomly.**
- Many Panamanians protested outside the U.S. embassy, chanting “**Trump, animal, leave the canal alone**” and even burning his image.

### History of the Panama Canal

- **France** started building the canal in 1880, led by **Ferdinand de Lesseps** (who also built the Suez Canal).
- However, **France failed due to engineering challenges and diseases** like malaria and yellow fever.
- **The U.S. took over the project**, but **Colombia (which controlled Panama at that time) refused to allow it.**

- In 1903, the U.S. helped Panama gain independence from Colombia in exchange for control over a 16-km wide strip of land to build the canal.
- **Note:** During World War II, the Panama Canal was critical for the U.S. and its allies, allowing them to move ships quickly between the Atlantic and Pacific Oceans.

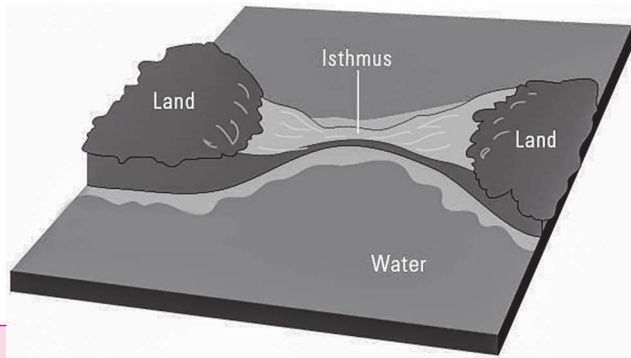
### U.S.-Panama Disputes Over Ownership

- **Ownership of the canal** became a **disputed issue** between the U.S. and Panama shortly after it opened.
- In 1964, this dispute led to **violence**, resulting in the deaths of 28 people.
- In 1977, U.S. President **Jimmy Carter** and Panama's military leader **Omar Torrijos** signed **two key treaties**:
  1. **The Permanent Neutrality Treaty:** Gave the U.S. the right to ensure that the canal remained open and free for shipping but **did not allow the U.S. to interfere in Panama's internal affairs.**
  2. **The Panama Canal Treaty:** This treaty **ensured the U.S. would hand over control of the canal to Panama by December 31, 1999.**

#### PRELIMS SPECIAL

An **isthmus** is a **narrow strip of land** that connects two larger landmasses and is usually surrounded by water on both sides. It acts as a **natural bridge** between two bodies of water, such as seas or oceans.

For example, the **Isthmus of Panama** connects **North America** with **South America** and separates the **Pacific Ocean** from the **Atlantic Ocean**, making it the location of the **Panama Canal**.



**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Which of the following statements about the Panama Canal is/are correct?

1. Panama Canal is an 82-km-long strategic waterway that connects the Pacific and Indian Oceans.
2. It is currently under the joint American–Panamanian control.

Select the correct answer using the code given below:

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

Answer: (d)

**POLAR VORTEX**

**Why in News:** A massive winter storm swept across the United States, bringing heavy snow, freezing rain, and dangerous travel conditions to millions. The extreme weather has been caused by the expansion of the polar vortex southwards.

**Key Details**

- The US, parts of Europe, and Asia experience chilly winds when the polar vortex at the North Pole weakens travel from its usual position.
- As the polar vortex system weakens, some of the cold, arctic air can break off and migrate south, bringing plenty of cold air with it.

**Polar Vortex**

- The polar vortex is a **large area of low-pressure and cold air** surrounding both of the Earth’s poles.
- It always exists near the poles but **weakens in summer and strengthens in winter**.
- The term vortex refers to the **counter-clockwise** flow of air that helps keep the colder air near the Poles.
- Many times during winter in the northern hemisphere, the polar vortex will expand, sending cold air southward with the jet stream.

- This occurs fairly regularly during wintertime and is often associated with large outbreaks of Arctic air in the United States.

**Types of Polar Vortex**

- There are two types of polar vortex: tropospheric and stratospheric.
- **Tropospheric Polar Vortex:** The tropospheric polar vortex occurs at the lowest layer of the atmosphere. It **extends from the surface up to about 10 km to 15 km**.
- **Stratospheric Polar Vortex:** The stratospheric polar vortex occurs at around 15 km to 50 km high.
- Unlike the tropospheric polar vortex, the stratospheric polar vortex disappears during the summer and is the strongest during the autumn.

**Impacts of Polar Vortex**

- **Strong Polar Vortex:** It keeps the cold air concentrated around the Arctic, leading to milder winters in many parts of North America, Europe, and Asia.
- **Weakened Polar Vortex**
  - **Extreme Cold Outbreaks:** The most significant impact is the southward spill of frigid Arctic air. This can cause dramatic temperature drops and prolonged periods of extreme cold.
  - **Disrupted Jet Stream:** A weaker polar vortex can cause the jet stream (a fast-flowing air current in the atmosphere) to become wavier. This can lead to unusual weather patterns.
- **Impact on India:** A weakened polar vortex can lead to disturbances in the west, bringing heavy snowfall to the western Himalayas and cooler temperatures to northern India.

**Polar Vortex and Climate Change**

- Polar vortex tends not to be as strong due to global warming because the planet isn’t warming uniformly.
- Poles are getting warmer at a faster rate than the rest of the Earth.
- The polar vortex and jet stream are becoming weaker. Warmer temperatures make it easier for the polar vortex and jet stream to get disrupted.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. When the polar vortex weakens, it can cause:

- (a) Milder winters in North America and Europe
- (b) Outbreaks of extremely cold air into lower latitudes
- (c) Increased rainfall in tropical regions
- (d) A strengthening of the equatorial jet stream

Answer: (b)

## DECCAN VOLCANISM AND TROPICAL FLORA

**Why in News:** According to a study by Birbal Sahni Institute of Palaeosciences (BSIP), an autonomous institute of the Department of Science and Technology Deccan Volcanism did not have much negative impact on tropical flora.

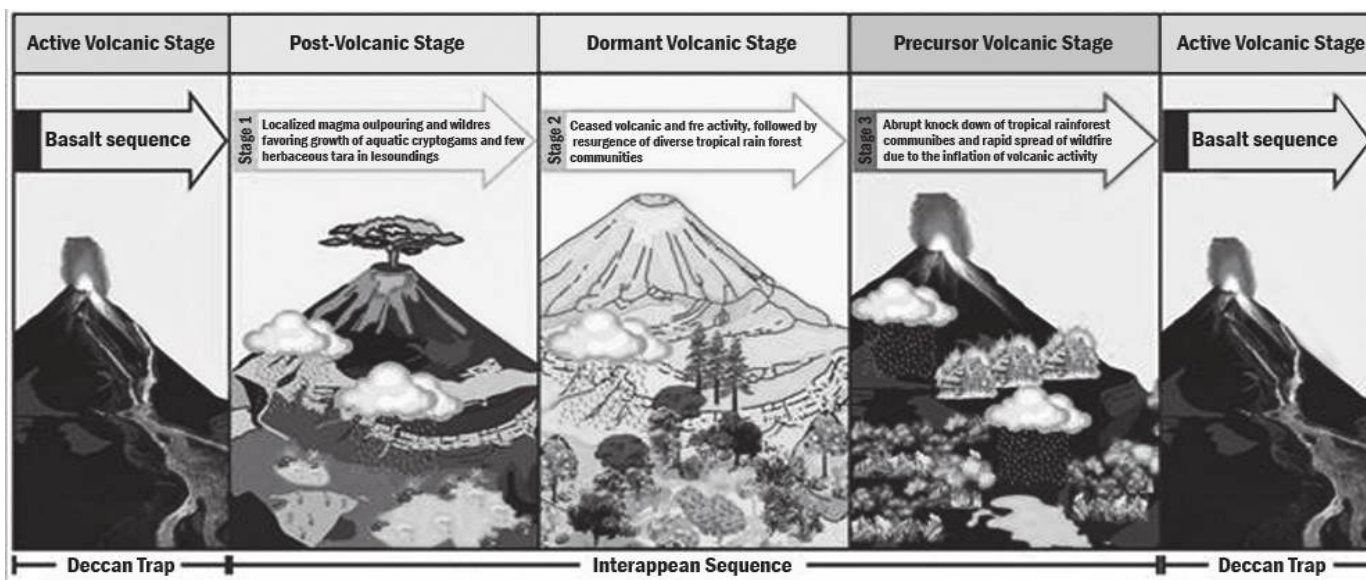
### Key Details from the Study

- Deccan Volcanism indirectly had a positive impact on the **development of hyper-diverse tropical flora by wiping off the large faunal community of dinosaurs** along with gymnosperms and by providing nascent, undisturbed, barren yet fertile habitats within congenial warm and humid climate state ideal for angiosperms to grow and evolve.
- As the epicentre of Deccan Volcanism, the Indian Plate provides an ideal archetype for identifying any associated floral turnover, if at all, during this time.
- Despite highly devastating consequences for terrestrial faunas (dinosaurs, in particular), the Deccan Volcanism **only caused regional and short-term impacts on the flora.**

- Instead, it promoted diversification and expansion of angiosperms within diverse habitats on the Indian Plate.

### Deccan Volcanism and Tropical Flora

- **About Deccan Volcanism:** Deccan Volcanism was a major event of volcanic eruptions which occurred ~66 million years ago and led to mass extinctions of fauna. This massive volcanic activity took place in the Deccan Plateau in west-central India.
- **K-Pg mass extinction:** The Deccan volcanic eruptions continued for several hundred thousand years before and beyond the Cretaceous-Paleogene (K-Pg) boundary, suggesting it was one of the triggering agents for the K-Pg mass extinction that culminated ammonoid (invertebrate cephalopods) and dinosaur dynasties on the global scale.
- **Impact on Tropical Rainforests:** Excessive warm and humid climate during the dormant phases of Deccan Volcanism **instituted the rapid development and diversification** in the tropical rainforest community.
- **Release of Greenhouse gases:** Deccan Volcanism released toxic greenhouse gasses into the environment, causing the K-Pg mass extinction due to rise in global temperatures. However, the tropical flora recovered swiftly on a sub-millennial scale, indicating higher resilience of tropical flora to climatic stresses.



### Deccan Traps

- The Deccan Traps are the **result of the Deccan Volcanism** and consist of thick sequences of basaltic lava flows.
- These lava flows are characterized by their vast extent and the sheer volume of volcanic material.
- The Deccan Traps are **one of the largest volcanic features on Earth and are a classic example of a large igneous province (LIP).**

### Tropical Vegetation

- Tropical Flora and Vegetation refer to the plant life and

ecosystems found in tropical regions, which are located near the equator between the Tropic of Cancer (23.5°N) and the Tropic of Capricorn (23.5°S).

- Tropical regions are characterised by warm temperatures year-round, high humidity, and abundant rainfall, which create ideal conditions for diverse and lush vegetation.
- Key Characteristics of Tropical Flora and Vegetation
  - High Biodiversity
  - Evergreen Forests
  - Layered Structure: Emergent layer, Canopy layer, Understory layer

## NATIONAL TURMERIC BOARD

**Why in News:** Union Minister of Commerce and Industry inaugurated the National Turmeric Board with Shri Palle Ganga Reddy as its first Chairperson.

- The headquarters of the Board is set up in Nizamabad, Telangana.

### Purpose of the National Turmeric Board

The Board is created to:

- Help turmeric farmers across 20 states, including Maharashtra, Tamil Nadu, Andhra Pradesh, Telangana, Madhya Pradesh, and Meghalaya.
- Increase turmeric production and improve farmers' income, especially in Andhra Pradesh and Telangana, where there is great potential.
- Support research & development of new turmeric-based products.
- Promote global trade of turmeric and its products.
- Ensure quality and safety standards for domestic use and exports.

### Importance of Turmeric & India's Role

- Turmeric is known as the 'Golden Spice' due to its health benefits and wide usage.
- India is the world's largest producer, consumer, and exporter of turmeric.
- In 2023-24, India cultivated turmeric on 3.05 lakh hectares, producing 10.74 lakh tonnes.
- India accounts for over 70% of global turmeric production and has a 62% share in world trade.
- India exported 1.62 lakh tonnes of turmeric in 2023-24, worth \$226.5 million.

### Structure of the Board

- The Board will have representatives from various ministries, including:
  - Ministry of AYUSH (for Ayurvedic and medicinal use of turmeric).
  - Department of Pharmaceuticals (for turmeric-based medicines and supplements).
  - Department of Agriculture & Farmers Welfare (to support turmeric farmers).
  - Department of Commerce (to boost turmeric exports).
- Top turmeric-growing states like Maharashtra and Telangana, and Meghalaya (famous for Lakadong turmeric), will have representatives.
- Other states will be represented on a rotation basis.

### What is Turmeric?

- Turmeric is the cured and dried rhizome (underground stem) of the *Curcuma longa* plant, a perennial herb.

### Uses of Turmeric

1. **Culinary Use:**
  - A key ingredient in spices and masalas, enhancing the flavor and color of food.
  - Contains anti-cancer properties and supports digestion.
2. **Medicinal Benefits:**
  - Used in traditional medicine for its anti-inflammatory, antibacterial, and antioxidant properties.
  - Helps in healing internal injuries and pain relief.
3. **Beauty & Skincare:**
  - Used to brighten and improve skin health.
  - Acts as a natural remedy for acne and skin infections.
4. **Religious & Cultural Significance:**
  - Used in Hindu rituals, weddings, and festivals.
  - Considered a symbol of purity and prosperity.

### Ideal Climate & Soil for Cultivation

- **Climate:**
  - Grows well in tropical regions from sea level to 1500 meters altitude.
  - Requires warm temperatures (20–35°C) and annual rainfall of 1500 mm or more.
  - Can be cultivated under rain-fed or irrigated conditions.
- **Soil Requirements:**
  - Thrives in well-drained sandy or clay loam soils with pH 4.5–7.5.
  - Requires rich organic matter for better yield.

### Popular Turmeric Varieties in India

Turmeric cultivars are usually named after their place of cultivation. Some well-known varieties include:

- Salem (Tamil Nadu)
- Duggirala, Mydukur (Andhra Pradesh)
- Armoor (Telangana)
- Tekkurpet, Amalapuram (Andhra Pradesh)
- Erode (Tamil Nadu)
- Sangli (Maharashtra)
- Lakadong (Meghalaya) – Known for its high curcumin content.

Turmeric is not only an essential spice but also a valuable medicinal and cultural product, making it one of India's most important agricultural commodities.

### EXPECTED QUESTION FOR UPSC CSE

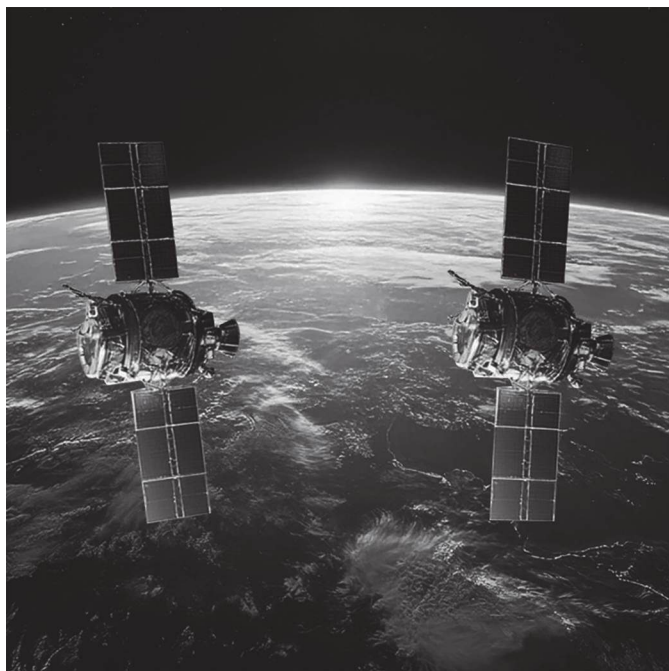
#### Prelims MCQ

- Q. Where is the headquarters of the National Turmeric Board located?
- (a) Hyderabad                      (b) Mumbai  
(c) Nizamabad                      (d) Nagpur

(c) Answer

### SpaDeX MISSION

**Why in News:** The Indian Space Research Organisation (ISRO) released a video showcasing the successful satellite docking as part of its Space Docking Experiment (SpaDeX).



#### Key Details

- The Space Docking Experiment mission was successfully launched using PSLV-C60 from the Satish Dhawan Space Centre.
- **Note:** The Polar Satellite Launch Vehicle (PSLV) is ISRO's reliable workhorse rocket, known for its consistent success in launching satellites into various orbits. The "C60" denotes the specific mission number of the PSLV series.
- The satellites were placed in a **low-earth orbit**, typically 500-2,000 km above Earth's surface.
  - This orbit is preferred for Earth observation, communication, and research satellites due to the shorter travel time and reduced fuel requirement.

#### About SpaDeX Mission

- Space Docking Experiment is a **twin satellite mission developed by the Indian Space Research Organisation (ISRO)** to mature and demonstrate technologies related to orbital rendezvous, docking, formation flying.

- **Chaser and Target:** SpaDeX consists of two **modified IMS-1 class satellites** weighing 220 kg each. During proximity operations one spacecraft acts as a Chaser and other acts as a Target.
- After deployment, the two spacecraft then executed manoeuvres to bring them together again. The Chaser (SDX01) approached the target (SDX02) and then carried out precision manoeuvres to complete a successful docking.
- **Indigenous technologies incorporated in the SpaDeX Mission:**
  - Docking mechanism.
  - A suite of four rendezvous and docking sensors.
  - Power transfer technology.
  - Indigenous novel autonomous rendezvous and docking strategy.
  - **Inter-satellite communication link (ISL)** for autonomous communication between spacecraft, **incorporated with inbuilt intelligence** to know the state of the other spacecraft.
  - **GNSS-based Novel Relative Orbit Determination and Propagation (RODP)** processor to determine the relative position and velocity of the other spacecraft.
  - Simulation test beds for both **hardware and software** design validation and testing.
- **Objectives of the Mission:**
  - To demonstrate an autonomous rendezvous and docking using the V-bar approach.
  - To verify electrical power transfer between two docked spacecraft.
  - To execute a composite spacecraft control using the attitude Control System of another spacecraft while both are in a docked configuration.
  - To act as independent satellites after undocking, and to operate their payloads for a period of two years.

#### Significance of the mission for India

- **Expands scope of Future Missions:**
  - Space docking is a critical prerequisite for upcoming space missions, such as lunar exploration and the operation of space stations. **By successfully executing this mission, ISRO is laying the foundation for autonomous docking—a vital capability for future missions like Chandrayaan-4.**



Rs. 3984.86 Crore and includes the establishment of the Launch Pad and the associated facilities.

**Launch Pads of ISRO**

- At present, Indian Space Transportation Systems are completely reliant on two launch pads viz. First Launch Pad (FLP) & Second Launch Pad (SLP).
- **FLP was realized 30 years ago for PSLV** and continues to provide launch support for PSLV & SSLV.
- **SLP was established primarily for GSLV & LVM3** and also functions as standby for PSLV.
  - SLP has been operational for almost 20 years and has enhanced the launch capacity towards enabling some commercial missions of PSLV/LVM3 along with the national missions including the Chandrayaan-3 mission.
  - SLP is also getting ready to launch the human-rated LVM3 for the Gaganyaan missions.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding ISRO's launch pads:

1. First Launch Pad provides launch support for PSLV and SSLV.
2. Second Launch Pad is exclusively used for the launch of GSLV and LVM3.

Which of the statements above is/are correct?

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

Answer: (a)

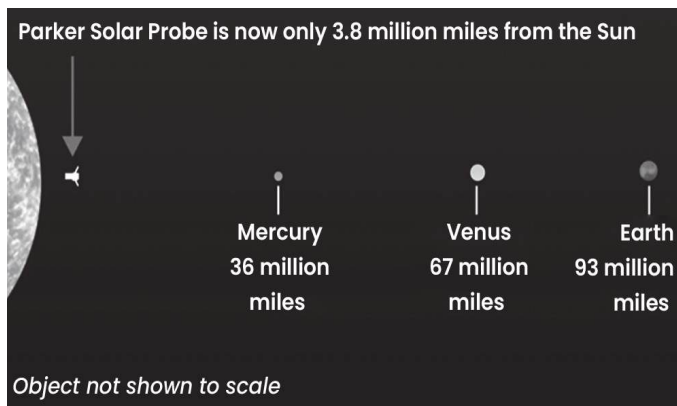
**PARKER SOLAR PROBE**

**Why in News:** NASA scientists announced on 28th December, 2024, that the **Parker Solar Probe survived the closest-ever approach to the Sun**. The craft was operating normally after it passed just 6.1 million km (3.8 million miles) from the solar surface.

**Key fact about the Parker Solar Probe**

- Parker Solar Probe was **launched by NASA on August 12, 2018**, to study the structure and **dynamics of the Sun's corona** and expand our knowledge of the origin and evolution of **solar wind**.
- Over the course of its mission, Parker Solar Probe will make a total of **24 close orbits around the sun. (Already completed 21 orbits)**.
- **Mass: 685 kilograms** at launch

- **Launch site:** Cape Canaveral Air Force Station, Florida.
- **Temperature protection:** Parker Solar Probe and its instruments are protected from the Sun by a **4.5-inch-thick (11.43 cm) carbon-composite shield**, which can withstand temperatures reaching nearly 2,500 degrees Fahrenheit (1,377 Celsius).
- **Scientific instruments:**
  - Fields Experiment (FIELDS)
  - Integrated Science Investigation of the Sun (ISIS)
  - Wide Field Imager for Solar Probe (WISPR)
  - Solar Wind Electrons Alphas and Protons (SWEAP)



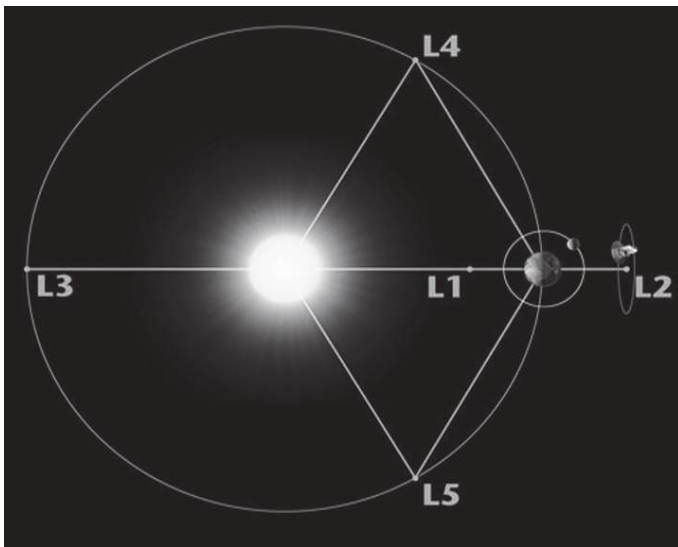
**Aditya-L1 Mission**

- On September 02, 2023, the Aditya-L1 spacecraft—**India's first solar observatory**—was launched on **board PSLV C57**. Aditya-L1 is a satellite dedicated to the **comprehensive study of the Sun**.
- It has **7 distinct payloads** developed, all developed indigenously. Five by ISRO and two by Indian academic institutes in collaboration with ISRO.
- Aditya in Sanskrit means the Sun. **L1 here refers to Lagrange Point 1** of the Sun-Earth system.
- The strategic placement at the **L1 Lagrange point** ensures that Aditya-L1 can **maintain a constant, uninterrupted view of the Sun**.
- This location also allows the satellite to **access solar radiation and magnetic storms** before they are influenced by Earth's magnetic field and atmosphere.
- Additionally, the **L1 point's gravitational stability minimises the need for frequent orbital maintenance efforts, optimizing the satellite's operational efficiency**.
- Aditya-L1 will stay approximately **1.5 million km away from Earth**, directed towards the Sun, which is about 1% of the Earth-Sun distance.
- Aditya-L1 **will neither land on the Sun nor approach the Sun any closer**.

**PRELIMS SPECIAL**

**Lagrange Points**

- Lagrange points are positions in space where the gravitational forces of a two-body system like the Sun and the Earth produce **enhanced regions of attraction and repulsion.**
- These can be used by spacecraft to **reduce fuel consumption needed to remain in position.**
- Lagrange points are named in honour of Italian-French mathematician **Joseph-Louis Lagrange.**
- Each pair of gravitational bodies has **five Lagrange points.** Let's take Earth and the sun as an example.
  - **L1 Point:** The Earth-sun L1 point is about 932,000 miles (1.5 million km) from Earth towards the sun.
  - **L2 Point:** The L2 point is the same distance but in the opposite direction, away from the sun.
  - **L3 Point:** The L3 point is located on the opposite side of the sun to Earth, so we cannot see it.
  - **L4 and L5 Points:** L4 and L5 Points are positioned 60 degrees in front of and 60 degrees behind Earth in its orbit and are where the Trojan asteroids cluster.



**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding the Aditya L-1 mission:

1. Aditya L1 is the first space-based Indian mission to study the Sun.
2. Aditya-L1 will stay approximately 1.5 million km away from the Sun.

Which of the statements given above is/are correct?

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

(a) Answer:

**Descriptive Question**

Q. Discuss the significance of Parker Solar Probe and Aditya L-1 Missions in advancing our understanding of the sun. [150 words, 10 Marks]

**GENOME INDIA PROJECT**

**Why in News:** The Department of Biotechnology recently announced its new platform and framework for sharing its 10,000 human genome dataset.

**Key Details**

- The sequences of healthy individuals from 99 ethnic populations of the country has helped create a baseline map of India's genetic diversity.
- The researchers in the second phase plan to sequence genomes of those with specific diseases.

**About Genome India Project**

- The Genome India project was **first approved in 2020 with the aim of capturing this diversity at the genomic level.**
- Researchers from 20 different scientific institutions have come together to sequence the first 10,000 genomes under the project.
- The department of biotechnology aims to expand the programme further and sequence up to 1 million genomes.

**How will data be shared**

- The data will be available to Indian researchers through managed access. This is the first time that we have created a resource such as this and we have to be very careful how we share this highly sensitive data.
- Access will be granted only to research institutions that partner with us for the study.

**Advantage of Genome India Project**

- **Inform Policy Decisions:** Genetic data will help policymakers design and implement health strategies suited to India's diverse population.
- **Identify factors for diseases:** The project will help identify genetic basis or genetic risk factors for various diseases. These can then be used as targets for developing therapies and diagnostic tests.
- **Find new variants:** An Indian dataset helps identify new variants. The researchers have identified 135 million genetic variations in the 10,000 genomes so far, 7 million of which are not found in the global databases.
- **Identify frequency of Genetic Variations:** Population level sequencing can also tell scientists and clinicians the frequency at which certain genetic variations that are known to cause disease appear and hence how common a disease might be.

- **Identify the Resistant Variants:** It can also help in identifying resistance indicating variants, for example genes that might make certain medicines or anaesthetics ineffective in certain populations.

**Other such projects across the world**

- **Human Genome Project:** The first Human Genome Project which was an international consortium funded by the US National Institutes of Health among others published the world’s first complete human genome in 2003.
- **1000 genome project:** The 1,000 genome project through international collaboration published 1,092 sequences in 2012.
- A UK government project sequenced 100,000 genomes by 2018.
- There has also been a European effort to sequence 1+ Million Genomes across 24 countries.

**Conclusion**

The Genome India Project is a major step in understanding India’s genetic diversity and its impact on health. With responsible data sharing and further research, it can lead to better treatments and personalized medicine for the future.

**PRELIMS SPECIAL**

**About Genome**

- **Definition:**
  - The genome is the entire set of DNA instructions found in a cell. In humans, the **genome consists of 23 pairs of chromosomes** located in the cell’s nucleus, as well as a small chromosome in the cell’s mitochondria.
  - A genome contains all the information needed for an individual to develop and function.

**About Genome Sequencing**

- The genome, or genetic material, of an organism is made up of a unique DNA or RNA sequence. Each sequence is composed of chemical building blocks known as nucleotide bases. Determining the order of bases is called “genomic sequencing” or, simply, “sequencing.”

**EXPECTED QUESTION FOR UPSC CSE**

**Descriptive Question**

Q. What does Genome Sequencing refer to? How will the Genome India Project impact genome sequencing in India? [ 10 marks, 150 words]

**TWIGSTATS: FINDING GENETIC ANCESTRY**

**Why in News:** In a recent study published in Nature journal, the researchers used **twigstats to determine more precise individual-level ancestry at very high resolution.**

**What are Twigstats?**

- Twigstats method is one of the most exciting developments in **genetic research**, pioneered by a collaboration led by the Francis Crick Institute.
- Twigstats **employs time-stratified ancestry analysis, which enhances statistical power and reduces errors.**
- Twigstats uses **R and C++ language** to analyse genetic data and derive ancestry.
- This innovative approach has been tested on simulated genetic conditions and **applied to ancient DNA samples from northern and central Europe**, yielding unprecedented detail about genetic histories.
- Using Twigstats, researchers **reconstructed the genetic history of 1,556 ancient DNA samples spanning from 500 BC to 1000 AD.**
- The results have provided high-resolution data about individual ancestries and population movements during key historical periods.

**Genetic Ancestry**

- **Prehistoric human ceremonial burials, mass grave mounds, and war graves** scattered around the world are a **treasure trove of ancient genetic material** that scientists consider key to unlocking secrets from our past.
- The ancient DNA (aDNA) at **these sites opens windows into population dynamics**, including the expansion and replacement of populations using peaceful, natural, or violent means, admixture events involving two or more sub-populations, cultural transitions, migrations for hunting and wealth at individual, local, and global scales.

**Traditional Techniques for Genetic Analysis**

- **Single Nucleotide Polymorphism:** Single nucleotide polymorphisms (SNPs) are used to **identify variations in a DNA sequence where one nucleotide (A, C, G, or T) differs across people at certain points.** It is commonly used to build an ancestry model from ancient genetic material.
- **Haplotypes method:** Haplotypes method involves **study of combinations of genetic markers that are inherited on the same chromosome** This method aids researchers in their **understanding of population genetics and disease trends.**
- **Genealogical Tree Inference:** By **creating family trees or genealogical trees, this technique traces an individual’s ancestry and genetic links.** In order to comprehend population structure and demographic shifts, **it examines both contemporary and ancient genomes.**

**Conclusion**

With growing interest in genetic genealogy, Twigstate’s innovation ensures a deeper, more accurate understanding of human ancestry, bridging the past with the future through the power of DNA.

## EXPECTED QUESTION FOR UPSC CSE

## Prelims MCQ

Q. Which one of the following explains the term 'Twigstats'?

- (a) Non-interrupted E-Commerce transactions
- (b) Offering legal consulting services to poor
- (c) Crypto currency mining competition
- (d) Data analysis and insights

(d) :Answer

## QUANTUM SATELLITE AND COMMUNICATIONS

**Why in News:** India set to join quantum satellite race for a hack-proof communication network, the Department of Space is planning to launch a quantum satellite in 2-3 years for quantum communications.

### Key Developments

- India is set to join an elite group of countries with quantum satellite capabilities, securing communication networks against hacking and cyber-attacks.
- The satellite will play a key role in the larger quantum communications network under the National Quantum Mission (NQM).
- The NQM has set up four Section 8 companies across four verticals of quantum technologies that the mission aims to incubate: computing, communication, measurement, and sensing.
- The communications vertical seeks to make communication in India completely safe from quantum computers capable of breaking today's encryption technologies.

### Quantum Satellite and Communications

- A quantum satellite is a communications satellite that uses quantum physics to secure its signals.
- Communications is a broad term that refers to technologies that send and receive signals.
  - An important part of these technologies is security: preventing bad actors from intercepting a message being transmitted across large distances, through multiple networks.
- The advent of quantum computers threatens the technologies currently being used to secure messages.
- Quantum physics has also paved the way for new forms of protection, and quantum satellites are expected to facilitate them.

## Quantum Cryptography and Quantum Key Distribution (QKD)

- Quantum cryptography (also known as quantum encryption) refers to various **cybersecurity methods for encrypting and transmitting secure data** based on the naturally occurring and immutable laws of quantum mechanics.
- Quantum cryptography uses the tenets of quantum physics to secure messages. Its most famous type is quantum key distribution (QKD).
- **Quantum key distribution** utilizes the unique properties of quantum mechanical systems to generate and distribute cryptographic keying material using special-purpose technology.
- The Quantum Key Distribution (QKD) technology underpins Quantum Communication technology that ensures unconditional data security by virtue of the principles of **quantum mechanics**, which is not possible with the conventional encryption systems.
- QKD systems are not typically used to encrypt secure data itself, **but rather to make a secure key exchange between two parties** by collaboratively building a shared private key, which can in turn be used for traditional symmetric key encryption methods.
- **Working of QKD**
  - QKD systems work by sending individual photon light particles across a fiber optic cable.
  - This stream of photons travels in a single direction and each one represents a single bit, or qubit, of data—either zero or one.
  - Polarized filters on the sender's side change the physical orientation of each single photon to a specific position.
  - The receiver uses two available beam splitters to read the position of each photon as they're received.
  - The sender and receiver compare the sent photon positions to the decoded positions, and the set that matches becomes the key.

### Quantum Entanglement

- Quantum entanglement refers to the phenomenon in quantum physics where two or more particles become connected in such a way that the state of one particle cannot be described independently of the state of the other particles, regardless of the distance between them.
- This property is crucial for various applications in quantum information processing, including quantum communication and quantum teleportation.

### Quantum Teleportation

- Quantum teleportation works by creating pairs of entangled photons and then sending one of each pair to the sender of data and the other to a recipient.
- The approach relies on quantum entanglement.

**PRELIMS SPECIAL****National Quantum Mission (NQM)**

- The National Quantum Mission was approved by the Union Cabinet at an outlay of Rs.6003.65 Crores for a **period of eight years**.
- The implementation broadly has three timelines, i.e. 3 years, 5 years and 8 years.
- NQM is one of the nine missions under the Prime Minister's Science Technology Innovation Advisory Council (PMSTIAC), created to leverage scientific research and make India a global leader in quantum technology.
- The **major fields of research and development being focused upon under the mission are** Quantum Computing, Quantum Communication, Quantum Sensing & Metrology and Quantum Materials & Devices.
- Mission Implementation includes setting up of four **Thematic Hubs (T-Hubs)** in top academic and National R&D institutes in the domains:
  - Quantum Computing
  - Quantum Communication
  - Quantum Sensing & Metrology
  - Quantum Materials & Devices
- The hubs which will focus on generation of new knowledge through basic and applied research as well as promote R&D in areas that are mandated to them.
- **Significance:** NQM has the potential to elevate the country's Technology Development ecosystem to a level of global competitiveness.
  - The Mission would greatly benefit various sectors including communication, health, financial, energy with applications in drug design, space, banking, security etc.
  - The Mission will also provide a huge boost to National priorities like Digital India, Make in India, Skill India and Stand-up India, Start-up India, Self-reliant India and Sustainable Development Goals (SDG).

**Google's Quantum Computing Chip**

- Google has launched Willow, its latest quantum chip. Willow has state-of-the-art performance across a number of metrics, enabling two major achievements.
  - The first is that **Willow can reduce errors exponentially as we scale up using more qubits**. This cracks a key challenge in quantum error correction that the field has pursued for almost 30 years.
  - Second, Willow performed a **standard benchmark computation in under five minutes that would take one of today's fastest supercomputers 10 septillion (that is, 10<sup>25</sup>) years**, a number that vastly exceeds the age of the Universe.
- Willow operates using **superconducting transmon qubits**—tiny electrical circuits exhibiting quantum behaviour at extremely low temperatures. These circuits are engineered to function like artificial atoms in a quantum state.

- To maintain these delicate quantum states, the qubits are cooled to temperatures just above absolute zero. This minimises vibrations and other disturbances that could disrupt the qubits and introduce errors in calculations.

**EXPECTED QUESTION FOR UPSC CSE****Prelims MCQ**

Q. Consider the following statements regarding Quantum Satellites:

1. Quantum satellites utilize the principles of quantum mechanics, such as superposition and entanglement, to enable secure communication.
2. A primary application of quantum satellites is to generate and distribute quantum keys for encryption, enhancing the security of data transmission.

Which of the above statements is/are correct?

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

(c) Answer

**BIG DATA AND DATA SCIENCE**

**Why in News:** India has joined the prestigious UN Committee of Experts on Big Data and Data Science for Official Statistics.

**Key Details**

- India's membership underscores the country's growing stature in the global statistical community and highlights its commitment to leveraging data and technology for informed decision-making.
- As part of the committee, India will **contribute to shaping global standards and practices in harnessing Big Data** and data science for official statistical purposes.
- **Significance:** This engagement will also complement India's ongoing efforts to:
  - **Streamline Statistical Production:** Drive innovation in data collection, processing, and analysis to reduce the time lag in data availability.
  - **Improve Decision-Making:** Provide policymakers with real-time insights for evidence-based decisions, addressing key socio-economic challenges.
  - **Foster International Collaboration:** Share India's expertise while learning from global best practices to create robust, future-ready statistical frameworks.

**Big Data**

- Big data refers to **extremely large and diverse collections of structured, unstructured, and semi-structured data** that continue to grow exponentially over time.

- These datasets are so huge and complex in volume, velocity, and variety, that traditional data management systems cannot store, process, and analyze them.
- Big data describes large and diverse datasets that are huge in volume and also rapidly grow in size over time.
- Big data is used in **machine learning, predictive modelling, and other advanced analytics** to solve business problems and make informed decisions.

### Applications Of Big Data

- **Personalized Retail Recommendations:** Tracking consumer behaviour and shopping habits to deliver **hyper-personalized retail product recommendations** tailored to individual customers.
- **Fraud Detection in Payments:** Monitoring payment patterns and analyzing them against historical customer activity to **detect fraud in real time**.
- **Optimizing Last-Mile Delivery:** Combining data and information from every stage of an order's shipment journey with hyperlocal traffic insights to **help fleet operators optimize last-mile delivery**.
- **AI in Healthcare Data Analysis:** Using AI-powered technologies like **natural language processing to analyze unstructured medical data** (such as research reports, clinical notes, and lab results) to gain new insights for improved treatment development and enhanced patient care
- **Smart Road Maintenance:** Using image data from cameras and sensors, as well as GPS data, to **detect potholes and improve road maintenance in cities**.
- **Analysis of Supply Chain Impact:** Analyzing public datasets of satellite imagery and geospatial datasets to visualize, monitor, measure, and predict the **social and environmental impacts of supply chain operations**.

**Conclusion:** India's joining the Committee of Experts on Big Data and Data Science for Official Statistics is a step toward revolutionising statistical production and dissemination, ultimately contributing to a more resilient and data-informed world. This recognition will strengthen India's ability to influence global statistical practices, reinforcing its commitment to data-driven progress and sustainable development.

#### PRELIMS SPECIAL

##### United Nations Statistical Commission

- The United Nations Statistical Commission, established in 1946, is the **highest body of the global statistical system** bringing together the Chief Statisticians from member states from around the world.
- It is the highest decision-making body for international statistical activities, responsible for setting of statistical standards and the development of concepts and methods, including their implementation at the national and international level.

- The Statistical Commission oversees the work of the United Nations Statistics Division (UNSD), and it is a **Functional Commission of the UN Economic and Social Council**.

##### UN Committee of Experts on Big Data and Data Science for Official Statistics (UNCEBD)

- The Statistical Commission agreed at its 45th session to create the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD) to further investigate the benefits and challenges of Big Data, including the potential for monitoring and reporting on the sustainable development goals.
- The UN Committee of Experts on Big data and Data Science for Official Statistics (UNCEBD) provides a strategic vision, direction and coordination for a global programme on big data for official statistics.
- Capacity development is a key output of all UNCEBD activities. The capacity development work is carried out by the Task Teams established under the UNCEBD.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

- Q. Explain the role of Big Data in driving innovation, decision-making, and operational efficiency, providing relevant examples to support the analysis. [15 Marks] [250 words]

### DARK MATTER

**Why in News:** Physicists have revised the minimum possible mass of a dark matter particle which is a significant update in the world of dark matter.

#### Key Details: Mass of Dark Matter Particles

- For decades scientists thought the minimum mass of dark matter particle was about  $10^{-31}$  times the mass of a proton. This was based on theoretical models and observations of the universe.
- But in May 2024, theoretical physicists revised the limit and pushed it up by an order of magnitude, **to  $2.3 \times 10^{-30}$  proton masses**. This is a significant increase, about ten times larger than the previous estimate.
- Using data on how stars move in Leo II, a dwarf galaxy orbiting the Milky Way, scientists inferred the dark matter density in it as a function of the distance from its centre.
  - This density profile isn't unique due to measurement uncertainties, so they generate a set consistent with the stellar data.
- Next, they numerically solved the **Schrödinger equation** after modifying it to account for gravity and obtained an ensemble of density profiles.
- Finally, they carried out a statistical procedure to match the two sets of density profiles - the empirical one from observing Leo II and the theoretical one from solving the equation.

- Their key finding here was that the inner regions of Leo II contained more invisible mass and which dark particles of  $10^{-31}$  proton mass couldn't account for. Thus, they surmised heavier particles are needed to accommodate the inner crowding.

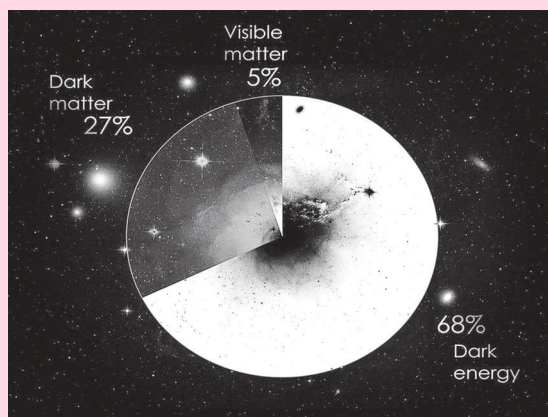
**PRELIMS SPECIAL**

**Dark Matter**

- Unlike normal matter, dark matter does not interact with the electromagnetic force.
- This means it does not absorb, reflect or emit light, making it extremely hard to spot.
- Researchers have been able to infer the existence of dark matter only from the gravitational effect it seems to have on visible matter.
- Dark matter seems to outweigh visible matter roughly six to one, making up about 27% of the universe.
- Scientists today think dark matter exists in a vast, web-like structure that winds through the whole universe – a gravitational scaffold that attracts most of the cosmos' normal matter.

**Dark Energy**

- Dark energy makes up approximately 68% of the universe and appears to be associated with the vacuum in space.
- It is distributed evenly throughout the universe, not only in space but also in time – in other words, its effect is not diluted as the universe expands.
- The even distribution means that dark energy does not have any local gravitational effects, but rather a global effect on the universe as a whole.
- This leads to a repulsive force, which tends to accelerate the expansion of the universe.



**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

- Q. Arrange the following constituents of the universe in decreasing order of their abundance:
1. Visible Matter
  2. Dark Matter
  3. Dark Energy

Select the correct answer using the code given below:

- (a) 1-2-3
- (b) 2-1-3
- (c) 3-1-2
- (d) 3-2-1

(p) Answer

**SEMI-DIRAC FERMIONS**

**Why in News:** Researchers have observed a unique quasiparticle that behaves as massless in one direction and massive in another.

**Fundamental Particles: Sub-Atomic Particles**

- **Sub-atomic particles:** Particles smaller than atoms which make up the universe.
- One of the ways to **categorise** sub-atomic particles: Fermions and Bosons
- **Fermions:** Make up the matter
  - **Example:** Electrons and Protons
  - **Classification:** Dirac fermions and Majorana fermions
  - **Dirac fermions:** Fermions that may or may not have mass but are always different from their antiparticles.
  - **Majorana fermions:** Fermions that are also their own antiparticles (neutrinos are suspected to be Majorana fermions).
- **Bosons:** Mediate the forces between matter
  - **Example:** Photons
- **Anyons:** Particles found in two-dimensional materials whose properties lie somewhere between those of fermions and bosons.

**Quasiparticle**

- A quasiparticle is a clump of particles or energy packets that, in some given conditions, behaves like a single particle.
- Protons are quasiparticles, for example: each proton is made of three quarks and the gluons holding them together.
- In most settings, what separates particles from quasiparticles is a distinction without a difference.
- If a quasiparticle is a fermion, it's a fermion in the same way an electron is a fermion.

**Semi-Dirac Fermions**

- Semi-Dirac fermions are **quasiparticles that behave as massless in one direction and massive in another.**
- **Discovery:** First theorised in 2008-09, Semi-Dirac fermions were recently identified within a crystal of a semi-metal material known as ZrSiS.
- **Potential Implications:** The Discovery of Semi-Dirac Fermions could revolutionise technologies like **batteries** and **sensors** while opening new avenues for **quantum physics research.**

### Applications of Fundamental Particles

- **Medical Applications:** Positron Emission Tomography (PET) Scans; Radiotherapy; Medical Imaging
- **Space and Astrophysics:** Cosmic Ray Studies; Dark Matter Research
- **Material Science:** Nanotechnology; Superconductors
- **Energy and Nuclear Technology:** Nuclear Power; Fusion Research
- **Electronics and Computing:** Semiconductor Technology; Quantum Computing

#### EXPECTED QUESTION FOR UPSC CSE

##### Prelims MCQ

- Q. Which of the following statements best describes the behaviour of semi-Dirac fermions?
- They behave like massless particles in all directions.
  - They have a constant mass regardless of their direction of motion.
  - Their mass depends on their direction of motion, being massless in one direction and possessing mass in another.
  - Their energy changes in a curved way in all directions.

Answer: (c)

## HYDROGELS FOR CANCER TREATMENT

**Why in News:** Researchers from the Indian Institute of Technology-Guwahati (IIT-G) and the Bose Institute, Kolkata have developed an advanced injectable hydrogel for localised cancer treatment.

### Key Details: About the Developed Hydrogel

- The hydrogel serves as a stable reservoir for anti-cancer

drugs, releasing it in a controlled manner while sparing healthy cells from harm.

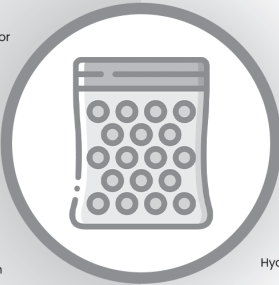
- **Current treatments**, such as chemotherapy and surgical interventions, often have severe **limitations**.
  - Surgical removal of tumours is sometimes not feasible, particularly for internal organs.
  - Chemotherapy’s systemic delivery often results in harmful side effects by affecting both cancerous and healthy cells.
- The researchers addressed these challenges by designing a **hydrogel that delivers drugs precisely to the tumour site**, ensuring localised action.
- **Working of the Hydrogel**
  - The hydrogel responds to elevated glutathione (GSH) levels, a molecule abundant in tumour cells.
  - Upon encountering high GSH levels, the hydrogel triggers a controlled drug release directly into the tumour, minimising its interaction with healthy tissues and reducing systemic side effects.
- **Results**
  - The hydrogel showcased remarkable efficacy in preclinical trials on a murine model of breast cancer. A single injection of the hydrogel, loaded with the chemotherapy drug Doxorubicin, resulted in a ~75% reduction in the tumour size within 18 days.
  - Crucially, the hydrogel remained localised at the tumour site, steadily releasing the drug over time without causing detectable side effects on other organs.

### Hydrogels

Hydrogels are crosslinked polymer chains with three-dimensional (3D) network structures, which can absorb relatively large amounts of fluid. Because of the high water content, soft structure, and porosity of hydrogels, they closely resemble living tissues.

#### Properties of Hydrogels

- High Water Content**  
Hydrogels can hold significant amounts of water, mimicking natural tissues.
- Biocompatibility**  
They are compatible with living tissues, minimizing immune reactions and supporting cellular adhesion, proliferation, and migration.
- Biodegradability**  
Hydrogels can degrade enzymatically or hydrolytically, allowing for temporary support during tissue regeneration.
- Mechanical Properties**  
They exhibit elasticity, viscoelasticity, and adjustable stiffness, making them suitable for diverse biomedical applications.
- Swelling Ability**  
Hydrogels swell upon water absorption, influenced by crosslinking density, environmental pH, and ionic strength.
- Porosity**  
The porous structure facilitates nutrient transport, cell migration,
- Thermo-Responsiveness**  
Hydrogels have hydrophilic surfaces, promoting cellular adhesion and tissue integration.
- Self-Healing**  
Certain hydrogels change properties with temperature variations, useful for targeted drug delivery.
- Antibacterial and Antiviral Properties**  
Some hydrogels can repair their structure after damage, enhancing durability.



#### Applications of Hydrogels

- Tissue Engineering**  
Hydrogels serve as scaffolds for regenerating bones, skin, cartilage, and other tissues.
- Drug Delivery Systems**  
They allow controlled and sustained release of therapeutic agents, including drugs and biological molecules.
- Wound Healing**  
Hydrogels maintain a moist environment, support cell migration, and accelerate tissue regeneration.
- Cardiac Repair**  
Smart hydrogels aid in cardiac tissue regeneration by supporting cell growth and restoring functionality.
- Bone Repair**  
Composite hydrogels loaded with growth factors enhance bone healing.
- Diabetic Wound Care**  
Specialized hydrogels reduce inflammation and promote faster healing in chronic wounds.
- Anti-Microbial Applications**  
Hydrogels embedded with nanoparticles or drugs prevent infections.
- Cancer Therapy**  
Hydrogels are utilised for localized delivery of chemotherapeutic agents.
- 3D Bioprinting**  
They are used in contact lenses and as drug delivery systems for eye treatments.
- Ophthalmology**  
Hydrogels are used as bio-inks for creating complex tissue structures.

## EXPECTED QUESTION FOR UPSC CSE

### Prelims MCQ

Q. Consider the following statements about hydrogels:

1. Hydrogels are three-dimensional networks of hydrophilic polymers that can retain a large amount of water.
2. They are primarily used as structural materials in the construction industry due to their rigidity.

Which of the above statements is/are correct?

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

Answer: (a)

## SSI MANTRA

**Why in News:** Recently, doctors used **India's first indigenous surgical tele-robotic system**, called the **SSI Mantra**, to successfully conduct two complex heart surgeries over a distance of 286 kilometres.

### Key Details

- SSI Mantra is developed by the medical technology company **SSI Ltd**.
- Based on trials, the technology has been approved by the **Central Drugs Standard Control Organisation (CDSCO)**.

- **Latency rate: 35-40 milliseconds:** Thus, actions executed in one place get almost instantaneously transmitted to the surgical instruments in another place.
- It facilitated complex cardiac surgery such as **total endoscopic coronary artery bypass**.

### Advantages

- **Enhancing Patient Well-Being:** Uses gentle, minimally invasive techniques that promote faster healing, reduce complications, and improve patient comfort.
- **Expanding Access to Surgical Care:** Brings expert surgical care closer to people in remote or underserved areas with limited medical facilities.
- **Breaking Geographical Barriers:** Ensures even distant communities receive world-class surgical expertise by overcoming location constraints.

### Key Components

- **Two surgeon consoles:**
  - Master surgeon console: Situated at a remote location.
  - Slave surgeon console: Located in an operation theatre.
- Both surgeon consoles have a **system controller, a pair of hand controllers**, and various **control pedals/toggle switches**.
- **Patient side arm carts:** To mount multiple robotic arms and endoscopic cameras.
- The remote expert surgeon manoeuvres the hand controllers to perform specific surgical actions, and these action/control signals are transmitted to slave surgeon consoles.

## Applications of robotics in healthcare

### Revolutionizing Healthcare: The Smart Integration of Robotics

1. **Precision-Driven Surgical Interventions:** Robotic-assisted surgeries, reducing invasiveness and optimizing recovery.
2. **Telesurgery:** Advanced robotic arms, powered by haptic feedback and AI, enable remote surgical procedures.
3. **AI-Augmented Diagnostics:** Dcode MRI, CT scans, and X-rays with superior accuracy.
4. **Exoskeletons & Neural Prosthetics:** AI-integrated bionic limbs and exosuits empower the differently-abled, translating neural impulses into seamless mobility.
5. **Compassionate Robotics in Elderly Care:** provide cognitive stimulation, emotional support, and companionship to aging populations.
6. **AI-Powered Remote Patient Monitoring:** Autonomous telehealth bots track vitals, predict complications, and assist in chronic disease management via real-time analytics.
7. **Automation in Hospital Logistics:** Robotic nurse assistants and disinfection bots ensures efficient patient care.
8. **Drug Discovery with AI Robotics:** Automated screening accelerates vaccine development and precision medicine
9. **Nanorobots for Precision Drug Delivery**
10. **Cognitive Robotics for Mental Wellness:** AI-driven therapy robots engage in conversational support, autism therapy, and emotional regulation
11. **Emergency Response & Trauma Robotics:** Autonomous triage bots assess injuries in disaster zones, while robotic CPR assistants stabilize patients en route to hospitals.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

Q. The term 'SSI Mantra' sometimes mentioned in the news recently is related to:

- (a) Surgical tele-robotic system
- (b) AI sanskrit language translator
- (c) Anti-tank guided missile
- (d) None

Answer: (a)

- It can make a few people quite sick, causing infection of the lung (pneumonia) or inflammation of the airways to the lungs (bronchiolitis, bronchitis).
- Symptoms of more severe disease include wheezing, difficulty breathing, chest pain, dizziness, severe fatigue, dehydration, or a persistent fever that does not improve.

#### People at Risk

- Human metapneumovirus is a common cause of upper respiratory infections among **infants and children under 5 years old**.
- While anyone can catch hMPV, infants, older adults, and those with health conditions like immunosuppression, chronic obstructive pulmonary disease (COPD) and asthma are at higher risk for severe illness.

#### Prevention

- Preventing hMPV infection is similar to preventing other respiratory illnesses with actions such as:
  - wearing a mask in crowded or poorly ventilated spaces
  - improving ventilation where possible (such as by opening a window for air flow)
  - cleaning hands regularly and thoroughly, with either soap and water or an alcohol-based hand rub
  - avoiding touching eyes, nose or mouth without cleaning hands first.
- Having a strong immune system can also help fend off infections. Eating a balanced diet, exercising regularly, and sleeping properly help with that.
- **Vaccine:** There is currently no vaccine licensed for use against hMPV.
- **Treatment:** Currently, there is no specific antiviral therapy to treat HMPV

## HUMAN METAPNEUMOVIRUS

**Why in News:** A Human Metapneumovirus (hMPV) outbreak in China has sparked global concern, prompting countries including India to closely monitor the virus and its transmission.

#### About the Virus

- Human metapneumovirus (hMPV) is one of the viruses that causes the common cold (upper respiratory infection). It usually makes people only mildly sick, but it can make some people very sick.
- The virus belongs to the **Pneumoviridae** (Negative strand RNA Viruses) family of viruses, along with the **respiratory syncytial virus (RSV)**.
- It was **first identified in 2001** and has been spreading among people for many decades. It is found around the world.

#### Spread of Virus

- HMPV is most likely spread from an infected person to others through:
  - secretions from coughing and sneezing
  - close personal contact, such as touching or shaking hands
  - touching objects or surfaces that have the viruses on them then touching the mouth, nose, or eyes

#### Signs and Symptoms

- **Flu-like symptoms include:**
  - cough
  - fever
  - sore throat
  - runny or stuffy nose
  - body ache
  - Headache

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following statements regarding Human metapneumovirus (HMPV):

1. It is a DNA virus with high potential for mutations.
2. It was first identified in China after the outbreak of Sars-CoV-2 that caused COVID-19 pandemic.

Which of the statements given above is/are correct?

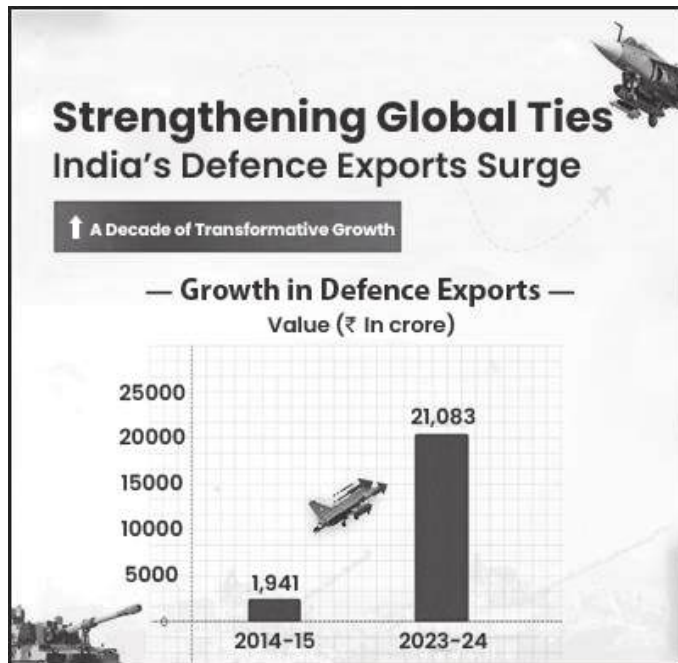
- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (d)

## DEFENCE &amp; SECURITY

## INDIA'S DEFENCE EXPORTS

**Why in News:** Recently, Defence Minister said that India's defence exports have crossed a record ₹21,000 crore for the year 2023-24.



## Key Details

- **Indian exports over a decade:** Surging from ₹686 crore in FY 2013-14 to ₹21,083 crore in FY 2023-24, reflecting a remarkable increase of over 30 times in export value over the past decade.
- **Comparison with previous fiscal year:** Substantial growth of 32.5% over the previous fiscal year, rising from ₹15,920 crore.
- **Export portfolio:** Bulletproof jackets and helmets, Dornier (Do-228) aircraft, Chetak helicopters, fast interceptor boats, and lightweight torpedoes, etc.
- **Expanding international footprint:** Currently, India exports to over 100 nations, with the top three destinations for defence exports in 2023-24 being USA, France and Armenia.

## Key Government Initiatives

- **Liberalized FDI Policy:** The Foreign Direct Investment (FDI) limit in the defence sector was raised in 2020 to 74% through the Automatic Route for companies seeking new defence industrial licenses and up to 100% through the Government Route for those likely to result in access to modern technology. As of February 9, 2024, ₹5,077 crore worth of FDI has been reported by companies operating in the defence sector.



- **Budget Allocation:** The allocation for the Ministry of Defence for the financial year 2024-25 is ₹6,21,940.85 crore, as part of the “Demand for Grant” presented in Parliament during the ongoing Budget Session.
- **Priority for Domestic Procurement:** Emphasis is placed on procuring capital items from domestic sources under the **Defence Acquisition Procedure (DAP)-2020**.
- **Simplified Licensing Process:** Streamlining the industrial licensing process with a longer validity period.
- **iDEX Scheme:** The Innovations for Defence Excellence (iDEX) scheme was launched to **involve startups and Micro, Small, and Medium Enterprises (MSMEs) in defence innovation**.
- **Defence Industrial Corridors:** Establishment of two Defence Industrial Corridors, one each in **Uttar Pradesh and Tamil Nadu**, to promote defence manufacturing.

**Conclusion**

The record achievements in domestic production and exports underscore the government’s commitment to **enhancing national security and bolstering economic growth through robust defence initiatives**.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. Which of the following countries emerged as the top destinations for Indian exports in 2023-24?

(a) USA                      (b) UAE  
(c) Armenia                (d) France

Answer: (a)

**Descriptive Question**

Q. Examine the key factors contributing to India’s rising defence exports. Also, suggest measures to sustain the momentum. [10 Marks, 150 Words]

**\$10 BILLION DEFENSE DEALS BETWEEN INDIA AND FRANCE**

**Why in News:** Two significant defense deals between India and France are nearing finalization.

**Key Details**

- **These deals are expected to be formally concluded during Prime Minister Narendra Modi’s expected visit to Paris in February, where he will attend the Artificial Intelligence (AI) Action Summit.**
- The combined value of these two defense deals is estimated to be over **\$10 billion**.
- The **Rafale-M deal** is a **government-to-government agreement**, which usually ensures a faster and smoother

process due to the direct involvement of both nations’ governments, without the complexities of commercial bidding.

- These acquisitions will **enhance the Navy’s operational readiness** for ensuring **India’s maritime dominance in the Indian Ocean Region (IOR)** while domestic projects are still under development.
- Before these deals can be finalized, they need to be approved by India’s **Cabinet Committee on Security (CCS)**. This approval is expected to happen soon.

**Two Major Deals**

- **Rafale-M Fighter Jets:** India plans to purchase 26 **Rafale-M fighter jets** for its Navy’s aircraft carriers. The Rafale-M is a variant of the **Rafale fighter jet** used by the French Air Force, specifically designed for operations from naval aircraft carriers. This will strengthen India’s naval air capability.
  - These jets will **fill a critical gap** in the Navy’s **carrier-based airpower** until India’s **indigenous Twin Engine Deck-Based Fighter (TEDBF)** is ready.
    - ◆ **Note:** The **TEDBF**, being developed by India’s **Defence Research and Development Organisation (DRDO)**, is expected to be inducted in the 2030s.
- **Scorpene-Class Submarines:** India is looking to purchase **three additional Scorpene-class conventional submarines**.
  - The **three new Scorpene submarines** are necessary because the **Indian Navy is facing challenges with an ageing fleet**.
  - India has already inducted **five Scorpene-class submarines** under **Project-75**, with the **sixth one (INS Vagsheer)** set to be commissioned soon.
  - The **Mazagon Dock Shipbuilders Limited** in India is manufacturing these submarines in partnership with the **French Naval Group**. The final submarine from the earlier contract, **Vagsheer**, is expected to be commissioned soon in Mumbai.
  - *The Navy urgently needs more submarines because Project-75I, which aims to procure six advanced next-generation submarines, has been significantly delayed.*

A **Rafale-M fighter jet** is a type of advanced military airplane made by France, specifically designed for use on aircraft carriers. The “M” stands for “**Marine**”, meaning it’s the naval version of the regular **Rafale** jet. It can take off and land on aircraft carriers, making it suitable for naval operations. The jet is highly capable in air combat, ground strikes, and surveillance.

**Aircraft Carriers in India:**

- The **Indian Navy currently operates two aircraft carriers:**
  1. **INS Vikramaditya:** A refurbished Soviet-era Kiev-class aircraft carrier procured from Russia.

- 2. **INS Vikrant**: India's first indigenously built aircraft carrier, commissioned in **September 2022**.
- Both these aircraft carriers **require compatible fighter jets** for their operations, making the **Rafale-M purchase essential** in the short term.

**EXPECTED QUESTION FOR UPSC CSE**

**Descriptive Question**

Q. India and France have recently finalized defense deals worth \$10 billion, which are expected to enhance strategic ties between the two nations. Analyze the significance of this defense collaboration in the context of India's national security, regional stability, and global geopolitical shifts. [15 marks] [250 words]

**INDIA-U.S. COLLABORATE ON SONOBUOYS**

**Why in News:** India and the U.S. have announced a partnership to co-produce U.S. sonobuoys, which are essential tools for undersea domain awareness (UDA).

**Key Details**

- The aim is to develop advanced solutions to meet the unique challenges of undersea warfare, especially in the Indian Ocean Region.
- Ultra-Maritime (a U.S.-based company specializing in undersea warfare technologies) and Bharat Dynamics Limited (BDL), an Indian defense manufacturing company,** have entered into a partnership to co-produce sonobuoys.
- Sonobuoys will be supplied to the Indian Navy according to U.S. Navy standards. The production will be split between the U.S. and India, in line with India's "Make in India" initiative.
- The collaboration between Ultra Maritime and BDL will also focus on the development of new sonobuoy technologies tailored to the specific acoustic environment of the Indian Ocean. **The unique characteristics of the region, such as its temperature, salinity, and water composition, require specialized sonobuoys for effective sonar performance.**

**About Sonobuoys**

- Sonobuoys are advanced devices used primarily for tracking submarines in deep oceans and seas. **These sonobuoys help in detecting and tracking submerged submarines using acoustic signals.**
- Sonobuoys are **deployed from aircraft or ships and activate upon contact with water.** They are equipped with an inflatable float and a radio transmitter that stays at the surface for continuous communication.

- Underwater hydrophones are positioned at a selected depth to capture acoustic signals.
- These signals are transmitted via Very High Frequency (VHF) or Ultra High Frequency (UHF) radios to operators for real-time analysis.

**Growing Cooperation Due to Chinese Naval Expansion:**

- The U.S. and India are increasingly cooperating on defense technologies because both nations are **concerned about the growing Chinese naval presence** in the Indian Ocean Region (IOR).
- China's expanding naval capabilities are seen as a challenge to the maritime security of the region.
  - This partnership helps enhance India's defense capabilities in response to the evolving security environment.

**Critical and Emerging Technologies (iCET)**

- This cooperation is a part of the U.S.-India Initiative on Critical and Emerging Technologies (iCET), which was **launched in May 2022**.
- The iCET initiative aims to deepen collaboration in areas of advanced technologies, such as defense, artificial intelligence, and space.

**Interoperability co-produced Sonobuoys:**

- Interoperability ensures that the **naval forces of different countries can work together seamlessly**, which is critical in joint operations and maintaining maritime security in the region.
- Sonobuoys manufactured under this collaboration will be compatible and usable by both the

U.S. Navy and the Indian Navy, as well as other allied countries operating similar aircraft.

**Conclusion**

The India-U.S. collaboration on co-producing sonobuoys marks a strategic step in enhancing India's undersea domain awareness and maritime security. This initiative strengthens bilateral defense cooperation, aligns with India's "Make in India" vision, and bolsters interoperability among Quad nations. As China's naval presence grows in the Indian Ocean, such partnerships will play a crucial role in safeguarding regional stability and advancing India's maritime capabilities.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following equipment:

1. P-8I Aircraft
2. MH-60R Helicopters
3. MQ-9A Drones

How many of the U.S. Military equipment given above is/ are being used by India?

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

(c) Answer

## SIXTH-GENERATION AERO-ENGINE

**Why in News:** DRDO chief said that Sixth-generation aero-engine can be developed by tying up with foreign firms.

### Key Details

- To realise this capability DRDO chief said that the country will have to invest close to \$4 billion to \$5 billion, that is ₹40,000 crore to 50,000 crore.
- The chief said that various facilities have to be set up — testing facilities for each sub-system, a high-altitude test facility, flying test-bed, manufacturing facilities to make the disc which would need investing in a forge press which can press 50,000 tonnes.

### About the 6th Generation aero-engines

- A sixth-generation fighter is a conceptualized class of jet fighter aircraft design more advanced than the fifth-generation jet fighters that are currently in service and development.
- Several countries have announced the development of a national sixth-generation aircraft program, including China, the United States, and Russia.
- Characteristics of 6th generation aircrafts:**
  - **Digital Engineering:** Designed using digital engineering (aka model-based design)
  - **Digital Capabilities:** Advanced digital capabilities including high-capacity networking, artificial intelligence, data fusion, cyber warfare, data-to-decision and battlefield command, control and communications (C3) capabilities.
  - **Multiple Control setup:** Optionally manned, with the same airframe capable of conducting piloted, remote controlled or onboard-AI controlled missions.
  - **Use of Virtual enhancements:** Enhanced human-systems integration, with virtual cockpits presented via helmet-mounted displays which allow the pilot 360-degree vision with AI-enhanced battlefield awareness, and replacing conventional instrument panels.
  - **Advanced frameworks:** Advanced stealth airframes and avionics.
  - **Advanced weapons:**
    - ◆ Increased-range stand-off and beyond-visual-range weapons.

- ◆ Potential use of directed-energy weapons such as a laser close-in weapon system (CIWS).

### Various generation of fighters

- First generation subsonic jet fighters (mid 1940s to mid 1950s):**
  - The first generation of jet fighters such as the F-86, MiG-15 and MiG-17, had basic avionic systems with no radars or self-protection countermeasures, and were armed with machine guns or cannons, as well as unguided bombs and rockets.
  - A common characteristic of this generation of fighter was that the jet engines did not have afterburners and the aircraft operated in the subsonic regime.
- Second generation jet fighters (mid-1950s to early 1960s):**
  - The second-generation fighters saw the introduction of **air-to-air radar, infrared and semi-active guided missiles**, as well as radar warning receivers into such aircraft as the **F-104, F-5, MiG-19 and MiG-21**.
  - This generation's fighters also incorporated advances in engine design and aerodynamics, which allowed them to reach and sustain supersonic speeds in level flight.
- Third generation jet fighters (early 1960s to 1970)**
  - This generation witnessed improvements in manoeuvrability, and significant enhancements to the avionic suites and weapon systems. They were also the **first cadre of multi-role fighters such as the MiG-23, F-4, and Mirage III**.
  - Doppler radar supported a 'lookdown/shoot-down' capability, and with off-bore-sight targeting and semi-active guided radio frequency missiles like the AIM-7 Sparrow and AA-7 Apex, aerial engagements moved to beyond visual range.
  - The major change brought about by this generation aircraft was that it was no longer necessary to visually acquire opponents to neutralise them and gain control of the air.
- Fourth generation jet fighters (1970 to late 1980s)**
  - Through the 1970s and 80s the trend of improvement in avionics such as head-up displays and optimised aerodynamic design continued with the development of '**fly by wire**' fighters such as the **MiG-29, Su-27, F/A-18, F-15, F-16, and Mirage-2000**.
  - Most of this generation of fighters had the ability to both switch and swing roles between air-to-air and air-to-ground, as opposed to the previous role-dedicated aircraft. This in turn blurred the distinction between control of the air and strike missions.
  - The concept of having a half generation increment stemmed from a forced **reduction in military spending**, which resulted in a restriction in aircraft development.
  - It became more cost-effective to add '**stealth**', radar

absorbent materials, thrust vector controlled engines, greater weapons carriage capacity and to extend the range of fourth generation fighters, such as the **Hornet, Eagle and Flanker, than to design new aircraft.**

- The **F/A-18E/F Super Hornet is an example of a 4.5 generation fighter evolved from a fourth generation aircraft.** The addition of an **Active Electronically Scanned Array (AESA) radar** was a significant enough game-changing combat capability for these redesigned fighters to be deemed a generation of their own, hence the generation 4.5 rating. Some manufacturers designed new platforms, such as the **Eurofighter Typhoon, Saab JAS 39 Gripen and Dassault Rafale**, which incorporate many of the generation 4.5 advanced characteristics.
- **Fifth generation jet fighters (2005 to date):** The **F-22 Raptor**, introduced in 2005, is considered the next generation fighter aircraft. Soon to follow are aircraft designs like the **F35-Joint Strike Fighter, the Sukhoi PAK FA** (and the planned joint Russian/India variant) as well as the Chinese Chengdu J-20 which is believed to reflect features of this generation of fighter.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

- Q. What are the key technological advancements required for developing sixth-generation aero engines in India? Briefly outline the different generations of aircraft along with their examples. [10 marks, 150 words]

## COMMISSIONING OF NEW NAVAL SHIPS

**Why in News:** Prime Minister dedicated three frontline naval combatants INS Surat, INS Nilgiri and INS Vaghsheer to the nation on their commissioning at the Naval Dockyard in Mumbai.

### INS Surat (Destroyer)

- The fourth and final **stealth-guided missile destroyer** under **Project 15B** follows INS Visakhapatnam, INS Mormugao, and INS Imphal, which were commissioned over the past three years.
  - **Destroyers** are a category of warships that have high speed and manoeuvrability, greater strike capability, and longer endurance, because of which they are a key asset in various types of naval operations, mainly offensive.
- INS Surat is the **Indian Navy's first AI (artificial intelligence) enabled warship**, which will utilise indigenously developed AI solutions to enhance its operational efficiency manifold.
- A guided missile destroyer with a displacement of 7,400

tonnes and overall length of 164 metres, INS Surat is a potent and versatile platform equipped with state-of-the-art weapons and sensors, including surface-to-air missiles, anti-ship missiles, and torpedoes.

- Powered by a **Combined Gas and Gas (COGAG) propulsion set comprising four gas turbines**, it has achieved speeds in excess of 30 knots (56 km/h) during sea trials.
- Constructed at **Mazagon Dock Shipbuilders Limited (MDL)**, Mumbai.
- Designed by the Indian Navy's **Warship Design Bureau**.
- It has an **indigenous content of 75%** and is equipped with state-of-the-art weapon-sensor packages and advanced network-centric capabilities.

### INS Nilgiri (Frigate)

- The lead ship of **Project 17A**, INS Nilgiri is a major advancement over the Shivalik-class frigates, incorporating significant stealth features and reduced radar signatures through state-of-the-art technology.
- INS Nilgiri is the **first of seven frigates in Project 17A** being built by Mazagon Dock Shipbuilders Limited (MDL), Mumbai, and Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.
- Designed by the Indian Navy's **Warship Design Bureau**.
- The ships are fitted with a supersonic surface-to-surface missile system, a Medium-Range Surface-to-air Missiles (MRSAM) system, a 76-millimetre upgraded gun, and a combination of rapid-fire close-in weapon systems.
- The other six ships of this class are Himgiri, Taragiri, Udaygiri, Dunagiri, and Vindhyagiri. These are at various stages of construction at MDL, Mumbai, and GRSE, Kolkata.

### INS Vaghsheer (Submarine)

- INS Vaghsheer is the sixth **Scorpene-class submarine** under the Kalvari-class **Project 75** and is one of the most silent and versatile diesel-electric submarines in the world.
- It is designed to undertake a wide range of missions, **including anti-surface warfare, anti-submarine warfare, intelligence gathering, area surveillance, and special operations.**
- Armed with wire-guided torpedoes, anti-ship missiles, and advanced sonar systems, the submarine also features modular construction, allowing for future upgrades such as the integration of **Air Independent Propulsion (AIP)** technology.
- It has been constructed in collaboration with the Naval Group of France.
- The submarines in the current Kalvari class take their names from now-decommissioned classes of submarines named Kalvari — including Kalvari, Khanderi, Karanj — and the Vela class, which included Vela, Vagir, Vagshir.

**Benefits of Indigenization in the Indian Navy**

- **Enhanced Maritime Capabilities:** The commissioning of INS Surat, INS Nilgiri, and INS Vaghsheer strengthens the Indian Navy and makes it more effective in safeguarding maritime interests. These platforms are described as “**new frontier platforms**” that will enhance India’s security and progress.
- **Self-Reliance (Atmanirbharta):** The Prime Minister emphasizes the importance of “Atmanirbharta” (self-reliance) in defence. The fact that all three commissioned platforms were made in India is a source of national pride and a key step towards reducing dependence on foreign suppliers.
- **Boost to Domestic Economy:** The Make in India initiative in shipbuilding is described as having a positive impact on the economy. The construction of ships creates jobs not only in shipbuilding but also in related industries, particularly MSMEs.
- **Technological Advancement:** The commissioned vessels are described as being equipped with state-of-the-art systems and technologies, implying that indigenous production fosters technological development within the Indian defence industry.
- **Increased National Pride and Confidence:** The commissioning of indigenously built warships is presented as a moment of national pride.
- **Export Potential:** India’s defence production has surpassed ₹1.25 lakh crore and that the country is exporting defence equipment to over 100 nations, suggesting that indigenization contributes to India’s ability to compete in the global defence market.
- **Strengthening of the Indian Ocean Region (IOR) Presence:** The commissioning of these vessels is seen as enhancing India’s presence and capabilities in the IOR, allowing it to play a greater role in regional security and cooperation.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following pairs:

	Indian Naval Ship	Associated Project
1.	INS Surat	Project 15B
2.	INS Nilgiri	Project 17A
3.	INS Vaghsheer	Project 75

How many of the pairs are correctly matched?

(a) Only one                      (b) Only two

(c) All three                      (d) None

Answer: (c)

**BHARGAVASTRA**

**Why in News:** India has successfully tested the **Bhargavastra**, its **first micro-missile system designed to counter swarm drones**.

**Key Details**

- Bhargavastra demonstrates the **capability to detect small aerial vehicles and neutralise them** using guided micro munitions.
- **Missile capability:** Bhargavastra features **simultaneous launch capability of over 64 micro missiles**.
- **Developing agency:** Economic Explosives Ltd.
- **Design durability:** Its design accommodates operations **across various terrains, including high-altitude regions**.
- **Target range:** Bhargavastra can hit targets over **2.5 km**.
- **Detection range:** Bhargavastra is capable of detecting even small drones at **over 6 km**.

**1st Counter-Drone Micro Missiles**

**2** successful firings at Gopalpur Seaward Firing Ranges




<b>Multi-layered system hits virtual targets at over 2.5 km</b>	<b>Capable of detecting even small drones at over 6 km</b>
---	--

**Successful test witnessed by senior Army officials**

**64** micro missiles can be fired simultaneously

Developed by Economic Explosives LTD, system will be mounted on a mobile platform



**Can operate in all terrains, including high-altitude areas**

**SWARM DRONES**

- SWARM Drones stands for “**Smart War-Fighting Array of Reconfigured Modules**.”
- SWARM Drones is a **large group of multiple drones flying together as a unified and coordinated entity**.
- These drones **typically communicate with each other, synchronise their movements, and operate autonomously** to achieve specific objectives such as drone attacks, surveillance, etc.

- All the individual drones **work in unison to complete tasks using distributed coordination**, with each communication sent out by one drone providing the others with up-to-date information about their environment and roles in the mission.
- **In May 2021**, during its conflict with Hamas, the **Israel Defense Forces** became the first military to use a drone swarm in combat.
- The present air defence guns and missiles are being used to counter drone threats; however, they are practically ineffective against hundreds of swarm drones.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Recently, the term Bhargavastra was in the news. It is related to:

- (a) Intercontinental Ballistic Missile developed by DRDO
- (b) India's first micro missile system designed to counter swarm drones
- (c) Anti-Tank Guided Missile developed by DRDO
- (d) Hypersonic cruise interceptor missiles

(b) Answer

**NAG MK 2**

**Why in News:** Field Evaluation Trials of the indigenously developed Nag Mk 2, the **third-generation Anti-Tank Fire-and-Forget Guided Missile**, were successfully conducted recently at **Pokhran Field Range**.

**About Nag Mk-2**

- The Nag Mk-2 is an **indigenously made, all-weather, fire-and-forget, lock-on-after-launch, third-generation anti-tank guided missile (ATGM) developed by DRDO**.
- It also has a **top-attack capability** to strike the most vulnerable part of armoured targets.
- Nag Mk-2 is effective against modern armoured vehicles, including those equipped with Explosive Reactive Armour.
- **Range:** The Nag Mk-2 is **estimated to have a range of 7 to 10 kilometres**, a significant improvement over its predecessor, the **Nag Mark 1, which had a 4-kilometre range**.
- **HEAT warhead:** The missile also boasts a tandem **high-explosive anti-tank (HEAT) warhead for increased destructive power**.

- **Launching platform:** The Nag Mk-2 missile is launched from the **NAMICA**, an armoured vehicle. The NAMICA provides a robust and mobile platform for the Nag missile system, allowing it to be deployed quickly and effectively across various terrains.

**PRELIMS SPECIAL**

**Anti-Tank Guided Missiles (ATGM)**

- ATGMs are designed to **destroy tanks and armored vehicles** and can also be used against **fortified positions of low-speed aircraft**.
- **Fire-and-Forget Technology:** The operator locks onto the target using infrared or optical sensors, and once launched, the missile autonomously guides itself to the target.
- **Top-Attack Feature:** Modern ATGMs are designed to fly at high arcs, attacking targets from above, thus exploiting the vulnerable top armour of tanks.
- **Launching platform:** ATGMs can be launched by
  - **Infantry:** Small and portable systems that can be carried by individual soldiers
  - **Vehicles:** Armored vehicles that provided a mobile platform for ATGMs
  - **Aircraft:** Air-to-Ground launch for targeting armored vehicles from the air.
- **Example:** Nag MK 2 of India, U.S. Javelin, Israeli Spike, Russian Kornet.

**Defence Research & Development Organisation (DRDO)**

- DRDO is an agency under the **Ministry of Defence formed in 1958**.
- **Headquarters:** New Delhi.
- It has a **network of laboratories** engaged in developing defence technologies covering various fields, like aeronautics, armaments, electronics, land combat engineering, life sciences, materials, missiles, and naval systems.
- DRDO has also developed several ballistic missiles under its **Integrated Guided Missile Development Programme**, which includes missiles like **Prithvi, Trishul, Agni, Akash, and Nag**.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding the Nag MK 2 missile:

1. It is a 4th generation Anti Tank Guided Missile.
2. It is developed by DRDO.
3. It is operated on fire-and-forget technology.

Which of the statements given above is/are correct?

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

(b) Answer

## LA PEROUSE MULTINATIONAL EXERCISE

**Why in News:** INS Mumbai is participating in the fourth edition of the Multinational Exercise LA PEROUSE.

### About LA PEROUSE 2025

- La Perouse is a **biennial, French Navy-led** multilateral training exercise demonstrating a shared commitment to enhance regional and international cooperation in support of a free and open Indo-Pacific.
- **Participating Navies:** Indian Navy, Royal Australian Navy, French Navy, Royal Navy (UK), United States Navy, Indonesian Navy, Royal Malaysian Navy, Republic of Singapore Navy and Royal Canadian Navy.
- The naval exercise is being held in the straits between the Indian Ocean and the Pacific Ocean: **Malacca, Sunda and Lombok**. These straits, mainstays of global maritime trade, are subject to numerous human-induced risks such as maritime accidents and environmental hazards, illegal immigration, drug trafficking, and natural risks like earthquakes and tsunamis.
- During this exercise, all navies will train in the use of **IORIS**, a communication and coordination system dedicated to the exchange of information, documents in order to effectively and collectively face a maritime crisis in a synchronized manner.
- The exercise will witness complex and advanced multi-domain exercises including **surface warfare, anti-air warfare, air-defence, cross-deck landings and tactical**

**manoeuvres**, as also the constabulary missions such as VBSS (Visit, Board, Search and Seizure) operations.

### INS Mumbai

- INS Mumbai is the third of the Delhi class destroyers, indigenously built and commissioned into the Indian Navy on 22 January 2001.
- The Ship was built at Mazagon Dock Limited in Mumbai.
- The ship completed its mid-life upgrade and joined Eastern Naval Command in Visakhapatnam on 08 December 2023.

## SLINEX 24

**Why in News:** The bilateral Naval exercise between India and Sri Lanka, SLINEX 24 (Sri Lanka - India Exercise 2024) was conducted from 17 - 20 Dec 24 at Visakhapatnam.

### Key Details

- INS Sumitra of the Eastern Fleet, along with a Special Forces team participated from the Indian side, whereas, SLNS Sayura, an Offshore Patrol Vessel, along with a Special Forces team participated from the Sri Lanka Navy.
- SLINEX series of bilateral exercises were initiated in 2005 and since then regular exercises have been conducted.
- The current edition of the exercise has further strengthened the ties between the two maritime neighbours and contributed towards creating a safe and rule-based Maritime domain thereby taking forward the GoI's resolve and vision of Security and Growth for All in the Region (SAGAR).

Joint Exercises by Army		Joint Exercises by Navy		Joint Exercise by Air Force	
Country	Exercise	Country	Exercise	Country	Exercise
Australia	Ex AUSTRAL HIND	Australia	AUSINDEX	Bangladesh	Table Top Ex
Bangladesh	Ex SAMPRITI	Bangladesh	IN-BN CORPAT	Israel	Ex Blue Flag-17
China	Ex HAND IN HAND	Brazil & South Africa	IBSAMAR	Oman	Ex EASTERN BRIDGE-IV
France	Ex SHAKTI	France	VARUNA	Russia	Ex INDRA-17
Indonesia	Ex GARUDA SHAKTI	Indonesia	IND-INDO CORPAT	Singapore	JOINT MILITARY TRAINING
Kazakhstan	Ex PRABAL DOSTYK		IND-INDO BILAT	Thailand	Ex SIAM BHARAT
Kyrgyzstan	Ex KHANJAR	Malaysia	IN-MN Tabletop Ex	UAE	DESERT EAGLE-II
Maldives	Ex EKVVERIN	Myanmar	IMCOR	UK	INDRADHANUSH-IV
Mongolia	Ex NOMADIC ELEPHANT		IN-MN BILAT	USA	RED FLAG 16-1
Myanmar	IMBEX	Oman	Naseem-al-Bahr	Multinational Air Exercise	Ex Samvedna with Bangladesh, Nepal, Sri Lanka, UAE

Nepal	Ex SURYA KIRAN	Russia	INDRA NAVY		
Oman	AL NAGAH	Sri Lanka	SLINEX		
Russia	Ex INDRA	Singapore	SIMBEX		
Seychelles	Ex LAMITTYE	Thailand	INDO-THAI CORPAT		
Sri Lanka	Ex MITRA SHAKTI	UAE	In-UAE BILAT		
Thailand	Ex MAITREE	UK	KONKAN		
UK	Ex AJEYA WARRIOR	USA	MALABAR		
USA	Ex YUDHABHAYAS		RIMPAC (Multilateral)		
	Ex VAJRA PRAHAR	Multilateral Exercise by Brunei	ADMM+ Exercise		
Vietnam	VINBAX	Multilateral Exercise by Indonesia	Ex KOMODO		
Multinational (ADMM Plus)	Ex FORCE 18	Multilateral Exercise by India	MILAN		

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. How many of the following pairs of military exercises of India with participating country are correctly matched:

Military Exercise	Participating Country
-------------------	-----------------------

- |                   |              |
|-------------------|--------------|
| 1. Ex KOMODO      | Indonesia    |
| 2. SIMBEX         | Sri Lanka    |
| 3. Naseem-al-Bahr | Saudi Arabia |
| 4. PRABAL DOSTYK  | Uzbekistan   |

Select the correct Answer:

- |                |              |
|----------------|--------------|
| (a) Only one   | (b) Only two |
| (c) Only three | (d) All four |

Answer: (a) 1 only

**Evaluate yourself before  
UPSC does**

**Start Daily answer writing for UPSC CSE**  
by Chahal Academy: A Socially Responsible Institute.

Scan QR Code

**Question of The Day Will be Uploaded  
Daily at 10 am and Approach Answer at  
9 pm (Monday to Saturday)**

## REDEFINING MASCULINITY: ENGAGING MEN IN THE FIGHT FOR GENDER EQUALITY

**Why in News:** A recent article in *The Hindu* emphasized the pivotal role men play in combating gender-based violence, especially violence against women.

### Key Details

- Every year, November 25 marks the **International Day for the Elimination of Violence Against Women**, yet violence against women remains a serious global issue.
- **Nearly one in three women worldwide experiences some form of violence**, often at the hands of men.
- Despite decades of **advocacy and awareness campaigns**, the problem persists. This indicates the urgent need for new approaches that not only focus on supporting women but also on changing the behavior and attitudes of men.

### UNESCO's Transforming MENTALities Initiative

- It aims to **redefine men's roles in gender equality efforts**. Traditionally, gender issues have been seen as concerns mainly for women, with men either being bystanders or, in some cases, perpetrators of discrimination. This initiative **challenges rigid and stereotypical ideas of masculinity**, promoting a **more progressive and inclusive role for men** in gender discussions.
- A key aspect of the initiative is promoting **alternative models of masculinity**. The idea is to **move away from outdated notions of dominance, aggression, and control** and replace them with values like **support, care, empathy, and partnership**.
- The initiative is aligned with the **United Nations' Agenda 2030**, which includes **Sustainable Development Goal 5 on gender equality**.
- The goal is to create an **inclusive and equal world**, where men and women can participate equally in all aspects of life. Transforming gender roles is **essential to achieving this broader development agenda**.

### The Role of Men in Ending Violence

- While men are often the perpetrators of violence, they **can also be part of the solution**. Addressing violence against women requires challenging **traditional ideas of masculinity**, which associate manhood with **strength, aggression, and control**.

- These outdated notions contribute to a culture where violence is normalized. Instead, a new model of masculinity should be promoted—one based on **equality, empathy, and non-violence**.

### Why Violence Against Women is a "Men's Issue"

- Although violence against women primarily affects women, it is a **societal issue that concerns everyone, including men**. From a young age, boys are conditioned by social norms that equate masculinity with **dominance and control** while discouraging emotional expression.
- This **hurts both men and women**—it limits men's ability to form healthy relationships and pushes them toward aggression. Breaking these cycles of **toxic masculinity** is essential for creating a safer and more just society.
- Over the last **two decades, research and grassroots movements** have increasingly focused on involving men in gender equality efforts. Studies show that when men actively **challenge harmful gender norms**, they help create **positive change in society**.
- Many men are beginning to **reject traditional notions of masculinity** and are advocating for gender equality. This shift is crucial because sustainable change requires the **participation of men in dismantling harmful social norms**.

### The India Report: "Engaging Men and Boys"

- UNESCO partnered with the **International Center for Research on Women (ICRW)** to **study and document effective strategies** for engaging men in gender equality efforts ("**Engaging Men and Boys: A Report on Pathways to Gender Equality in India**.")
- This report highlights **10 pioneering programs across India** that actively **engage men and boys in tackling gender inequality**. These programs serve as **models for change**, demonstrating practical ways in which men can be mobilized to challenge discrimination, support gender justice, and create a more equal society. **Some of these programs are:**

#### Mardon Wali Baat Initiative

- **Organization:** The YP Foundation
- **Method:** Uses **storytelling and social media** to engage **young men** in discussions about positive masculinity.
- **Impact:** Helps young men **think critically** about the gender stereotypes they have learned since childhood and encourages them to adopt **values of respect and equality**.

### 'Gender Equity Movement in Schools (GEMS)' Initiative

- **Collaboration between:** ICRW and the Rajasthan Department of Education
- **Method:** Uses **interactive classroom activities** to teach **adolescent boys** about gender equality and the negative effects of toxic masculinity.
- **Impact:** Changes boys' views on traditional gender roles.
  - **Example:** A boy in the program initially believed that **boys should only do outdoor work** while **household chores were for women**. After attending the sessions, he realized that **both men and women should share responsibilities at home**.
- **Wider Effect:** When young boys **change their beliefs**, they influence their families and communities, creating a **larger social transformation**.

### 'Dekh Rekh' and 'Hamari Shaadi' Initiatives

- **Objective:** Encourage **men to take an active role in family life**, especially in **nutrition and family planning**.
- **Method:** Teach men that gender equality is **not just an abstract concept** but something that should be part of **daily life and small actions**.
- **Impact:** When men **start making small changes**, such as participating in household work and supporting their wives in decisions, it **gradually changes deep-rooted gender biases in society**.

### The Role of Positive Role Models

Change is possible when men and boys have **positive role models** who practice **equitable behaviors**. These role models show that **gender equality is important** through their actions. **They demonstrate:**

- **Taking care of household responsibilities** (e.g., helping with chores or childcare).
- **Rejecting violence** as a solution to problems.
- **Practicing empathy and vulnerability**, showing emotions without fear of being judged.

### The Influence of Public Figures

- **Public figures can normalize gender equality** by setting positive examples.
  - **Example:** A famous Indian cricketer publicly committed to **paternity leave**, which sparked a national conversation about **shared parenting**. This action helped show that **parenting is a shared responsibility** and that **men can and should be involved** in family care.
- Actions like these challenge outdated ideas of masculinity. They show that **being a man** can mean embracing equality, care, and partnership in relationships. These changes **benefit both individuals and communities**, shifting how society views **manhood**.

### Way Forward

- True gender equality can only happen when **men actively participate** in the process.
  - **Rejecting violence** is just one part of this journey.
  - **Challenging stereotypes** and cultural norms that support violence is essential.
  - **Men must see themselves as key contributors** to societal change, helping to dismantle harmful and outdated ideas about what it means to be a man.
- Men must recognize the **privileges** they gain from the patriarchal system. Patriarchy often gives men **power and advantages**, but it also comes with societal pressures and expectations (e.g., being "tough" or always in control).
- By understanding these pressures and privileges, men can begin to **reshape their roles** and contribute to **breaking down toxic masculinity**. This process helps build a society where **both men and women** can be equal partners.
- Men should reflect on what it truly means to be a man, rethinking traditional ideas that harm both men and women. By **embracing healthier and more positive definitions of manhood**, men can help create a society where **violence is rejected**, and everyone is empowered to thrive.
- In the new year, we should **celebrate the men and boys** who are actively **challenging traditional ideas of masculinity** and advocating for **gender equality**.
- By **redefining masculinity**, we can build a world where **no one is subjected to violence** and where every person, regardless of gender, has the **freedom and support to succeed**.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. 'MENtalities Initiative' is launched by:

- (a) The United Nations Educational, Scientific and Cultural Organization (UNESCO)
- (b) The United Nations Children's Fund (UNICEF)
- (c) The World Economic Forum (WEF)
- (d) The Young Global Leaders

Answer: (a)

## KERALA'S DECLINING BIRTH RATES AND ITS SOCIAL IMPLICATIONS

**Why in News:** The maternal mortality ratio (MMR) is a key indicator of maternal health and healthcare effectiveness. Kerala, which has traditionally had the lowest MMR in India, is witnessing a rise in the ratio, causing concern among health officials. **However, the reasons behind this increase are statistical rather than an actual surge in maternal deaths.**

### Kerala's MMR and Its Current Status

- As per the **Sample Registration System (SRS) 2018-20** report by the **Registrar-General of India**, Kerala's MMR was **19 per 1,00,000 live births**, the lowest in India.
- However, Kerala's **State Health Department** estimates the **actual figure at 29**, based on real-time monitoring of institutional deliveries (since Kerala has **nearly 100% institutional deliveries**).
- During the COVID-19 pandemic, **many pregnant women lost their lives due to the virus and related complications**. Despite this temporary setback, Kerala had generally maintained **low maternal mortality rates**.

#### Paradoxical Situation:

The apparent increase in MMR is **not because more women are dying during childbirth**, but because **fewer childbirths are happening** in Kerala.

The **denominator (number of live births)** has significantly decreased, pushing the ratio upward.

**Note:** Kerala's birth rate has declined drastically.

- Earlier, the State used to record **5 to 5.5 lakh live births annually**.
- Now, **the number has dropped to around 3.4 - 3.9 lakh births**.

According to **Economic and Statistics Department** data, the latest birth count stands at **3,93,231**.

This shrinking number of live births has **artificially inflated** the MMR, even though maternal deaths haven't significantly increased.

### Changing Demographics in Kerala

**Fertility rates** in Kerala have been steadily declining. **Since the 1980s**, Kerala has averaged around **5.5 lakh live births annually**. However, this has gradually fallen:

- In 2016, the number of live births dropped below 5 lakh for the first time, recording **4,96,262 births**.
- From 2018 onward, the number has been consistently falling, never exceeding the 5-lakh mark again.
- In 2021, the recorded figure was **4,19,767 live births**.

### Concerns About the Social Impact

- **Social fabric impact:** The **decreasing number of births** is affecting the **age structure** of the population, the **workforce**, and potentially the **economic and social systems**.

- The **shrinking younger population** could lead to challenges such as:
  - A **smaller workforce** to support an aging population.
  - Increased **dependency ratios**, with fewer young people supporting elderly care.
  - Changing **family structures** and **traditional support systems**, as fewer children are born to support aging parents.

### MMR and the Sustainable Development Goals (SDGs)

**Point to remember:** Kerala had set an ambitious goal to achieve an **MMR of 20** (per 1 lakh live births) by **2030**, as part of the **Sustainable Development Goals (SDGs- Goal-3)**.

- However, due to the **falling birth rates**, it is now feared that this goal is **unachievable**.
  - **According to an expert**, MMR is likely to reach **32 in 2024-25**, which is much higher than the target.
  - The decline in births is outpacing the state's efforts to control maternal mortality, meaning **demographic changes** are becoming a major factor in the MMR increase.

### Demographic Transition

- **S. Irudaya Rajan**, Chairman of the **International Institute of Migration and Development**, explains that the **fertility decline** in Kerala has been a **long-term trend**.
  - Once fertility rates drop, it's **difficult to reverse** them. This is due to the **demographic transition**, where a society moves from high birth rates and high death rates to low birth rates and low death rates.
  - As Kerala's population has already undergone significant changes in fertility and mortality, **reversing this trend is unlikely**.

### Female Population in Reproductive Age

- According to **Census 2011**, the **female population in the reproductive age group** (15-49 years) in Kerala was **93,32,494**.
- The **Registrar-General's projected figure for 2021** was slightly lower, at **92,23,500**. This projection suggests a small decline in the number of women in this reproductive age group over the 10-year period.

### Issues with Birth Data Reporting and Publication

- The **Vital Statistics Report (VSR)**, which is crucial for tracking demographic trends such as birth rates, has not been published since **2021**.
- Kerala's **State Health Department** has cited **reporting errors** as the reason for the delay in the release of the VSR. These errors could be related to the accuracy or timeliness of the data collection process.

### Concerns About Birth Registration

There is an ongoing **debate in Kerala** about whether the **birth registration process** is functioning properly. **Some key concerns include:**

- **Timeliness:** Are births being registered promptly and accurately?
- **Coverage:** Is every birth being captured, or are there gaps in data collection?
- **Quality of data:** Are the birth records reliable and free from errors?

These issues may lead to **inaccuracies in official statistics** on live births and maternal mortality, making it difficult to track demographic trends and health indicators accurately.

### Lack of Public Access to Birth Data

- **Official data** related to childbirths and birth registration, which are vital for demographic analysis, are currently **not available in the public domain**.
  - This lack of access to data could hinder policymakers, researchers, and health professionals from making informed decisions based on accurate and up-to-date demographic information.

Kerala's declining fertility rates, combined with demographic shifts, are reshaping the state's social and health landscape. While the state has made significant strides in maternal health, the reduction in birth rates, migration, and aging population are presenting new challenges. The current rise in maternal mortality ratio is more reflective of demographic changes than medical setbacks, signaling the need for urgent policy responses to address the impact on the state's economy, social systems, and future healthcare needs. The consequences of these trends will become even more pronounced in the coming decades, requiring comprehensive strategies for sustainable development.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

Q. In order to enhance the prospects of social development, sound and adequate health care policies are needed particularly in the fields of geriatric and maternal health care. Discuss. [150 Words] [10 Marks].

## CLIMATE CHANGE AND HUMAN TRAFFICKING

**Why in News:** West Bengal has experienced five tropical cyclones since May 2020, including Amphan and Yaas. These cyclones have destroyed livelihoods, particularly in coastal and rural areas like **the Sundarbans, pushing people into poverty**.

### Key Details

- **Increased Migration:** The destruction caused by these disasters has forced many people, especially in the Sundarbans, to migrate in search of better livelihoods. **This migration exposes them to greater risks, particularly women and children, who are more vulnerable to exploitation by traffickers.**

- **Exploitation by Traffickers:** Traffickers take advantage of the vulnerabilities created by climate change and socio-environmental factors. After disasters, people often have **limited access to essential services like healthcare, education, and employment**, making them more susceptible to trafficking.
- **Policy Imperatives:** Governments, especially at the **state and national levels**, must recognize climate change as a **driver of migration and human trafficking**. This recognition can influence the formulation of **policies** addressing both issues simultaneously.

### Prohibition of Traffic in Human Beings (Article 23 in Constitution of India)

**Human Trafficking:** Article 23 explicitly prohibits **traffic in human beings**, which includes acts such as the **buying and selling of individuals** (women, children, and men), **immoral trafficking**, including **prostitution**, and practices like **devadasis** (a form of ritualized prostitution).

- **Relevance to West Bengal:** The rise in **human trafficking** cases in **West Bengal**, especially in the wake of **climate-induced displacement** caused by **cyclones** like **Amphan** and **Yaas**, directly violates this constitutional provision. As migrants, particularly **women and children**, are lured by traffickers with false promises of work, they are subjected to **exploitation**, which is prohibited under Article 23.

### Trafficking Data and Case Analysis

- **Missing Persons:** According to the **National Crime Records Bureau (NCRB)**, **58,871 people** went missing in **West Bengal in 2022**, out of which **53,655 were women** and **12,455 were children**. This indicates a **high rate of vulnerability** to trafficking, especially among **women and children**.
- **Reported Cases of Trafficking:** The NCRB report shows **67 cases of human trafficking** in 2022, involving **78 victims**. The statistics reveal the significant presence of **trafficking networks** in the state.
- **Conviction Rate:** The **conviction rate** for human trafficking cases in **West Bengal** was **55%** in 2022, which suggests that while the **law enforcement** is active, there is room for **improvement** in terms of **investigations and convictions**.
- **Increase in Trafficking Cases:** The number of trafficking cases reported in **West Bengal** increased from **59 cases in 2020** to **61 in 2021**, and **67 in 2022**. This steady rise indicates a **growing challenge** in **combating trafficking**.

### The Role of NGOs and Civil Society

- **ILFAT's Role:** **ILFAT (Integrated Leaders Forum Against Trafficking)** is a significant organization that has over **2,800 members** spread across **seven states**. It has raised concerns about the need to address **climate change** as a key factor influencing human trafficking. ILFAT's members are actively working to **support survivors**,

spread awareness, and advocate for better **policy interventions**.

- **Need for Integrated Approaches:** ILFAT's report stresses the importance of recognizing the link between **climate change** and **trafficking** for effective **policy interventions**. Integrating climate change into the **anti-trafficking strategies** can provide **more holistic solutions**.

### Lured with Job Promises

- **Trafficking and False Promises:** One of the primary methods traffickers use, is to **lure individuals**, especially **women and children**, with **false promises of jobs** in cities or other states. However, these promises often turn out to be **deceptive**, and victims are either sold or forced into **exploitative labor** or **sex trafficking**.
- **Exploitation During Migration:** As **migrants** from rural areas to cities are already **vulnerable**, their risk of being **exploited by traffickers** increases, especially when **climate-induced disasters** push them into migration without **adequate resources** or knowledge of the risks.

### Case Study – Neha's Story

- **Personal Account of Trafficking:** The story of **Neha** (name changed), a trafficking survivor, illustrates the devastating impact of **climate-induced migration**. After **Cyclone Amphan** destroyed her village in the **Sundarbans**, she was **lured** by a trafficker who promised her **work** in another state.
  - **Deception and Trafficking:** Neha thought she was going to work in a legitimate job, but she was **sold** to another person.
  - **Rescue and Awareness:** Neha was later **rescued** and now works with ILFAT to spread **awareness** about **human trafficking**, especially in **climate-affected regions** like the **Sundarbans**.

### Way Forward:

- The **intersection of climate change, poverty, and migration** is creating a **complex challenge** in combating human trafficking in **West Bengal**, especially in areas like the **Sundarbans**. There is a need to **integrate climate change** as a **factor** in **anti-trafficking policies** to make them more effective.
- Governments and NGOs must work together to address the **root causes** of trafficking, which include **climate-induced displacement, poverty, and lack of resources**.
- **Awareness campaigns** and **training** for vulnerable communities on recognizing **trafficking risks** are essential in reducing exploitation.

## EXPECTED QUESTIONS FOR UPSC CSE

### Prelims MCQ

- Q. How does climate change contribute to an increase in human trafficking?
- By directly increasing global wealth disparities
  - By displacing vulnerable populations due to extreme weather events
  - By creating new industries requiring low-cost labor
  - By improving agricultural yields in affected areas

(b) :Answer

### Descriptive Question

- Q. Climate change and human trafficking are interconnected challenges that disproportionately affect vulnerable populations. Discuss the measures needed at national and global levels to address these overlapping issues. [150 words] [10 marks]

## CISF'S EFFORTS CUT SUICIDE RATES BY 40%

**Why in News:** The Central Industrial Security Force (CISF) undertook significant measures to address the alarming rates of suicide among its personnel.

### Reduction in Suicide Rates within CISF

- The **suicide rate within CISF** has significantly decreased by **40%**, from a higher rate to **9.87 suicides per lakh** in 2024, as compared to the **national suicide rate of 12.4 per lakh** in 2022.
- This marks a **substantial improvement** as it is the **first time in the last five years** that the CISF suicide rate has dropped below the national average.
- The decrease is attributed to the **proactive measures** taken by CISF to address mental health and suicide prevention, making it an exemplary model in improving **personnel welfare** within the **Central Armed Police Forces (CAPFs)**.

**Challenges Faced by CAPFs (Stress and Mental Health Issues):** **Suicides among force members** have been identified as a critical concern in **CAPFs**.

- **Factors contributing to suicides include:**
  - **Stress:** Intense work pressure due to the nature of the job.
  - **Prolonged Family Separation:** Many personnel face long periods away from their families (emotional and mental strain).

- **Personal Issues:** Including financial problems, personal losses, etc.
- These factors create a **complex issue** that requires multifaceted intervention, especially within high-stress professions like the armed forces and paramilitary forces.

### Proactive Steps Taken by CISF:

- **Personalized Engagements:** Commanding officers regularly visit **duty posts** to ensure **direct communication** with the force members. This fosters trust and helps officers identify any early signs of distress or mental health challenges among the personnel.
  - **Briefing-Debriefing Sessions:** These sessions are held daily to allow personnel to voice their concerns, share challenges, and receive guidance, creating an **open environment** for addressing mental health issues.
- **Online Grievance Portal:**
  - The CISF has introduced an **online grievance portal**, enabling the **timely resolution of complaints** at all levels, right up to the **Director General (DG)** of the force. This portal ensures that personnel can report issues quickly and effectively.
  - This **systematic approach** helps reduce stress related to unresolved grievances and offers a more structured way of managing concerns, reducing potential mental health strain.
- **24x7 Tele-Counseling and Personal Counseling:**
  - **Mental health support** has been enhanced through **24x7 tele-counseling services**, allowing personnel to seek help at any time of the day or night.
  - Additionally, **personal counseling** sessions are available, offering one-on-one support for individuals facing significant mental health challenges.
  - **Around 4,200 CISF personnel** had received help through this facility by **September 2024**.
- **Collaboration with AIIMS:**
  - A comprehensive **mental health study** was conducted in collaboration with **AIIMS (All India Institute of Medical Sciences)** in New Delhi. The study aimed to assess the state of mental health within the force and come up with **actionable recommendations** for improvement.
  - These recommendations are being implemented at the unit level, ensuring that mental health support is tailored to the specific needs of different force units.

### National Suicide Trends:

- In India, **national suicide rates** have been on the rise in recent years. According to the **National Crime Records Bureau (NCRB)** data:
  - The suicide rate rose from **9.9 per lakh** population in 2017 to **12.4 per lakh** in 2022.
- This rise reflects a **growing mental health crisis** across

the country, making the issue of **suicides** more urgent, especially among high-risk populations like security forces.

A recent article in *The Lancet* has reignited discussions on suicide prevention, highlighting the lack of government action despite the existence of a **National Suicide Prevention Strategy (NSPS)**.

Suicide remains a major public health issue in India, with more than **1 lakh lives lost annually**, making it the **leading cause of death among individuals aged 15-29**. The increasing suicide rate, which rose from **10.2 per 1,00,000 in 2019 to 11.3 per 1,00,000 in 2022**, underscores the urgent need for intervention.

### The National Suicide Prevention Strategy (NSPS)

The NSPS was launched in **November 2022** as a blueprint for reducing suicide rates in India. Its key goals include:

- **Establishing effective surveillance mechanisms** for tracking suicides within three years.
- **Setting up psychiatric outpatient departments** in all districts under the **District Mental Health Programme (DMHP)** within five years.
- **Integrating a mental well-being curriculum** into all educational institutions within eight years.
- **Developing guidelines for responsible media reporting** of suicides.
- **Restricting access to means of suicide**, such as pesticides and certain medications.

Despite these well-defined objectives, **little progress has been made** in implementing the strategy, leading mental health experts to criticize the lack of political commitment.

CISF's efforts are crucial in creating a healthier work environment within the CISF and may serve as a model for other paramilitary and armed forces dealing with similar challenges. Also, the rise in suicide rates in India underscores the importance of such proactive measures not just for security forces, but across society as a whole.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

Q. Critically analyze the factors contributing to stress and mental health challenges in paramilitary forces. Discuss the CISF's approach and suggest additional measures to ensure the psychological well-being of security personnel in India. [250 words] [15 marks]

## NO-DETENTION POLICY SCRAPPED

**Why in News:** The Centre government has scrapped the no-detention policy in schools governed by it, allowing students of Classes 5 and 8 to be held back from the ongoing academic session.

### Key Details

- Now if a student does not pass the exam in the first instance, **he/she will be given a shot at a re-exam within two months**. Failing to clear that will result in the student being held back in that class.
- The decision will impact around 3,000 Central schools, including Kendriya Vidyalayas, Jawahar Navodaya Vidyalayas, Sainik Schools, and Eklavya Model Residential Schools.
- The **Centre's decision comes five years after it amended the Right to Education Act**, allowing the states and the Centre to take a call on detaining students in Classes 5 and 8. Since then, some states have chosen to scrap it.

### No-detention Policy

- **Section 16** of the Right of Children to Free and Compulsory Education (RTE) Act of 2009 prohibited holding back or expelling a child.
  - According to it, no child admitted to a school shall be held back in any class or expelled from school till the completion of elementary education i.e. till Class 8.
- **Rationale:** Repeating a class could be demotivating for a child and result in him or her dropping out.
  - The policy was meant to ensure that a student completes at least elementary education without abandoning school.
  - The policy factored in the possibility that a student may have failed an exam because of inadequacies in the education system.
- **Continuous and Comprehensive Evaluation (CCE):** CCE was a key concept under the no-detention policy.
  - It meant a student's understanding and application of knowledge would be assessed through continuous evaluation.
  - The Act added that no child shall be required to pass any board examination until completion of elementary education.

### Amendment in the RTE Act

- The **amendment to the RTE Act replaced section 16** with a section that specified there would be a regular examination at the end of the academic year in Classes 5 and 8.
  - If the child fails the exam, they will be given additional instruction and a re-exam within two months.
  - Failing this, the appropriate government may allow schools to hold the child back.
  - States and the Centre would decide on holding back students in schools under their purview.
- **Reason for Amendment:** According to the statement of objects and reasons for the amendment, section 16 of the Act did not show healthy results.
  - Children were routinely being promoted from one class to the higher one without any linkage to the learning they had attained.

- There were instances where the children's attendance was very low and consequently, they were not able to learn meaningfully which defeated the purposes of the Act.

### Arguments in Favour of No-Detention Policy

- **Reduction in Dropout Rates:** The TSR Subramanian committee (2016) noted that the policy has kept children in the learning cycle and increased enrollment rates, especially for marginalized groups like scheduled castes, scheduled tribes, and girls.
- **Inclusivity and Fear Reduction:** The policy removes the fear of failure among students, particularly those from disadvantaged backgrounds.
  - Detaining children from marginalized groups disproportionately affects them, as the system itself is often responsible for their failure.
- **Lack of Evidence Linking No-Detention Policy to Declining Learning Outcomes:** There is no concrete evidence proving that no-detention itself caused the decline in learning levels. Other factors, such as poor infrastructure and teaching quality, may be responsible.
- **Empirical Evidence of Success:** Data from CBSE and State Boards showed an increase in pass percentages in Class 10 and 12 exams from 2009 to 2013.
  - The gross enrollment ratio (GER) at the elementary level also rose steadily after the policy was implemented.

### Arguments Against No-Detention Policy

- **Decline in Learning Levels and low learning outcomes:** Data from Pratham's Annual Status of Education Report (ASER) showed a decline in learning levels, with a 10 percentage point drop from 2010 to 2013 in the ability of Class 5 students to read Class 2 texts.
- **Low Teacher Accountability and Student Motivation:** The policy sends a message that 'performance does not matter,' leading to low motivation among students and reduced accountability among teachers.
- **Migration to Private Schools:** The decline in the quality of education in government schools under the no-detention policy led to increased migration of students to private schools.
- **Other arguments include:**
  - Lack of preparedness of the education system to support the Policy.
  - Lack of proper implementation of CCE and its integration with teacher training.
- In 2015, all the states were asked to share their views on the No Detention Policy. Most of the states suggested modifications to the Policy in its current form.

### States and No-detention Policy

- Delhi, Punjab, Madhya Pradesh, Rajasthan, West Bengal, Bihar and Gujarat have scrapped the policy.

- Andhra Pradesh, Arunachal Pradesh, Goa, Chhattisgarh, Karnataka, Kerala, Maharashtra, Manipur, Mizoram, Odisha, Tamil Nadu, Telangana, Uttar Pradesh, Ladakh, Lakshadweep, Chandigarh, Andaman and Nicobar Islands (and Haryana and Puducherry, where a final decision on the policy has not been taken) continue to implement the no-detention policy.

#### Right to Education in India: Constitutional and Statutory Provisions

- **Article 21-A:** The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may, by law, determine.
- **Right of Children to Free and Compulsory Education (RTE) Act, 2009:**
  - It represents the consequential legislation envisaged under Article 21-A.
  - The title of the RTE Act incorporates the words ‘free and compulsory’.
  - ◆ **Free Education:** No child has to pay any fees or expenses that could stop them from starting or finishing elementary school—unless their parents choose to send them to a school that isn’t supported by the government.
  - ◆ **Compulsory Education:** There is an obligation on the appropriate Government and local authorities to provide and ensure admission, attendance and completion of elementary education by all children in the 6-14 age group.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

Q. What is the no-detention policy for elementary education in India? Critically analyse the centre government’s decision to scrap the no-detention policy. [15 marks] [250 words]

## POSTHUMOUS ASSISTED REPRODUCTION

**Why in News:** The Delhi High Court allowed a couple in their sixties to gain access to their now-deceased son’s sperm sample, effectively paving the way for posthumous assisted reproduction.

#### Posthumous Assisted Reproduction (PAR)

- Posthumous assisted reproduction (PAR) is the process by which Assisted reproductive technologies (ART), including in vitro fertilisation (IVF) and cryopreservation of gametes (eggs and sperm) and embryos are used to establish pregnancy and produce genetic offspring after the death of the parent.

#### Challenges Associated with Posthumous Assisted Reproduction (PAR)

- **Ethical Concerns**
  - **Consent and Autonomy:** Debates over whether explicit consent from the deceased (e.g., cryopreservation for future use) is sufficient for posthumous reproduction.
    - ◆ Risk of exploiting reproductive material without the deceased’s explicit posthumous reproduction intent.
  - **Commodification of Genetic Material:** Treating semen as property risks reducing human tissues to tradable commodities, despite court prohibitions on commercial use.
- **Social Implications**
  - The emotional pressure on families to preserve the family legacy through grandchildren prioritises genetic connectedness over child welfare.
  - It reinforces patriarchal norms valuing biological lineage over alternative family structures.
  - **Bodily Autonomy:** There are concerns about surrogates and egg donors being marginalized in decisions involving posthumous reproduction.
- **Gaps in Existing Legislation**
  - **ART Act Limitations:** The ART (Regulation) Act, 2021, applies only to infertile married couples, excluding unmarried individuals or grandparents. It mandates prior consent for posthumous gamete collection but lacks clarity on consent validity for unmarried deceased persons.
  - **Surrogacy Act Limitations:** The Surrogacy (Regulation) Act, 2022, does not address posthumous reproduction involving deceased unmarried individuals or their legal heirs.
- **Implementation Hurdles**
  - **Lack of Standardized Protocols:** No guidelines for handling posthumous gamete use, leading to inconsistent judicial decisions.
  - **Surrogacy and Donor Coordination:** Logistical challenges in coordinating surrogates, egg donors, and legal guardianship post-birth.

#### Laws Related to Fertility and Reproduction in India

- **Assisted Reproductive Technology (Regulation) Act, 2021:**
  - The Act provides for the regulation of Assisted Reproductive Technology services in the country.
  - It defines ART to **include all techniques** that seek to obtain a pregnancy by handling the sperm or the oocyte (immature egg cell) **outside the human body and transferring the gamete or the embryo into the reproductive system of a woman.**
  - The Act provides that every ART clinic and bank must be registered under the National Registry of Banks and Clinics of India.

- The **National Registry** is established under the Act and acts as a **central database** with details of all ART clinics and banks in the country.
- **Rights of a child born through ART:** A child born through ART will be deemed to be a biological child of the commissioning couple and will be entitled to the rights and privileges available to a natural child of the commissioning couple. A **donor will not have any parental rights over the child.**
- **National and State Boards:** The Act provides that the National and State Boards for Surrogacy constituted under the Surrogacy (Regulation) Bill, 2019 acts as the National and State Board respectively for the regulation of ART services. The State Boards coordinates enforcement of the policies and guidelines for ART as per the recommendations, policies, and regulations of the National Board.
- **Key powers and functions of the National Board**
  - ◆ Advising the central government on ART related policy matters,
  - ◆ Reviewing and monitoring the implementation of the Bill,
  - ◆ Formulating code of conduct and standards for ART clinics and banks,
  - ◆ Overseeing various bodies to be constituted under the Bill.
- **Surrogacy (Regulation) Act, 2021**
  - The Act defines surrogacy as a practice where a woman gives birth to a child for an intending couple with the intention to hand over the child after the birth to the intending couple.


- **Regulation of surrogacy:** The Act **prohibits commercial surrogacy, but allows altruistic surrogacy.**
  - ◆ Altruistic surrogacy involves no monetary compensation to the surrogate mother other than the medical expenses and insurance coverage during the pregnancy.
  - ◆ Commercial surrogacy includes surrogacy or its related procedures undertaken for a monetary benefit or reward (in cash or kind) exceeding the basic medical expenses and insurance coverage.
- **Eligibility criteria for surrogate mother:** The surrogate mother has to be:
  - ◆ a close relative of the intending couple;
  - ◆ a married woman having a child of her own;
  - ◆ 25 to 35 years old;
  - ◆ a surrogate only once in her lifetime;
  - ◆ possess a certificate of medical and psychological fitness for surrogacy.
  - ◆ Further, the **surrogate mother cannot provide her own gametes for surrogacy.**

**EXPECTED QUESTION FOR UPSC CSE**

**Descriptive Question**


Q. What is Posthumous Assisted Reproduction (PAR)? Discuss the challenges associated with posthumous assisted reproduction in India. [10 marks] [150 words]



Free Initiative by Chahal Academy



**Daily quiz of 10 MCQs from  
The Hindu and Indian express**

**Scan QR Code**



## TEMPLE REFORMS

**Why in News:** The Sivagiri Math, an important spiritual and social reform institution in Kerala, has recently emphasized a progressive change in temple customs.

### Key Details

- Traditionally, in some temples, male devotees are required to remove their shirts before entering as a sign of respect. **The Sivagiri Math suggested abandoning this practice, calling it outdated and not aligned with modern values.** Some temples associated with Sree Narayana Guru's movement have already stopped this custom.
- **Political Support:** Kerala Chief Minister praised this suggestion. He said this idea reflects the teachings and reformist ideas of **Sree Narayana Guru**, a 20th-century social reformer who stood for equality and progressive thinking. He expressed hope that more temples would voluntarily adopt this change, without forcing anyone.

### Sree Narayana Guru Dharma Paripalana (SNDP) Movement

#### Background and Origin

- **Caste System and Ezhavas:**
  - The Ezhavas, a backward caste in Kerala, were toddy tappers who faced severe discrimination, such as untouchability, denial of education, and **restricted temple entry.**
  - They were the largest caste group in Kerala, constituting **26% of the population.**
- **Sree Narayana Guru:**
  - Born in the Ezhava caste, he was a spiritual leader and reformer.
  - In 1888, he installed a **Sivalinga** at **Aruvippuram** using a stone from the Neyyar River. This act challenged the monopoly of higher castes over religious practices, marking the start of the **Aruvippuram Movement.**

#### Key Developments

- **Formation of SNDP Yogam:**
  - In 1889, the **Aruvippuram Kshetra Yogam** was formed to organize efforts for the progress of the Ezhava community.
  - In 1903, it was registered as **Sree Narayana Guru Dharma Paripalana (SNDP) Yogam** under the Indian Companies Act.

- **Narayana Guru** was the permanent chairman, and poet **Kumaran Asan** was the general secretary.

- **Dr. Palpu's Role**

- ◆ A key figure in social justice movements like the **Ezhava Memorial** and **Malayali Memorial**, he laid the groundwork for SNDP's formation.

- **Religious Reform:**

- **Equality in Religion:** Narayana Guru held that all religions are equal and spoke against caste divisions.
- **Temple Inscription:** At Aruvippuram, he inscribed:

"Devoid of dividing walls of caste or race, or hatred of rival faith, we all live here in brotherhood."

- He condemned **animal sacrifice** and urged Ezhavas to leave the **toddy-tapping profession** and stop consuming liquor.

#### Key Constitutional Provisions Supporting Temple Reforms:

**Article 14:** Guarantees that all citizens shall be equal before the law and enjoy equal protection under the law.

**Article 15:** Prohibits discrimination on the grounds of religion, race, caste, sex, or place of birth.

**Article 17:** Abolishes untouchability and makes it a punishable offense.

**Article 25:** Every person has the freedom to practice, propagate, and profess religion. However, this freedom is subject to public order, morality, and health.

**Article 46:** Directs the state to promote the welfare of the Scheduled Castes and Scheduled Tribes and protect them from social injustice and exploitation.

#### Social and Structural Reforms

The SNDP took up significant issues to uplift the Ezhava community:

- **Education:**
  - Advocated for the **right to admission** in public schools for Ezhavas.
- **Government Employment:**
  - Fought for **recruitment to government services**, which was denied to backward castes.
- **Access to Public Spaces:**
  - Demanded **access to public roads** and the right to enter temples, challenging untouchability.

- **Political Representation:**
  - Worked for representation in political institutions to give the Ezhava community a voice in governance.

### Impact of the SNDP Movement

- **Social Transformation:**
  - The movement led to **upward social mobility** for the Ezhavas, allowing them to challenge the rigid caste hierarchy.
- **Redistribution of Power:**
  - Traditional power structures dominated by upper castes were challenged, leading to a **shift in societal balance**.
- **Unity Among Backward Castes:**
  - The SNDP acted as a **federation of backward castes**, creating a strong platform for collective action.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following statements regarding the Sree Narayana Guru Dharma Paripalana (SNDP) Movement:

1. The SNDP Movement, founded by Sree Narayana Guru, aimed to promote social equality and eradicate caste-based discrimination in Kerala.
2. The movement encouraged the practice of rituals and temple-based worship to unite people across caste lines.
3. The slogan “One Caste, One Religion, One God for Man” was central to the SNDP Movement’s philosophy of unity and social reform.
4. The SNDP Movement played a key role in promoting modern education among the backward communities, especially in Kerala.

Which of the statements given above are correct?

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

(b) :Answer

#### Descriptive Question

Q. Discuss the historical significance of Sivagiri Math in the context of social and religious reforms in Kerala. Analyze how its efforts to reform temple practices align with the broader goals of social justice, equality, and modernity in Indian society. [15 marks] [250 words]

## CARNATIC MUSIC

**Why in News:** Renowned Carnatic musician T.M. Krishna was awarded the prestigious ‘Sangita Kalanidhi 2024’ title. The award was conferred by Professor David Shulman at

the 98th Conference and Concerts (a traditional event called Sadas) of The Music Academy in Chennai.

#### Other Honorees

- ‘Sangita Kalaacharya’ Awards: Presented to Parassala Ravi and Geetha Raja.
- ‘Musicologist Award 2024’: Given to Dr. Margaret Bastin.
- TTK Awards: Received by Thiruvaigyaru Brothers S. Narasimhan and S. Venkatesan, and violinist H.K. Narasimhamurthy.

### Carnatic Music

- Carnatic music is a **classical Indian music style** that is played in the **traditional octave (A complete set of eight musical notes in a specific sequence)**. It focuses on **Kriti-based compositions**, where the emphasis is on the **lyrics (saahitya)** and their quality.
  - A **Kriti** is a well-developed musical song composed in a specific **raga (melodic framework)** and set to a fixed **tala (rhythmic cycle)**.

#### Parts of a Carnatic Composition

- **Pallavi:**
  - The opening or main lines of the composition.
  - Often repeated in each stanza.
  - It is the **highlight of the composition**, especially in **Ragam Thanam Pallavi**, where the artist has room for **improvisation**.
- **Anu Pallavi:**
  - A set of two lines that follow the Pallavi.
  - Sung at the beginning and sometimes at the end of the song.
  - Unlike Pallavi, it is **not repeated after every stanza (Charanam)**.
- **Varnam:**
  - Typically performed at the **beginning of a recital**.
  - It introduces the **raga** to the audience.
  - It has two parts:
    - ◆ **Purvanga:** The first half.
    - ◆ **Uttaranga:** The second half.
- **Ragamalika:**
  - Often the **concluding part** of a performance.
  - It allows the soloist to **improvise freely**.
  - Despite the improvisation, all musicians return to the **main theme** at the end.

#### Other Components of Carnatic Music

- **Swara-Kalpana:**
  - A section where the artist performs **improvised notes** (swara patterns) with the **mridangam** (a percussion instrument).

- It is performed in **medium and fast tempos**.
- **Thanam:**
  - A piece of **melodic improvisation** performed in free rhythm along with the **mridangam**.
- **Ragam:**
  - Melodic pieces that **do not include mridangam** accompaniment.

Here is a table comparing Hindustani and Carnatic music:

Aspect	Hindustani Music	Carnatic Music
Influence	Influenced by Arab, Persian, and Afghan traditions.	Indigenous in origin, with minimal external influence.
Freedom	Allows artists to improvise, offering significant scope for variations.	No freedom for improvisation; follows a prescribed style of singing.
Sub-styles	Includes several sub-styles, leading to the emergence of different Charanas.	Focuses on only one prescribed style of singing.
Need for Instruments	Instruments are equally important as vocals.	Greater emphasis on vocal music than instruments.
Ragas	Six major ragas are used.	Utilizes 72 ragas in total.
Time	Strictly adheres to specific times for performing certain ragas.	Does not adhere to specific times for ragas.
Major Instruments Used	Includes Tabla, Sarangi, Sitar, and Santoor.	Uses Veena, Mridangam, and Mandolin.
Association to Parts of India	Predominantly practiced in North India.	Predominantly practiced in South India.
Commonality	Both use instruments like Flute and Violin.	Both use instruments like Flute and Violin.

Carnatic music is a structured yet flexible art form that combines lyrical beauty, rhythmic precision, and melodic improvisation. Key components like Pallavi, Anu Pallavi, and Ragamalika showcase creativity and technique, while Swara-Kalpana and Thanam provide opportunities for improvisation. Instruments like the mridangam play a crucial role, adding depth to performances.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following statements regarding the Carnatic music:

1. Carnatic music is primarily practiced in the southern states of India, including Tamil Nadu, Karnataka, Andhra Pradesh, Telangana, and Kerala.
2. The kriti form in Carnatic music was popularized by Tyagaraja, Muthuswami Dikshitar, and Shyama Sastri.
3. Carnatic music emphasizes improvisation, especially in the form of Alapana and Kalpana Swaras.

Which of the statements given above is/are correct?

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

Answer: (d)

## DANCE: A LIVING HERITAGE OF CULTURE AND SPIRITUALITY

**Why in News:** An Article in the Indian Express magazine highlighted the cultural, historical and spiritual significance of dance as an integral part of India's intangible heritage.



### Dance as an Intangible Heritage

- **Intangible Heritage:** Dance is not a physical object that can be stored or preserved in a museum. Unlike artifacts, its essence lies in performance, which changes with time and place. It's a living art form, much like music.
- **Cultural Significance:** Dance reflects the culture, traditions, and beliefs of a community, making it a vital part of intangible cultural heritage.

### Dance in Religious Contexts

- **Hinduism and Dance:**
  - Hindu temple art often portrays gods like Shiva, Krishna, and Ganesha dancing, signifying joy, divinity, or cosmic activity.
  - The **devadasi** tradition involved women performing dances in temples to entertain and honor the gods.
- **Other Religions and Dance:**
  - **Buddhism and Jainism:** These religions don't associate their spiritual figures like Buddha or Tirthankaras with dance. They view dance as worldly or a source of temptation.
  - **Islam:** In orthodox traditions, dance is considered

haram (forbidden), but in mystical Sufism, dance becomes a way to connect with the divine. For instance, the **whirling dervishes** of Sufism use dance in spiritual practices.

- **Christianity and Dance in Europe:**

- Dance was initially linked to pagan rituals and was often rejected by Christianity. However, over time, it evolved in different contexts.

### Dance in Ancient Times

- **Stone Age Dance:**

- **Bhimbetka Caves:** Ancient rock paintings in these caves (Central India) show people with horns dancing. This suggests that dance was part of early rituals or celebrations.

- **Harappan Civilization:**

- Seals from Harappa depict groups dancing around a tree. This might represent tribal dances, likely part of community rituals.

- **Vedic Period:**

- **Vedas** focused more on music than dance, but the **Sama Veda** introduced melodies for hymns, and the **Yajur Veda** introduced gestures (**mudras**) during rituals, which likely influenced the origin of dance.
- Dance and song were later used to narrate stories about kings, sages, and gods during ceremonies.

- **Mauryan and Gupta Eras:**

- Sculptures from this time, such as those at Sanchi and Amaravati, depict dancers.
- **Gupta Era:** Dance became more refined, with terms like “nritya” (expressive dance) and “nataka” (drama) becoming common. The **Natyashastra** by Bharata Muni emerged as a classical guide to performing arts.

- **Celestial and Earthly Dancers:**

- In mythology, **apsaras** (celestial dancers) entertained gods, while on earth, **ganikas** (courtesans) performed dances.

### Shastra and Classical Dance

- **Natyashastra and Dance:**

- The **Natyashastra**, a detailed treatise on performing arts, classified dance into various aspects like **abhinaya** (expressions), **mudras** (gestures), and **angika** (postures).
- Dances were precise and geometrical, influencing **yogic asanas** (yoga postures).

- **Mythological Dance Competitions:**

- **Shiva vs. Shakti:** In a Tamil myth, Shiva raises his leg during a dance-off, which Shakti (the goddess) hesitates to replicate.
- **Bhasmasura:** In another story, Mohini (Vishnu’s female form) tricks Bhasmasura into imitating her dance. He touches his head and is destroyed.

- **Islam and Dance:**

- While Islamic traditions often prohibited dance, Mughal rulers encouraged **tawaifs** (courtesans) to perform in royal courts, blending Hindu and Islamic influences.

- **Classical Dance as a Shastra:**

- Classical dance is structured, has a long-documented history, and requires rigorous training.
- India recognizes **eight classical dance forms**, each unique in style and origin.
  - ◆ **Bharatanatyam:** Angular movements, temple roots.
  - ◆ **Kathakali & Mohiniattam:** Theatrical, storytelling dances from Kerala.
  - ◆ **Kuchipudi:** From Andhra Pradesh Known for dancing on plates.
  - ◆ **Odissi:** Fluid movements with the iconic **tribhanga** posture.
  - ◆ **Manipuri:** Devotional dance rooted in Vaishnavism in Manipur.
  - ◆ **Sattriya:** From Assam, linked to Vaishnavite monasteries.
  - ◆ **Kathak:** Originated in North India, transitioning from temples to royal courts.

### Folk Dances

- **Chhau:**

- A dynamic, masculine dance form from West Bengal, Odisha, and Jharkhand.
- **Masks** are integral in West Bengal and Jharkhand, but not in Odisha.
- Some debate whether Chhau should be considered classical or folk.

- **Ritualistic Folk Dances:**

- **Bhoota Kola (Karnataka)** and **Theyyam (Kerala)** involve dancers communicating with gods and spirits.
- In **Ladakh** and **Shillong**, masked dances narrate Buddhist stories of defeating demons.

- **Community Bonding:**

- Tribal dances often involve collective participation, symbolizing unity. Examples include the **Bihu dance** of Assam, performed during harvest celebrations.

- **Regional and Entertainment Dances:**

- Northeast India has diverse tribal dances reflecting unique identities.
- **Nautanki** and **Lavani** are popular folk dances meant for mass entertainment.

### Dance serves multiple purposes:

- **Spirituality:** Connecting with gods.

- **Philosophy:** Reflecting beliefs of faiths and communities.
- **Rituals and Festivals:** Celebrations and religious practices.
- **Identity:** Showcasing regional and tribal cultures.
- **Entertainment:** Bringing joy and unity to people.

In essence, dance is a vibrant expression of humanity, weaving together history, art, culture, and spirituality.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following statements regarding the Indian culture:

**Statement I:** Dance is a tangible heritage of India and can be stored or preserved in a museum.

**Statement II:** Vedas focused more on music than dance.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- (b) Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I
- (c) Statement I is correct but Statement II is not correct
- (d) Statement I is not correct but Statement II is correct

Answer: (d)

## MARATHI LANGUAGE

**Why in News:** Centre has notified grant of classical language status to Marathi.

#### Key Details

- The demand to include Marathi in the list of India's classical languages had been **pending for 11 years until the Union cabinet accorded the status on October 3, 2024.**
- Marathi received classical language status, alongside Assamese, Bengali, Pali, and Prakrit.

#### About Classical languages

- The designation of a language as classical is intended to **recognize its historical significance and its role as a guardian of Bharat's rich cultural and intellectual heritage.**
- **Importance of Classical Language**

- **Preservation of ancient knowledge:** These languages have been essential in preserving and transmitting India's ancient knowledge systems, philosophies, and values across generations for thousands of years.
- **Contribution to Cultural Fabric:** The government acknowledges their deep-rooted antiquity, vast literary traditions, and their invaluable contribution to the cultural fabric of the nation.
- **Promotes and preserves language:** It will not only elevate their stature but will also facilitate efforts toward the promotion, preservation, and further research of these languages, ensuring their continued relevance in the modern world.

#### Criteria for declaring a language as classical

- **High Antiquity:** High antiquity of its early texts/ recorded history over a period of 1500- 2000 years.
- **Cultural Heritage:** A body of ancient literature/ texts, which is considered a heritage by generations of speakers.
- **Diverse Literary Evidence:** Knowledge texts, especially prose texts in addition to poetry, epigraphical and inscriptional evidence.
- **Evolution Over Time:** The Classical Languages and literature could be distinct from its current form or could be discontinuous with later forms of its offshoots.

#### Total declared Classical Languages

- Six Indian languages namely Sanskrit, Tamil, Telugu, Kannada, Malayalam and Odia were earlier accorded the status of Classical Language.
- The new approval of Classical Language status to Marathi, Pali, Prakrit, Assamese and Bengali languages brings the total number of classical languages to 11.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following languages:

- 1. Marathi
- 2. Kannada
- 3. Telugu

Which of the above languages have been declared Classical Languages by the Government of India?

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

Answer: (d)

## WATER MANAGEMENT TECHNIQUES OF THE INDUS VALLEY CIVILIZATION

**Why in News:** Recently, the ongoing excavation at the Harappan-era site **Rakhigarhi** unearthed 5,000-year-old water management systems.

### Key Details

- **Traces of water body:** Presence of **water storage area with a depth of 3.5 to 4 feet**. It is a **testament to the advanced water management techniques** employed by the people who lived here around 5,000 years ago.
- A **dried-up riverbed** identified as the **Chautang River (Drishadvati River)** - The river served as a vital source of water for Rakhigarhi.
- Archaeologists believe that the **Drishavati river began to dry up around 5,000 years ago**, leading to a water crisis in prosperous cities like Rakhigarhi.
- The **gradual disappearance of the Drishavati and Sarasvati rivers** likely contributed to the decline of the Harappan civilisation in the region.

### Overview of Indus Valley Civilization Water Management

- The Indus Valley Civilization (IVC) was one of the most advanced civilizations in terms of **urban planning and water management**.
- The civilization included **vast river plains in modern-day Pakistan and northwest India**.
- Excavations reveal **well-planned cities with advanced water supply, sanitation, and drainage systems**.

### Key Features of Water Management and Conservation

- **Drainage System**
  - Sophisticated **underground drains** are constructed with **precisely laid bricks**.
  - Public and private drains are connected, and covered with bricks or stones, with **inspection traps and manholes for maintenance**.
  - Drains flowed down streets, **maintaining health and sanitation**.
  - **Example:** Drainage system of Mohenjo-Daro.
- **Wells**
  - Wells were the primary water means, with **most houses having private wells**.
  - The water from wells was used for **drinking, washing, and household purposes**.
  - **Example:** Mohenjo-Daro is also known as the 'city of wells' due to the presence of over 700 wells.
- **The Great Bath**
  - Constructed with **water-tight bricks laid with gypsum plaster**.

- **Waterproofing** is achieved with a **thick layer of bitumen along the walls and floor**.
- **Designed for ritual or religious purification**.
- **Dimensions:** 12m north-south, 7m wide, and 2.4m deep.
- Water is supplied from a nearby well and drained through a baked-brick corbelled system.
- **Lothal Dockyard**
  - A lined structure with **inlet and outlet water channels**.
  - Evidence of **understanding tides and hydraulics to manage water flow for maritime purposes**.
- **Reservoirs and Water Conservation**
  - Sixteen or more reservoirs of varying sizes are created within the city walls of Dholavira.
  - **Reservoirs were 7m deep and 79m long, located to take advantage of sloping terrain**.
  - Reservoirs built entirely of stone, showcasing advanced hydraulic engineering.
- **Rainwater Collection**
  - Seasonal rivulets, Mandсар and Manhar, helped collect rainwater and diverted it into reservoirs **through stone bunds and inlet channels**.
- **Canals and irrigations**
  - Harappan constructed canals **to divert stormwater as well as water from rivers for irrigation**.

### Rakhigarhi

- It is **one of the oldest and largest excavated sites** of the Indus Valley Civilization located in **Haryana**.
- It is situated on the **Ghaggar-Hakra river plain**.
- The structures and buildings at Rakhigarhi were made from **mud brick (not burnt bricks)**.
- **Excavated artifacts:** Bone tools, terracotta objects, potteries, etc.
- **Lapidary workshop:** Presence of unfinished beads.
- **Others:** Granaries, burial sites.
- The Archeological Survey of India (ASI), Haryana state government & central government signed a **MoU in 2022** to develop the **world's largest museum of Harappan culture in Rakhigarhi**.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

- Q. Consider the following statements regarding Rakhigarhi:
1. It is located in Punjab.
  2. The world's largest museum of Harappan culture is being built in Rakhigarhi.

Which of the statements given above is/are correct?

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

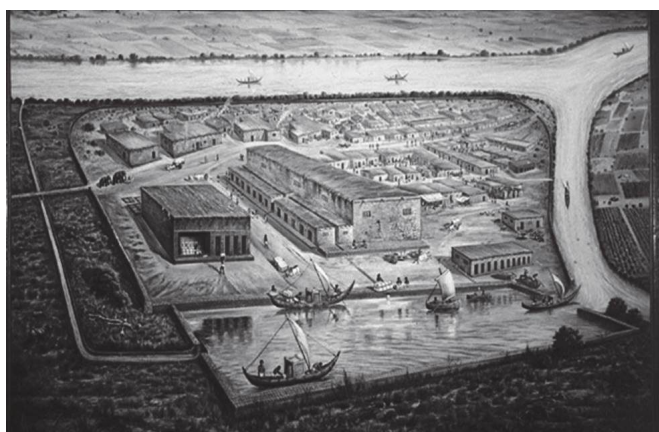
Answer: (b)

**Descriptive question**

Q. Discuss the key features of water conservation and management techniques employed by the Indus Valley Civilization, with relevant examples from different sites. [10 marks] [150 words]

**LOTHAL**

*Why in News:* Recently, a joint review meeting held to assess the progress of the National Maritime Heritage Complex (NMHC) in Lothal, Gujarat.



- The NMHC is **being developed as part of the Sagarmala Programme** (A strategic initiative launched by the Government of India to modernize India’s ports, promote port-led development, and enhance coastal and shipping infrastructure).
- Lothal was an important city in the **Indus Valley Civilization** (around 2400 BCE). It was well-known for having a **dockyard** (a place for ships to dock), which shows that it had a strong maritime presence.

**About National Maritime Heritage Complex (NMHC)**

- The complex is being designed to **showcase India’s maritime heritage spanning from ancient times to the modern era.**
- It will be a **world-class facility** that aims to educate visitors about India’s maritime history and traditions.
- **“Edutainment” Approach:** The NMHC will adopt an “edutainment” (education + entertainment) approach, meaning it will **combine educational elements with engaging and interactive experiences** to make the learning process enjoyable for visitors.
- This approach will help in preserving and disseminating

the rich maritime heritage of India while providing an enjoyable visitor experience.

- **Participation of Local Communities:** The project is not just about building a heritage site but also about **helping local people** by providing them with opportunities, especially related to **tourism and employment.**

**Significance of the NMHC:**

- **Boost tourism:** It will attract visitors, increasing tourism in Gujarat.
- **Provide a platform for maritime education:** It will teach people about India’s maritime history and industry.
- **Promote collaboration between India’s maritime community and the global industry:** It will connect India’s maritime sector with international partners.
- The project will create **employment** opportunities, help develop **skills** in the local population, and **empower the youth** of Gujarat.

**PRELIMS SPECIAL**

**About Lothal**



- Lothal was one of the **southernmost sites** of the ancient Indus Valley civilization, located in the Bhal region of the Indian state of Gujarat.
- Construction of the city is believed to have begun around **2200 BCE.**
- The Archaeological Survey of India (ASI), the official Indian government agency for the preservation of ancient monuments, **discovered Lothal in 1954.**
- The findings consist of a **mound, a township, a marketplace, and the ‘dock’.** Adjacent to the excavated areas stands the Archaeological Museum, where some of the most prominent collections of Harappa-era antiquities in India are displayed.

**Historical Significance of Lothal**

- **Site of Antiquities:**
  - Lothal provides the largest collection of antiquities in the archaeology of modern India.

- An indigenous micaceous Red Ware culture also existed, which is believed to be autochthonous and pre-Harappan.
- **Earliest known dockyard:** According to the ASI, Lothal had the world's earliest known dock, which connected the city to an ancient course of the Sabarmati River on the trade route.
- **Town Planning**
  - Lothal exhibits the hallmark features of Harappan urban planning, with well-laid streets arranged in a grid pattern.
  - **The town was divided into:**
    - ◆ Acropolis (Upper Town): Reserved for the ruling class and adorned with paved floors.
    - ◆ Lower Town: The residential area for common people, equipped with drainage systems.
  - Houses were constructed using standardized bricks and had bathrooms and wells.
- **Advanced Drainage System**
  - Lothal had a sophisticated underground drainage system that included covered drains made of bricks.
  - Wastewater from houses was directed into street drains, reflecting the engineering prowess of the Harappans.
- **Bead-Making Industry**
  - Lothal was a prominent center for bead-making, using materials like semi-precious stones, carnelian, steatite, and shell.
  - Artifacts suggest that beads were exported to Mesopotamia and other regions, highlighting its role in global trade.
- **Seal Making**
  - Numerous seals with inscriptions in the undeciphered Harappan script have been found at Lothal.
  - The seals were used for trade and administrative purposes, signifying the presence of an organized economic system.
- **Rice Cultivation**
  - Lothal provides the earliest evidence of rice cultivation in the Indian subcontinent, alongside other crops like wheat, barley, and cotton.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements about Harappan City Lothal:

1. Lothal was one of the northernmost sites of the ancient Indus Valley civilization.
2. The Archaeological Survey of India (ASI), discovered Lothal in 1914.

Select the correct answer:

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

Answer: (c)

**Descriptive Question**

Q. Explain the historical significance of the Lothal site in the context of India's archaeology and naval history, particularly in relation to the development of the National Maritime Heritage Complex. [150 words] [10 marks]

**INDUS VALLEY SCRIPT**

**Why in News:** Tamil Nadu CM announced \$1 million prize for deciphering Indus Valley script.

**Key Details**

- The Chief Minister also announced a ₹2-crore grant for setting up a chair in the name of noted archaeologist and epigraphist Irvatham Mahadevan to continue the research on the Indus Valley Civilisation.
- The Indus Valley script remains a mystery even after 100 years of discovery of the first Harappan site.

**About the script**

- **Pictographic in Nature:** The Indus (or Harappan) people used a pictographic script. Some 3500 specimens of this script survive in stamp seals carved in stone, in moulded terracotta and faience amulets, in fragments of pottery, and in a few other categories of inscribed objects.
- **Use of Motifs:** The seals and amulets often contain iconographic motifs, mostly realistic pictures of animals apparently worshipped as sacred, and a few cultic scenes, including anthropomorphic deities and worshippers.
- **Pattern observed:** The Indus script inscriptions discovered are very short, comprising no more than five signs on the average.

**Significance for deciphering the Script**

- **To get Complete Cultural understanding:** Deciphering the Indus script, often called a "mystery script," is critical to understanding the complete cultural picture of the Indus Valley Civilisation (IVC).
- **Understanding Indus civilization in context of other civilisations:** Other contemporary scripts like those from Mesopotamian and Egyptian civilizations have been deciphered. The inability to decipher the Indus script leaves gaps in understanding its culture and history.

**Interest of Tamil Nadu in Deciphering the Indus Script**

- The alternate hypothesis, the Dravidian hypothesis, posits a connection between the Indus scripts and proto-Dravidian languages.
- This theory argues that Indus Valley Civilisation predated Aryan Civilisation and the language spoken in the Indus Valley could be Dravidian has been strengthened further.

### Challenges faced in deciphering the Script

- **Missing clues about Script:** Despite numerous archaeological discoveries, the seals and tablets of the IVC remain undeciphered. This has led to debates among scholars regarding the literacy and writing practices of the civilisation.
- **Lack of Context for Interpretation:** Since we don't know the cultural or linguistic background of the script, figuring out what the symbols mean is mostly guesswork.
- **Scholarly Disagreement on writing system :** Around 20 years ago, some Western scholars posited that ancient urban settlements, including those of the Harappans, did not require writing. They argued that the limited symbols found could not conclusively prove the existence of a writing system.
- **Limited Data Access to researchers:** Researchers face certain challenges while resolving the Indus riddle. There is a complaint that the entire database regarding the seals has not yet been made available in the public domain.

Deciphering the Indus script is key to uncovering the secrets of this ancient civilization. Despite challenges like missing context and limited data, ongoing research and new initiatives, like Tamil Nadu's prize, keep the hope alive. Solving this mystery could reshape our understanding of early urban societies.

#### EXPECTED QUESTION FOR UPSC CSE

##### Descriptive Question

Q. Even after 100 years of discovery of Harappan civilization, the script remains yet to be deciphered. Comment on the challenges and importance of deciphering the Harappan script. [10 marks, 150 words]

## KUKA MOVEMENT

**Why in News:** On Friday, January 17, in the afternoon, Chief Minister of Punjab paid respects at a ceremony held to commemorate the **Kuka martyrs' day** at the **Namdhari Shaheed Smarak in Malerkotla**.

### Origins of the Kuka Movement

- The Kuka movement was **Punjab's first significant response to the British-instituted post-1849 political order**.
- The Kuka Movement was the most significant stage of the **Namdhari Movement**, which sought to topple British rule.

- Because of their **distinctive way of reciting the "Gurbani"** (the Sayings/Teachings of the Guru), the **Namdharis were also referred to as "Kukas."** In Punjabi, this style was in a **high-pitched voice** known as **"Kook."**

### Foundation of the Namdhari Sect

- The **Namdhari Sect was established on April 12, 1857**, at Bhaini Sahib by **Satguru Ram Singh**, the son of a poor carpenter who was born on February 3, 1816, in the little town of Bhaini, about 7 kilometres from Ludhiana.
- In the course of time, Baba Ram Singh became a **secular chief of Kukas**. He would go about surrounded by horsemen and held his court every day.
- To arrange Kukas in the several districts of Punjab, he nominated governors and deputy governors.
- By providing them with **military training**, he also **motivated young men**.

### Growth of the Movement

- The Kuka movement's following grew significantly in a matter of a few years.
- They called for a **boycott of educational institutions and laws established by the British**.
- They were rigid in their clothing and wore **only hand-spun white attire**. The Kuka followers actively propagated **civil disobedience**.
- The clash between Kuka followers and the British government started in 1871 and culminated in the **Kuka raid on Malerkotla on 15 January 1872**.
- The Kuka outbreak of 1872 was visited by **terrible punishment**, which was equalled in brutality by a few events in our history.
- A large number of Kuka prisoners were **blown to death with cannons**, and their leader, **Baba Ram Singh**, was **deported to Rangoon**.
- In 1920, the Kukas started **publication** of the paper 'Satyug,' and in 1922, the daily 'Kuka' was started.
- When the **Non-Cooperation movement was started by Gandhiji**, the **Kukas joined hands**.

#### EXPECTED QUESTION FOR UPSC CSE

##### Prelims MCQ

Q. The 19th century Kuka Movement was led by:

- (a) Guru Gobind Singh      (b) Guru Ram Das  
(c) Guru Nanak              (d) None of the Above

(d) Answer

## GOVERNMENT SCHEMES

### MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME (MGNREGS)

**Why in News:** A Right to Information (RTI) reply points out that half of MGNREGS sites inspected in West Bengal showed flaws.

#### Key Details

- It is now three years since the Centre sent the last tranche of funds under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) to West Bengal in 2021.
- Since 2021 the MGNREGS funds have been withheld by the Centre citing irregularities in implementation of the programme in the State.
- **Reason:** One of the key factors prompting the Union Rural Development Ministry's decision was the inspection of 63 worksites out of which inconsistencies were reported in 31.
- **Inconsistencies and Faults Reported by the Centre**
  - Breaking bigger works into smaller parcels to avoid scrutiny
  - Existing work was fraudulently shown to be created under MGNREGA
  - Tendering norms were not followed for the procurement of systems
  - Works not permissible under MGNREGA were taken up
  - Poor maintenance of files and records
  - The state government filed delayed and unsatisfactory action-taken reports when the faults were pointed out.
- The release of funds under MGNREGS to the State of West Bengal has been stopped, as per provision of **Section 27** of the Mahatma Gandhi National Rural Employment Guarantee Act, 2005, due to non-compliance with the directives of the Central Government.

#### Section 27 in The Mahatma Gandhi National Rural Employment Guarantee Act, 2005

- Power of the Central Government to give directions.
  - The Central Government may give such directions as it may consider necessary to the State Government for the effective implementation of the provisions of the Act.

➤ If the Central Government receives a complaint about misuse or mismanagement of funds under the Act, and finds it valid, it can:

- ◆ Order an investigation through a designated agency.
- ◆ Stop the release of funds to the scheme if necessary.
- ◆ Take corrective steps to fix the issue within a reasonable time.

#### Salient Features/Highlights of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

- **Employment Guarantee:** MGNREGA provides a legal guarantee for 100 days of employment per year to every rural household in India. This ensures that eligible households have access to a minimum level of employment, helping alleviate poverty and providing a safety net during periods of economic distress.
- **Focus on Rural Development:** The primary objective of MGNREGA is to enhance the livelihood security of rural households by promoting sustainable rural development. The program emphasizes the creation of productive assets such as water conservation structures, rural roads, and other infrastructure projects that contribute to the overall development of rural areas.
- **Inclusive and Demand-Driven:** MGNREGA is designed to be demand-driven, meaning that employment opportunities are created in response to the expressed demand from the rural community. The beneficiaries have the right to demand work, and the government is obligated to provide employment within 15 days of such a demand.
- **Women's Participation:** The act promotes the active participation of women in the workforce. One-third of the beneficiaries are women, and efforts are made to ensure that at least 50% of the workers are women. This not only contributes to women's empowerment but also addresses gender disparities in rural employment.
- **Transparency and Accountability:** MGNREGA emphasizes transparency in the implementation of projects and financial transactions. **Social audits** are conducted to ensure accountability and enable local communities to actively participate in monitoring the implementation of projects. Information about the scheme, including work details, wages, and funds allocated, is made available to the public through various channels.



at prices, fixed by the Ministry of Ministry of Consumer Affairs, Food & Public Distribution through e-auction in order to control the price in the market by providing food grains at reduced prices with the aim to curb inflation.

• **Working of the Scheme**

- Under the Scheme, Government of India through Food Corporation of India (FCI), offers wheat to Processors / Atta Chalki / Flour Millers of Wheat Products only (Traders / Bulk Buyers are not allowed) through e-auction.
- An eligible bidder can bid for a minimum quantity of 10 MT to maximum of 100 MT in case of wheat.
- In the case of rice, traders are eligible and can bid a minimum quantity of 10 MT and maximum quantity of 1000 MTs.
- The bidder must have valid FSSAI license, GST / Trade Tax Registration, PAN and they must declare his existing stock holding in the WSP Portal of Government of India in the case of wheat.

**Policy for the OMSS (D) for FY 2024-25**

- This policy aims to enhance food security and ensure the efficient distribution of rice to various stakeholders.
- **Tender and Auction Schedule:** The first tender was issued on August 2, 2024, with the e-auction held on August 7, 2024. The auction was conducted for rice commodities.
- **Participation Guidelines:** Each bidder is allowed only one participation per bid in a region against a single PAN number per week. This restriction applies regardless of the number of firms registered under the same PAN, multiple GST registrations, or branch offices across different states.
- **Quantity Limits:** The maximum quantity a buyer can bid for is capped at 2000 Metric Tons under the policy guidelines.
- **Pricing Structure:** The price for food grains in the tender consists of the reserve price plus additional costs, including transportation, fortification costs (for Fortified Rice Kernel [FRK] rice), and applicable taxes.

**Revised OMSS(D) Policy for the year 2024-25**

- **Fixation of Reserve Price for Rice:** The reserve price of rice has been fixed at ₹2,250 per quintal (Pan-India) for sale to State Governments, State Government Corporations, and Community Kitchens, without the requirement of participating in e-auctions.
- **Ethanol Production Support:** The reserve price of rice for sale to ethanol distilleries for the production of ethanol has also been fixed at ₹2,250 per quintal (Pan-India).
- **Significance**
  - These decisions reflect the Government of India's commitment to supporting states in fulfilling their obligations under state schemes, promoting food security, and bolstering ethanol production as part of the national energy strategy.

**Food Corporation of India (FCI)**

- FCI was established in 1965 under the Food Corporations Act, 1964.
- The Food Corporations Act, 1964 is a piece of legislation that was enacted primarily with the aim of regulating and managing food grain procurement, storage, distribution, and related activities.
- Core Functions of FCI
  - **Procurement:** Along with state procuring agencies, FCI procure food grains from farmers at Minimum Support Prices (MSPs), ensuring fair returns to the growers and a stable food supply for the nation.
  - **Storage:** FCI maintains an extensive network of modern warehouses and silos to store food grains and commodities safely and efficiently.
  - **Distribution:** FCI's distribution network spans across the length and breadth of India, ensuring that food grains reach even the remotest corners.
  - **Buffer Stock Management:** FCI manages the strategic buffer stock of essential food grains to meet any unforeseen contingencies, such as droughts, floods, or other emergencies. The strength of buffer stock managing capabilities of FCI was demonstrated during the Covid pandemic and related break down of regular supply chain.
  - **PDS Operations:** FCI supplies food grains to State Govt. for the Public Distribution System (PDS) to provide subsidized food grains to vulnerable sections of society.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

- Q. Which of the following statements is NOT true about the Open Market Sale Scheme (Domestic) [OMSS(D)]?
- (a) It involves the sale of surplus food grains from the central pool by the Food Corporation of India (FCI).
  - (b) The primary objective is to stabilize market prices of food grains and control inflation.
  - (c) State governments are not allowed to participate in the scheme.
  - (d) E-auctions are conducted to ensure transparency in the sale process.

Answer: (c)

**NATIONAL BROADBAND MISSION (NBM) 2.0 AND SANCHAR SAATHI MOBILE APP**

**Why in News:** Recently, the Union Minister of Communications launched the Sanchar Saathi Mobile App and unveiled the National Broadband Mission (NBM) 2.0.

### Sanchar Saathi Mobile App

- The Sanchar Saathi Mobile App provides users with **critical tools to secure their telecom resources and combat telecom fraud.**
- **Key features include:**
  - **Chakshu: Reporting Suspected Fraud Communications (SFC):** Users can report suspected calls and SMS using the app and directly from mobile phone logs.
  - **Know Mobile Connections in Your Name:** Citizens can identify and manage all mobile connections issued in their name, ensuring no unauthorised usage.
  - **Blocking Your Lost/Stolen Mobile Handset:** Lost or stolen mobile devices can be swiftly blocked, traced, and recovered.
  - **Know Mobile Handset Genuineness:** The app offers an easy way to verify the authenticity of mobile handsets, ensuring users purchase genuine devices.

### National Broadband Mission (NBM) 2.0

- The National Broadband Mission 2.0 follows its 2019 predecessor, with new targets for the telecom industry in **expanding fibre connectivity and 5G coverage across India.**
- **National Broadband Mission (NBM) 2.0 envisions to:**
  - **Expansion of Optical Fiber Connectivity:** Extend operational Optical Fiber Cable (OFC) connectivity to 2.70 lakh villages by 2030 with 95% uptime from ~50,000 as of now.
  - **Broadband Accessibility for Key Institutions:** Provide broadband connectivity to 90% of anchor institutions like schools, PHCs, Anganwadi centres, and Panchayat offices by 2030.
  - **Improvement in Internet Speed:** Improve the national average of fixed broadband download speeds from 63.55 Mbps in November 2024 to a minimum of 100 Mbps by 2030.
  - **Mapping and Planning of Fiber Networks:** Achieve 100% mapping of fiber networks owned by government PSUs by 2026 on the PM GatiShakti National Master Plan Platform (PMGS) and use PMGS for planning of the Additional BharatNet project.
  - **Enhancing Ease of Doing Business:** Improve Ease of Doing Business: Reduce the Right of Way application average disposal time from 60 days (now) to 30 days by 2030.
  - **Increasing Rural Internet Penetration:** Increase the number of rural internet subscribers per 100 population from the current 45 to 60 by 2030.
  - **Adoption of Sustainable Energy in Telecom:** Achieve the target of powering 30% of mobile towers with sustainable energy by 2030.
  - **Protection of Telecom Infrastructure:** Work on

enhancing the usage of the 'Call Before u Dig' (CBuD) mobile app to protect underground Telecom infrastructure and other utilities.

- **Implementation of New Right of Way (RoW) Rules:** Collaborate with all stakeholders, viz., central ministries and departments, states, UTs, and municipalities, to ensure the effective implementation of the New RoW Rules 2024, issued under the Telecommunications Act, 2023.
- **5G & Future Network Expansion:** Facilitate the rollout of the 5G network in every nook and corner of the country and for futuristic networks of 6G, working to create a robust, ready-to-use street furniture infrastructure across the country.
- **Shared Infrastructure for Cost Efficiency:** Work with all stakeholders for common/shareable telecom ducts and utility corridors in all linear projects to improve the maintenance and cost efficiency of telecom networks and other utilities.

### Conclusion

These initiatives reflect the DoT's dedication to bridging the digital divide and advancing India's global digital standing.

#### EXPECTED QUESTION FOR UPSC CSE

##### Prelims MCQ

Q. Consider the following statements regarding Sachar Saathi Mobile App:

1. It was launched by the Ministry of Civil Aviation.
2. The app aims to ensure hassle free visa service for international travellers.

Which of the statements given above is/are correct?

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

Answer: (d)

### SVAMITVA SCHEME

**Why in News:** Prime Minister distributed over 50 lakh property cards under the SVAMITVA Scheme to property owners in over 46,000 villages in 200 districts across 10 States and 2 Union territories through video conferencing.

#### SVAMITVA: Survey of Villages and Mapping with Improvised Technology in Village Areas

- It is a **Central Sector scheme** launched on National Panchayat Day i.e. 24th April 2020.
- The **Ministry of Panchayati Raj** is the Nodal Ministry for the implementation of the scheme.

- In the States, the Revenue Department / Land Records Department will be the Nodal Department and shall carry out the scheme with the support of the State Panchayati Raj Department.
- **Survey of India** is the technology partner for implementation.
- The scheme is a reformative step towards the establishment of clear ownership of property in rural inhabited (Abadi) areas, by mapping of land parcels using drone technology and providing **Record of Rights** to village household owners with the issuance of legal ownership cards (Property cards/Title deeds) to the property owners.
- **Exclusion:** Agricultural Lands are not covered under this scheme.

**Objectives of the Scheme**

- Creation of accurate land records for rural planning and reducing property-related disputes.
- To bring financial stability to the citizens in rural India by enabling them to use their property as a financial asset for taking loans and other financial benefits.
- Determination of property tax, which would accrue to the GPs directly in States where it is devolved or else, add to the State exchequer.
- Creation of survey infrastructure and GIS maps that can be leveraged by any department for their use.
- To support the preparation of a better-quality Gram Panchayat Development Plan (GPDP) by making use of GIS maps.

**Benefits of the Scheme**

- **Inclusive Society:** Access to Property Rights is linked with the improvement in socio-economic standards of vulnerable populations in villages. The SVAMITVA Scheme aims to enable the same.
- **Land Governance:** Lack of clearly demarcated Abadi area has led to high number of land-conflict cases. The SVAMITVA Scheme aims to address the root cause for disputes at local level.
- **Sustainable Habits:** High-resolution digital maps for better Gram Panchayat Development Plans (GPDP) lead to improvement across infrastructure like schools, community health centres, rivers, street lights, roads etc. through efficient allocation of funds and increased accessibility.
- **Economic Growth:** The key outcome is to help people monetize their property as collateral. Furthermore, a boost to India’s economic growth through streamlining of Property tax, in States where it is levied leading to increase in investments and ease of doing business`.

**Conclusion**

The **SVAMITVA Scheme** is a game-changer for rural India, providing clear property ownership, reducing disputes, and

enabling financial security. By leveraging drone technology, it strengthens local governance, improves infrastructure planning, and boosts economic growth. This initiative lays the foundation for a more transparent and empowered rural society.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

- Q. The SVAMITVA scheme aims to:
- (a) Provide financial assistance to farmers for agricultural activities.
  - (b) Establish clear ownership rights of property in rural areas.
  - (c) Promote digital literacy among rural youth.
  - (d) Improve healthcare facilities in rural India.

(b) :Answer

**Descriptive Question**

- Q. What is the SVAMITVA scheme to issue property cards in villages? Discuss the implementation and benefits of the scheme. [15 marks] [ 250 words]

**PLI SCHEME 1.1**

**Why in News:** Union Minister of Steel and Heavy Industries launched the second round of the Production Linked Incentive (PLI) scheme for specialty steel, termed PLI Scheme 1.1.

**About PLI Scheme 1.1**

- Ministry of Steel has come out with PLI scheme 1.1 for **specialty Steel for five product categories** which is the same as the existing PLI Scheme to enable further participation as industry participants requested the ministry for relaxation.
- PLI Scheme 1.1 remained open from January 6th to January 31st, 2025.
- PLI scheme 1.1 shall be implemented during the production period of **FY 2025-26 to FY 2029-30**.
- PLI Scheme 1.1 covers **5 product categories** in line with the existing PLI Scheme
  - Coated / Plated Steel Products
  - High Strength / Wear-resistant Steel
  - Specialty Rails
  - Alloy Steel Products & Steel wires
  - Electrical Steel
- The scheme will operate within the funds originally allocated for the scheme, i.e., Rs.6,322 crore.
- **Changes in the New Scheme:** Certain changes have been

incorporated with industry consultation to make the scheme more investor-friendly.

- Reduction in threshold investment & capacity for the CRGO product sub-categories.
- Allowing carry forward of excess production to the immediately following year for the purpose of claiming incentive.
- Reduction in threshold investment under capacity augmentation mode.

### First Round of Production Linked Incentive (PLI) Scheme for Specialty Steel

- The first round of the Production Linked Incentive (PLI) Scheme for Specialty Steel was notified on July 29th, 2021 by the Ministry of Steel with a budgetary outlay of ₹ 6,322 Crore.
- The objective of the PLI scheme for specialty steel is to promote the manufacturing of value-added steel grades within the country and help the Indian steel industry mature in terms of technology as well as move up the value chain.
- In the first round, 44 projects by 26 companies are active with a committed investment of about Rs.27,106 crore and 24 million tonnes of downstream capacity creation.

#### PRELIMS SPECIAL

##### About Cold-rolled Grain-Oriented Steel (CRGO)

- Cold-rolled grain-oriented steel (CRGO) is a high-value steel used in production of power transformers used in HT power distribution.
- The technology to make CRGO is not available with any of the Indian steelmakers.
- Considering the strategic importance of becoming atmanirbhar in CRGO, Ministry of Steel has been having regular meetings with stakeholders aimed at increasing production of CRGO within the country.

### Production Linked Incentive Scheme

- Production Linked Incentive (PLI) Scheme is a **key pillar of the government's ambitious efforts to position the country as a global manufacturing hub** while fostering innovation, efficiency, and competitiveness across key industries.
- Launched in 2020, the PLI Scheme is more than just a policy; it is a strategic leap toward self-reliance.
- The **purpose of the PLI Schemes** is to attract investments in key sectors and cutting-edge technology; ensure efficiency and bring economies of size and scale in the manufacturing sector and make Indian companies and manufacturers globally competitive.
- **Aligned with the vision of Atmanirbhar Bharat and the larger Make in India initiative**, the PLI Scheme seeks to strengthen the manufacturing backbone, reduce reliance on imports, and balance growth with sustainability.

- **14 Sectors covered under the PLI Scheme:** (i) Mobile Manufacturing and Specified Electronic Components, (ii) Critical Key Starting Materials/Drug Intermediaries & Active Pharmaceutical Ingredients, (iii) Manufacturing of Medical Devices (iv) Automobiles and Auto Components, (v) Pharmaceuticals Drugs, (vi) Specialty Steel, (vii) Telecom & Networking Products, (viii) Electronic/Technology Products, (ix) White Goods (ACs and LEDs), (x) Food Products, (xi) Textile Products: MMF segment and technical textiles, (xii) High efficiency solar PV modules, (xiii) Advanced Chemistry Cell (ACC) Battery, and (xiv) Drones and Drone Components.



### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

Q. Consider the following sectors:

1. Manufacturing of Medical Devices
2. Pharmaceuticals Drugs
3. Drones and Drone Components
4. Specialty Steel

How many of the above sector/sectors is/are covered under the Production Linked Incentive (PLI) Scheme?

- (a) Only one                      (b) Only two  
(c) Only three                    (d) All four

Answer: (d)

### CASHLESS TREATMENT SCHEME FOR ROAD ACCIDENT VICTIMS

**Why in News:** Recently, the Union Minister for the **Ministry of Road Transport and Highways** has announced the launch of the "Cashless Treatment" scheme to provide financial aid to road accident victims.

#### Key Features of the Scheme

- **Financial support:** Treatment costs of up to ₹1.5 lakh for seven days to the victim, provided the police are informed about the accident within 24 hours. **For hit-and-run cases, ₹2 lakh will be given** to the families of the deceased.

- **Role of Ayushman Bharat:** The eligible victims are administered **health benefit packages** relating to trauma and polytrauma care at empanelled hospitals **under Ayushman Bharat Pradhan Mantri-Jan Arogya Yojana (AB PM-JAY)**.
- **Funding:** **Motor Vehicle Accident Fund**, constituted under section 164B of the Motor Vehicles Act, 1988.
- **Implementing agency:** **National Health Authority** under the Ministry of Health & Family Welfare, in coordination with local police, empanelled hospitals, State Health Agency, National Informatics Centre, and General Insurance Council.

**1.68L: TOTAL DEATHS AT NEW HIGH**

Traffic Rule Violation	Deaths In 2021	Deaths In 2022	% Of Total In 2022
Speeding	1,07,236	1,19,904	71.2
Driving drunk/on drugs	3,314	4,201	2.5
Driving wrong side/ violating lane rules	8,122	9,094	5.4
Using mobile phone	2,982	3,395	2.0
Jumping traffic signal	679	1,462	0.8
Others	31,639	30,435	18.1
<b>Total deaths</b>	<b>1,53,972</b>	<b>1,68,491</b>	

\* Highest deaths among 2-wheeler riders (74,897), followed by pedestrians (32,825)  
 \* UP registered most fatalities (22,595), followed by TN (17,884) & Maha (15,224)

Above Report: Road Accidents in India 2020

**Need of the scheme**

- **Impact on the poor:** The **amount of money lost in traffic accidents** was more than seven months' worth of household income for the poor.
- **Out-of-pocket expenditure:** Medical and non-medical expenses **place heavy financial strain** and push non-poor families into poverty and already poor families into extreme poverty and debt.
- **Loss of productivity:** An estimated **5 to 7% of India's GDP is lost** as a result of road accidents.
- **Extensive Coverage:** Making the program **available to all victims of traffic accidents** guarantees inclusivity and expands the range of life-saving measures.

**Government initiatives to address issues of road safety:**

- **National Road Safety Month/Week every year** for spreading awareness and strengthening road safety.
- **Mandatory road safety audit** of all National Highways through third-party auditors.
- **Identification and rectification of black spots.**
- **Electronic Detailed Accident Report (e-DAR)** Project to establish a central repository for reporting, management, and analysis of road accident data across the country.
- **Mandatory provision of an airbag** for the passenger seated on the front seat of a vehicle, next to the driver.
- **Mandatory provisions for fitment of Seat Belt Reminder (SBR)** for driver and co-driver, manual override for central locking system, and overspeed warning system.
- The National Highways Authority of India has made **provisions for ambulances with paramedical staff/ emergency medical technicians/nurses** at toll plazas on the completed corridor of national highways.

**Conclusion**

The Cashless Treatment Scheme is a lifesaving initiative that ensures accident victims receive timely medical care without financial stress. By reducing delays and easing the burden on families, it enhances road safety efforts and provides much-needed security to all road users.

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding Cashless treatment scheme for road accident victims:

1. The scheme was launched by the Ministry of Health and Family Welfare.
2. Treatment cost of up to ₹2 Lakh is provided to road accident victims.

Which of the statements given above is/ are correct?

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

Answer: (d)

## STATE OF FOREST REPORT 2023

**Why in News:** Minister for Environment, Forest and Climate Change released the 'India State of Forest Report 2023 (ISFR 2023)' at Forest Research Institute, Dehradun.

### Key Details

- The ISFR is brought out by the **Forest Survey of India (FSI) on a biennial basis** since 1987.
- FSI carries out an in-depth assessment of the forest and tree resources of the country based on interpretation of Remote Sensing satellite data and field based National Forest Inventory (NFI), and the results are published in the ISFR.
- The **India State of Forest Report 2023 is 18th such report** in the series.
- The **report contains information on** forest cover, tree cover, mangrove cover, growing stock, carbon stock in India's forests, instances of forest fire, Agroforestry, etc.
- To present a detailed picture of forest health at country level, special thematic information on forest cover and important characteristics of forests have been reported in the ISFR.
- Besides providing vital information for monitoring the country's forest and tree resources, the data given in the **ISFR serves as a useful source of information for the policy makers, planners, State Forest Departments, research organisation**, line agencies involved in various developmental works, academicians, civil society and others interested in natural resource conservation and management.

### Key Findings from the Report

- The **Forest and Tree cover** of the country is 8,27,357 sq km which is 25.17 percent of the geographical area of the country, consisting of 7,15,343 sq km (21.76%) as forest cover and 1,12,014 sq km (3.41%) as tree cover.
- As **compared to the assessment of 2021**, there is an increase of 1445 sq km in the forest and tree cover of the country which includes 156 sq km increase in the forest cover and 1289 sq km increase in tree cover.
  - Top four states showing maximum increase in forest and tree cover are Chhattisgarh (684 sq km) followed by Uttar Pradesh (559 sq km), Odisha (559 sq km) and Rajasthan (394 sq km).
  - Top three states showing maximum increase in forest

cover are Mizoram (242 sq km) followed by Gujarat (180 sq km) and Odisha (152 sq km).

- Area wise top three states having largest forest and tree cover are Madhya Pradesh (85,724 sq km) followed by Arunachal Pradesh (67,083 sq km) and Maharashtra (65,383 sq km).
- **Area wise** top three states having largest forest cover are Madhya Pradesh (77,073 sq km) followed by Arunachal Pradesh (65,882 sq km) and Chhattisgarh (55,812 sq km).
  - In terms of percentage of forest cover with respect to total geographical area, Lakshadweep (91.33%) has the highest forest cover followed by Mizoram (85.34%) and Andaman & Nicobar Island (81.62%).
  - The present assessment also reveals that 19 states/UTs have above 33% of the geographical area under forest cover. Out of these, eight states/UTs namely Mizoram, Lakshadweep, A & N Island, Arunachal Pradesh, Nagaland, Meghalaya, Tripura, and Manipur have forest cover above 75%.
- **Mangroves:** The total mangrove cover is 4,992 sq km in the country.
  - In comparison to the 2021 assessment, there has been a **net decrease of 7.43 km<sup>2</sup> in the country's Mangrove coverage**.
  - Gujarat has a notable decrease of 36.39 km<sup>2</sup>.
  - Notable increase in Mangrove forest cover is observed in Andhra Pradesh (13.01 km<sup>2</sup>), followed by Maharashtra (12.39 km<sup>2</sup>).
  - **Mangrove Cover (Area Wise):** West Bengal > Gujarat > A&N Islands > Andhra Pradesh > Maharashtra > Odisha
- **Bamboo:** The extent of bamboo bearing area for the country has been estimated as 1,54,670sq km. As compared to the last assessment done in 2021 there is an increase of 5,227 sq km in bamboo area.
- **Timber:** The total annual potential production of timber from trees outside forest has been estimated as 91.51 million cum.
- **Carbon Stock:** In the present assessment total carbon stock in the country's forest is estimated to be 7,285.5 million tonnes.
  - There is an increase of 81.5 million tonnes in the carbon stock of the country as compared to the last assessment.

- Regarding status on achievement of target under Nationally Determined Contributions (NDC) related to carbon sequestration, the **current assessment shows that India's carbon stock has reached 30.43 billion tonnes of CO2 equivalent**; which indicates that as compared to the base year of 2005, India has already reached 2.29 billion tonnes of additional carbon sink as against the target of 2.5 to 3.0 billion tonnes by 2030.

**PRELIMS SPECIAL**

**Forest Survey of India (FSI)**

- Forest Survey of India (FSI), is a premier national organization under the union Ministry of Environment and Forests, responsible for assessment and monitoring of the forest resources of the country regularly.
- In addition, it is also engaged in providing the services of training, research and extension.
- Established on 1 June, 1981, the Forest Survey of India** succeeded the "Pre Investment Survey of Forest Resources" (PISFR), a project initiated in 1965 by the Government of India with the sponsorship of FAO and UNDP.
  - The main objective of PISFR was to ascertain the availability of raw material for establishment of wood based industries in selected areas of the country.
- In its report in 1976, the **National Commission on Agriculture (NCA) recommended for the creation of a National Forest Survey Organization** for a regular, periodic and comprehensive forest resources survey of the country leading to creation of FSI.
- After a critical review of activities undertaken by FSI, Government of India redefined the mandate of FSI in 1986 in order to make it more relevant to the rapidly changing needs and aspirations of the country.
- 4 Zonal Offices of FSI
  - Central Zone, Nagpur
  - Eastern Zone, Kolkata
  - Northern Zone, Shimla
  - Southern Zone, Bangalore

**Expected Question for UPSC CSE**

**Prelims MCQ**

- Q. State of Forest Report in India is released by:
- Indira Gandhi National Forest Academy (IGNFA)
  - Directorate of Forest Education (DFE)
  - Forest Survey of India (FSI)
  - Forest Research Institute (FRI)

Answer: (c)

**IPBES NEXUS ASSESSMENT**

**Why in News:** IPBES Nexus Assessment highlighted the strong interlinkages between some of the biggest challenges facing humankind such as climate change, biodiversity loss and hunger, and emphasised on the need for adopting an integrated approach in addressing these issues.

**Key Highlights from the Assessment**

- The Assessment Report on the Interlinkages Among Biodiversity, Water, Food and Health – known as the **Nexus Report** - offers decision-makers around the world the most ambitious scientific assessment ever undertaken of these complex interconnections and explores more than five dozen specific response options to maximise co-benefits across five 'nexus elements': biodiversity, water, food, health and climate change.
- Water**
  - **Freshwater biodiversity is being lost faster than terrestrial biodiversity.** Unsustainable freshwater withdrawal, wetland degradation and forest loss have decreased water quality and climate change resilience in many areas of the world, impacting biodiversity, water and food availability with consequences for humans, plants and animals.
  - **Many marine systems globally have been overharvested** and degraded through human activities.
  - The water cycle is regulated by ecosystem and geophysical processes – supporting biodiversity and providing many contributions that are essential to human health and well-being.
  - Forest cover loss decreases water regulation, quality and availability, resulting in increasing water treatment costs and negative health outcomes.
- Food**
  - Increases in food production have improved health through **greater caloric intake, but unsustainable agricultural practices have also resulted in loss of biodiversity, unsustainable water usage, reduced food diversity** and quality, and increased pollution and greenhouse gas emissions.
  - Negative impacts on the nexus elements from food systems have decreased biodiversity and consequently many of nature's contributions to people, especially through diminished regulating contributions (e.g., regulation of water quality and climate); increased non-communicable disease risks; emerging infectious diseases; and global temperatures and other climatic changes.
  - **Global agro biodiversity is declining**, including genetic resources for food and agriculture, with impacts on ecosystem functioning, food system resilience, food security and nutrition, as well as

on social (employment and health) and economic (income and productivity) systems.

- **Global malnutrition and inequalities in food security persist despite a decline in the total number of undernourished people** –the cost of healthy diets can be high, particularly in developing countries, and consequently inaccessible to many.
- **Health**
  - Greater life expectancy and childhood survival are partly a result of increased production and access to food. **Worsening outcomes from several communicable and non-communicable diseases are linked to biodiversity loss, unhealthy diets, lack of clean water, pollution and climate change among other causes.**
  - Unsustainable farming systems contribute to biodiversity loss, excessive water use, pollution and climate change.
  - 20: Years of average life expectancy difference between regions
  - 10x: The extent to which child mortality rates are higher in least-developed-countries compared to high-income countries
- **Climate Change**
  - Climate change affects biodiversity, water, food and health through changes in average climatic conditions and the frequency and magnitude of extreme weather events.
  - Climate change impacts terrestrial food production with consequences for human health and well-being including exacerbating food insecurity for vulnerable populations.
  - Intensifying climate change will stress water resources and undermine agricultural productivity and food productivity in food production systems, cause increased mortality from heat waves and expand the epidemic belt for vector-borne diseases towards higher latitudes and altitudes.
  - Extreme weather events, such as heatwaves, flooding, droughts and wildfires result in direct health impacts and increased dispersal of pathogens and pollutants (e.g., untreated wastewater, fertilizers, pesticides, sediments and air pollutants).

### Damaging Biodiversity and Economic Loss

- The report emphasised that nature and biodiversity were important not just for ecological and aesthetic reasons but also for purely economic reasons.
- **More than half of the global GDP about \$ 58 trillion worth of annual economic activity was moderately to highly dependent on nature.**
  - Deterioration of natural ecosystems, could directly hurt productivity and adversely impact economic output.

- **Rate of Biodiversity Loss:** The world is witnessing biodiversity decline at the rate of about 2-6% on average every decade over the last half a century.
- Existing economic systems still offer trillions of dollars in incentives every year for actions that have direct negative impacts on biodiversity and natural ecosystems.

### Way Forward

- The world needs to act immediately on such new approaches based on **four fundamental principles** — equity and justice, pluralism and inclusion, respectful and reciprocal human-nature relationships, and adaptive learning and action because the cost of delaying action would significantly increase the costs, almost doubling in just about a decade.
- Recent estimates suggest that more than 10 trillion dollars in business opportunities, and about 400 million jobs, could be generated by 2030 through sustainable economic approaches that rely on nature-positive economic models.

### Conclusion

The IPBES Nexus Assessment **underscores the urgent need for integrated, sustainable approaches to address interconnected challenges** such as biodiversity loss, climate change, food insecurity, and health inequities. By fostering equity, inclusion, and reciprocal human-nature relationships, the report highlights the potential for nature-positive economic models to generate trillions in economic opportunities and millions of jobs while safeguarding the planet's future.

### PRELIMS SPECIAL

#### Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

- The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.
- It was established in Panama City, on 21 April 2012 by 94 Governments.
- It is not a United Nations body.
- However, at the request of the IPBES Plenary and with the authorization of the UNEP Governing Council in 2013, the United Nations Environment Programme (UNEP) provides secretariat services to IPBES.
- **Plenary:** The governing body of IPBES – made up of the representatives of IPBES member States – usually meets once per year.

**Expected Question for UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES):

1. It is a United Nations specialised body focused on biodiversity conservation.
2. It was established in 1992 after the Rio Summit.

Which of the statements above is/are correct?

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

Answer: (d)

**GROUND WATER QUALITY REPORT, 2024**

**Why in News:** Recently, the Union Minister of Jal Shakti, released the **Annual Ground Water Quality Report** for the entire country for the year 2024.

**Key Highlights of the Report:**

- In terms of cation chemistry, **calcium dominates the ion content, followed by sodium and potassium.** For anions, bicarbonate is the most prevalent, followed by chloride and sulphate. This indicates that **overall water in the country is of Calcium-Bicarbonate type.**
- Some regions face **sporadic contamination of nitrates, fluoride, and arsenic.**
- **Seasonal trends** observed in parameters like **Electrical Conductivity (EC) and fluoride provide evidence of positive monsoon recharge effects,** which improve water quality.
- The analysis of **Sodium Adsorption Ratio (SAR) and Residual Sodium Carbonate (RSC) reinforces the generally favourable suitability of groundwater for irrigation,** with over 81% of samples meeting safe thresholds.
  - However, **localised issues of high sodium content and RSC values demand targeted interventions to prevent long-term soil degradation.**
- **100% of groundwater samples in northeastern states are in the excellent category for irrigation.**

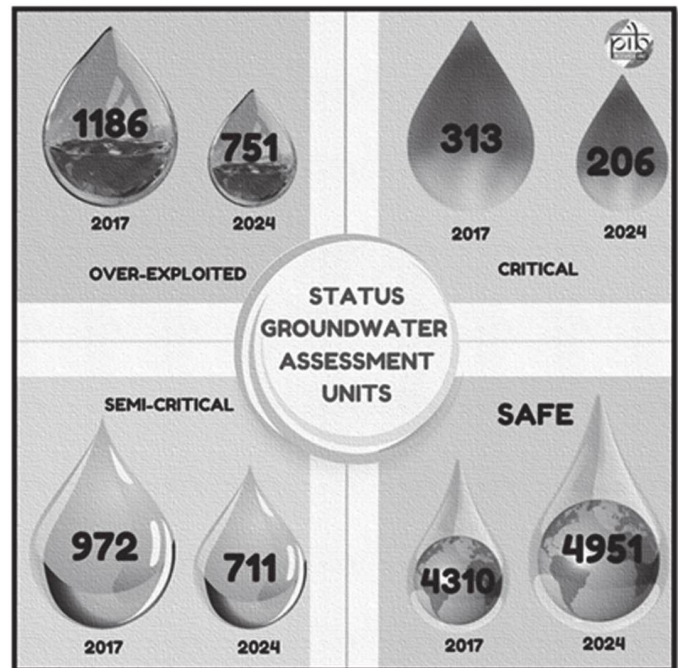
**About the Report**

- It was carried out by the **Central Ground Water Board (CGWB).**
- This report provides a comprehensive analysis of groundwater quality in India through **background monitoring, trend analysis, and hotspot identification.**

- The Annual Ground Water Quality Report is the first to adopt a **Standard Operating Procedure (SOP)** for groundwater quality monitoring, ensuring uniformity in data collection, analysis and interpretation.

**State of Ground Water in India**

- The CGWB estimates that on the whole, the **country's degree of groundwater extraction is 60.4%, or roughly the same as it has been through the years since 2009.**
- About 73% of the blocks are in the 'safe' zone, meaning that they are replenished enough to compensate for water drawn out.
- **Around 87% of the extracted groundwater is utilized for agriculture,** while approximately 11% is used for domestic purposes.



**Causes behind Groundwater Contamination**

- **Naturally occurring chemicals:** Compounds like **arsenic and fluorine** are naturally occurring in earth's crust and **get dissolved in groundwater** due to overexploitation of groundwater.
- **Poor sanitation systems:** **Poorly treated sewage water disposed of on the ground surface or local water bodies;** it directly contributes to groundwater pollution.
- **Agricultural practices:** **Excessive use of fertilisers and pesticides** introduced chemicals like nitrates and potassium into the groundwater.
- **Industrial discharge:** Various industries regularly release **toxic byproducts,** which end up seeping into groundwater.
- **Landfills:** **Leachate,** a very concentrated pollutant generated from the decomposition of waste and by precipitation, may penetrate through the waste layers and go straight to the aquifer.

## Policy Recommendations

- Implementing the provisions of the **Water (Prevention & Control) Act, 1974, and the Environment (Protection) Act, 1986**, with the help of the Central Pollution Control Board (CPCB).
- Controlling point sources by **developing industry-specific standards** and general standards for the discharge of effluents under the Environment (Protection) Act, 1986.
- **Guidelines for control and regulation of groundwater extraction** with pan-India applicability to ensure groundwater is free from pollution.
- **Joint Monitoring Mechanism involving both the government and non-government** sectors is the necessary impetus to help **educate the public as well as encourage policymakers** to factor in the issue of groundwater as part of the broader discourse on resource availability and dispute resolution.

## Conclusion

Groundwater contamination arises from both natural and human-induced factors, threatening water quality and public health. Effective regulation, stricter pollution controls, and community participation are essential to ensure sustainable groundwater management and long-term water security.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelim MCQ

Q. Consider the following statements regarding Ground Water Quality report:

1. It was published by the Central Ground Water Board (CGWB).
2. 100% of groundwater samples in northeastern states are in the excellent category for irrigation.

Which of the statements given above is/are correct?

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

Answer: (c)

#### Descriptive Question

Q. Discuss the key findings of the Ground Water Quality Report, 2024 and examine the role of government initiatives in ensuring sustainable groundwater management. [15 Marks, 250 Words]

## BIENNIAL UPDATE REPORT

**Why in News:** India's 4th Biennial Update Report (BUR-4) to the United Nations Framework Convention on Climate Change (UNFCCC) was submitted on 30th December 2024.

## About the Report

- India submits Biennial Update Reports (BURs) to the UNFCCC **every two years to track progress**. These reports update the national GHG inventories, detail mitigation actions, and highlight the support received, including efforts to reduce emissions.
- The BUR-4 updates the Third National Communication (TNC) and contains the National Greenhouse Gas (GHG) inventory for the year 2020.
- The report also embodies information on India's national circumstances, mitigation actions, an analysis of the constraints, gaps, related finance, technology, and capacity-building needs.

## Highlights from the Report

- **Total GHG Emissions:** In 2020, India's total GHG emissions decreased by 7.93% with respect to 2019. In 2020, India's total GHG emissions, excluding Land Use Land-Use Change and Forestry (LULUCF), were 2,959 million tonnes of CO<sub>2</sub>e and 2,437 million tonnes of CO<sub>2</sub>e with the inclusion of LULUCF.
- **Emissions by gas:** Carbon dioxide - 80.53%; Methane - 13.32%; Nitrous oxide - 5.13%; and others 1.02%.
- **Emissions by sector:** Energy - 75.66%; Agriculture - 13.72%; Industrial Process and Product Use (IPPU) - 8.06%; and Waste - 2.56%.
- In 2020, India's forest and tree cover, along with other land use, sequestered approximately 522 million tonnes of CO<sub>2</sub> equivalent to reducing 22% of the country's total carbon dioxide emissions in 2020.

## India's Achievements in Respect of the NDC Targets

- **Emissions:** India has progressively continued decoupling economic growth from GHG emissions. Between 2005 and 2020, India's emission intensity of Gross Domestic Product (GDP) reduced by 36%.
- **Energy:** By October 2024, the share of non-fossil sources in the installed electricity generation capacity was 46.52%. Total installed capacity of renewable power, including large hydropower, is 203.22 GW and cumulative renewable power installed capacity (excluding large hydro projects) has increased 4.5 times from 35 GW in March 2014 to 156.25 GW.
- **Forest:** India's forest and tree cover has consistently increased and currently stands at 25.17% of the total geographical area of the country. During 2005 to 2021, additional carbon sink of 2.29 billion tonnes of CO<sub>2</sub> equivalent has been created.

## India's Climate Action Initiatives for Carbon Neutrality

- **Forest Land Diversion & Mitigation Measures**
  - **Forest Fragmentation Consideration:** Forest fragmentation is addressed during forest land diversion approvals for non-forestry purposes under Van Adhinyam, 1980.

- **Compensatory Afforestation:** Mandatory afforestation for non-forestry land diversion, including soil and moisture conservation, and eco-restoration.
- **Ek Ped Maa Ke Naam** tree plantation Campaign: A nationwide tree plantation campaign launched on World Environment Day 2024.
- **Green Credit Program:** Launched in 2023, the program focuses on tree plantation on identified degraded forest land parcels to generate green credits.
- **National Afforestation Programme (NAP):** Pan-India afforestation in identified degraded forest areas with people's participation and decentralised forest governance.
- **Urban Climate Adaptation & Low-Carbon Development**
  - **Mainstreaming Adaptation in Urban Planning:** India's LT-LEDS emphasizes integrating adaptation measures and enhancing energy and resource efficiency within urban planning policies and guidelines as key components of a low-carbon development pathway.
  - **Sustainable Urban Planning Policies:** The relevant policies and initiatives include Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines, Town and Country Planning Act, Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Pradhan Mantri Awaas Yojana (PMAY) and Swachh Bharat Mission (SBM).
- **Air Pollution Control & Clean Air Initiatives**
  - **National Clean Air Programme (NCAP):** Aimed at improving air quality with city-specific action plans for 131 cities.
  - **Funding & Implementation:** Mobilized through various schemes such as SBM (Urban), AMRUT, Sustainable Alternative towards Affordable Transportation (SATAT), Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME-II) and Nagar Van Yojna.
  - **Air Pollution Abatement Measures:** Initiatives include cleaner fuels (CNG/LPG), ethanol blending, BS-VI fuel norms, and air quality management.
- **Coastal Ecosystem Conservation & Resilience**
  - **Mangrove & Coral Reef Conservation:** Financial assistance provided to coastal states/UTs for enhancing climate resilience, including mangrove conservation.
  - **Integrated Coastal Zone Management Plans (ICZMP) Plans for Coastal States:** Prepared for Gujarat, Odisha, and West Bengal for coastal ecosystem protection.
  - **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) Program:** Mangrove

restoration/reforestation program launched in 2023, covering approximately 540 km<sup>2</sup> across 9 coastal states and 4 UTs. ₹ 12.55 crores has been released to the states of Gujarat, West Bengal, Kerala and UT of Puducherry for the restoration of 3,046 ha. of mangroves in FY 2024-25.

• **Regulatory Measures for Climate Resilience**

- The **Coastal Regulation Zone (CRZ) Notifications** (2011 & 2019), issued under the Environment Protection Act, 1986, Wildlife Protection Act, 1972, Indian Forest Act, 1927, and Biological Diversity Act, 2002 for enhancing climate resilience. The 2019 CRZ notification specifically targets the management of mangroves, coral reefs, and other critical ecosystems.

**PRELIMS SPECIAL**

**United Nations Framework Convention on Climate Change (UNFCCC)**

- The UNFCCC is a multilateral treaty adopted in 1992 – **shortly after the first assessment report by the Intergovernmental Panel on Climate Change (IPCC) in 1990** – to stabilize greenhouse gas concentrations “at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system.”
- Since entering into force in 1994, the UNFCCC has provided the basis for international climate negotiations, including landmark agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2015).
- It is one of the three Rio Conventions i.e. it was opened for signature at the 1992 Earth Summit in Rio de Janeiro.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following conventions:

1. United Nations Framework Convention on Climate Change (UNFCCC)
2. United Nations Convention to Combat Desertification (UNCCD)
3. Convention on Biological Diversity (CBD)

Which of the above conventions are derived from the 1992 Earth Summit?

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

(d) Answer

**Descriptive Question**

Q. Describe the significance of 1.5°C threshold in combating climate change. What are India's Climate Action Initiatives for Carbon Neutrality? [15 Marks] [250 words]

## FINANCIAL STABILITY REPORT

**Why in News:** Recently, the Reserve Bank of India has released the December 2024 issue of the Financial Stability Report (FSR) on the resilience of the Indian financial system and risks to financial stability.

### Key Details

- **Resilience of Indian Economy:** Gross Domestic Product (GDP) is projected to grow at 6.6 percent in 2024-25, aided by a revival in rural consumption, a pickup in government consumption and investment, and strong services exports.
- **Status of Scheduled Commercial Banks (SCBs):** The soundness of scheduled commercial banks (SCBs) has been bolstered by strong profitability, declining non-performing assets, and adequate capital and liquidity buffers.
  - The returns on assets (RoA) and return on equity (RoE) are on decadal high.
- **Debt to GDP Ratio:** The central government's Debt-to-GDP ratio is expected to decrease from 62.7% in 2020-21 to 56.8% by 2024-25.
- **Insurance sector:** The consolidated solvency ratio of the insurance sector remains robust.
- **Inflation expectations:** The disinflationary effect of a bumper kharif harvest and the rabi crop prospects are expected to soften prices of food grains. But, on the flip side, the rising frequency of extreme weather events continues to pose risks for food inflation dynamics.
- **International impact:** Persisting geopolitical conflicts and geo-economic fragmentation can impose upside pressures on global supply chains and commodity prices.
- **Cyber security:** Rising digital transactions have increased cyber security threats and thus financial frauds, phishing attacks are rising.

### Financial Stability and Development Council (FSDC)

- The Financial Stability and Development Council (FSDC) is a non-statutory body set up by the Government of India in 2010.
- **Chairman:** Union Finance Minister
- **Members:** RBI Governor; Chairman of SEBI, IRDA, PFRDA; Finance Secretary and/or Secretary, Department of Economic Affairs; Secretary, Department of Financial Services; Chief Economic Adviser, Ministry of Finance.
- **Functions:** The Council deals, inter alia, with issues relating to financial stability, financial sector development, inter-regulatory coordination, financial literacy, financial inclusion, and macro prudential supervision of the economy, including the functioning of large financial conglomerates.
- **No funds are separately allocated** to the Council for undertaking its activities.

## EXPECTED QUESTION FOR UPSC CSE

### Prelims MCQ

Q. The Financial Stability and Development Council is headed by?

- |                   |                           |
|-------------------|---------------------------|
| 1. RBI Governor   | 2. Union Finance Minister |
| 3. Prime Minister | 4. Finance Secretary      |

(b) Answer

## LOGISTICS EASE ACROSS DIFFERENT STATES (LEADS), 2024 REPORT

**Why in News:** Recently, the Union Minister of Commerce and Industry released the Logistics Ease Across Different States (LEADS) 2024 report.

### Key Highlights of the Report

- Logistics Ease Across Different States (LEADS) was conceived on the lines of the Logistics Performance Index of the World Bank in 2018 by the Ministry of Commerce and Industry.
- The LEADS 2024 report evaluates logistics performance across four key pillars: Logistics Infrastructure, Logistics Services, Operating and Regulatory Environment, and the newly introduced Sustainable Logistics.
- It further highlights initiatives undertaken by various states and UTs across these pillars and identifies state/UT-specific opportunities to enable informed decision-making.

### Performance Highlights of LEADS 2024

- **Coastal Group**
  - **Achievers:** Gujarat, Karnataka, Maharashtra, Odisha, Tamil Nadu
  - **Fast Movers:** Andhra Pradesh, Goa
  - **Aspirers:** Kerala, West Bengal
- **Landlocked Group**
  - **Achievers:** Haryana, Telangana, Uttar Pradesh, Uttarakhand
  - **Fast Movers:** Bihar, Himachal Pradesh, Madhya Pradesh, Punjab, Rajasthan
  - **Aspirers:** Chhattisgarh, Jharkhand
- **North-Eastern Group**
  - **Achievers:** Assam, Arunachal Pradesh
  - **Fast Movers:** Meghalaya, Mizoram, Nagaland, Sikkim, Tripura
  - **Aspirers:** Manipur

- **Union Territories**
  - **Achievers:** Chandigarh, Delhi
  - **Fast Movers:** Dadra and Nagar Haveli and Daman and Diu, Jammu and Kashmir, Lakshadweep, Puducherry
  - **Aspirers:** Andaman and Nicobar Islands, Ladakh

**India's Logistics Sector**

- As per the **Economic Survey 2022-23**, India's logistics costs have been in the range of **14-18 percent of GDP** against the global benchmark of 8 percent.
- India ranked **38th** among 139 countries in the **Logistics Performance Index Report, 2023**, released by the World Bank.

**EXPECTED QUESTIONS OF UPSC CSE**

**Prelims MCQ**

Q. Which of the following ministry brings out the publication known as Logistics Ease Across Different States (LEADS) report?

(a) Ministry of Ports, Shipping and Waterways  
 (b) Ministry of Road Transport and Highways  
 (c) Ministry of Commerce and Industry  
 (d) Ministry of Finance

Answer: (c)

**WORLD EMPLOYMENT AND SOCIAL OUTLOOK: TRENDS 2025**

**Why in News:** The global economy is slowing down, making it harder for labour markets to recover fully, according to the newly-released, **World Employment and Social Outlook: Trends 2025** report by **International Labour Organization (ILO)**.

**Key Findings**

- In 2024 **global employment** grew in line with the labour force, keeping the unemployment rate steady at 5%.
- **Youth unemployment** showed little improvement, remaining high at 12.6%.
- **Informal work and working poverty** returned to pre-pandemic levels, and low-income countries faced the most difficulties in creating decent jobs.
- **Labour force participation rates have dropped in low-income countries** while increasing in high-income nations, mainly among older workers and women
- **Challenges to Recovery:** The report points to challenges such as geopolitical tensions, the rising costs of climate change and unresolved debt issues, which are putting labour markets under pressure.

- **Opportunities:** The study identifies potential for job growth in green energy and digital technologies.
- **Recommendations**
  - **Boost productivity:** Invest in skills training, education and infrastructure to support economic growth and job creation.
  - **Expand social protection:** Provide better access to social security and safe working conditions to reduce inequality.
  - **Use private funds effectively:** Low-income countries can harness remittances and diaspora funds to support local development.

**PRELIMS SPECIAL**

**International Labour Organization (ILO)**

- As the **first and oldest United Nations specialized agency**, the International Labour Organization (ILO) promotes social justice in the United Nations System.
- The **only tripartite U.N. agency**, since **1919** the ILO brings together **governments, employers and workers** of 187 Member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men.
- ILO is devoted to **promoting social justice and internationally recognized human and labour rights**, pursuing its founding mission that social justice is essential to universal and lasting peace.
- **Headquarters:** Geneva, Switzerland
- **Flagship Reports**
  - World Economic and Social Outlook
  - Social Dialogue Report
  - Global Wage Report
  - World Social Protection Report

**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. Which of the following is the oldest specialized agency of the United Nations?

(a) World Health Organization  
 (b) World Intellectual Property Organization  
 (c) World Meteorological Organization  
 (d) International Labour Organization

Answer: (d)

**FUTURE OF JOBS REPORT**

**Why in News:** The World Economic Forum (WEF) has released its fifth The Future of Jobs Report.

## About The Future of Jobs Report 2025

- The Future of Jobs Report 2025 brings together the **perspective of over 1,000 leading global employers**—collectively representing more than 14 million workers across 22 industry clusters and 55 economies from around the world—to examine how these macro trends impact jobs and skills, and the workforce transformation strategies employers plan to embark on in response, across the 2025 to 2030 timeframe.
- Major Drivers to Shape and Transform the Labour Market by 2030
  - Technological change
  - Geoeconomic fragmentation
  - Economic uncertainty
  - Demographic shifts
  - Green transition

## Key Findings of the Report

- **Broadening digital access** is expected to be the most transformative trend – both across technology-related trends and overall – with 60% of employers expecting it to transform their business by 2030.
- **Increasing cost of living** ranks as the second-most transformative trend overall – and the top trend related to economic conditions – with half of employers expecting it to transform their business by 2030, despite an anticipated reduction in global inflation.
- **Climate-change mitigation** is the third-most transformative trend overall – and the top trend related to the green transition – while climate-change adaptation ranks sixth with 47% and 41% of employers, respectively, expecting these trends to transform their business in the next five years.
- Two **demographic shifts** are increasingly seen to be transforming global economies and labour markets.
  - Ageing and declining working-age populations, predominantly in higher-income economies.
  - Expanding working-age populations, predominantly in lower-income economies.
- **Geoeconomic fragmentation and geopolitical tensions** are expected to drive business model transformation in one-third (34%) of surveyed organisations in the next five years.
- Job creation and destruction due to **structural labour-market transformation** will amount to 22% of today's total jobs.
- **Frontline job roles** are predicted to see the largest growth in absolute terms of volume and include Farmworkers, Delivery Drivers, Construction Workers, Salespersons, and Food Processing Workers.
- **Technology-related roles** are the fastest-growing jobs in percentage terms, including Big Data Specialists, Fintech

Engineers, AI and Machine Learning Specialists and Software and Application Developers.

- **Clerical and Secretarial Workers** – including Cashiers and Ticket Clerks, and Administrative Assistants and Executive Secretaries – are expected to see the largest decline in absolute numbers.
- On average, workers can expect that **two-fifths (39%) of their existing skill** sets will be transformed or become outdated over the 2025-2030 period.
- **Analytical thinking** remains the most sought-after core skill among employers, with seven out of 10 companies considering it as essential in 2025.
- **AI and big data** top the list of fastest-growing skills, followed closely by **networks and cybersecurity** as well as **technology literacy**.
- **Skill gaps** are categorically considered the biggest barrier to business transformation by Future of Jobs Survey respondents, with 63% of employers identifying them as a major barrier over the 2025- 2030 period.
- The Future of Jobs Survey also finds that **adoption of diversity, equity and inclusion initiatives** remains on the rise.

## PRELIMS SPECIAL

### World Economic Forum (WEF)

- Established in **1971** as a not-for-profit foundation, the Forum received the status of an international organization for public-private cooperation from the Swiss authorities in 2015.
- The World Economic Forum is the International Organization for Public-Private Cooperation.
- It provides a global, impartial and not-for-profit platform for meaningful connection between stakeholders to establish trust, and build initiatives for cooperation and progress.
- The World Economic Forum has its **headquarters in Geneva**, Switzerland and offices in **New York** and **San Francisco** in the United States, in **Beijing**, China and in **Tokyo**, Japan.
- World Economic Forum Annual Meeting is held in **Davos**, Switzerland.
- **Publications/Reports** by WEF
  - Global Risks Report
  - Global Cybersecurity Outlook
  - Top 10 Emerging Technologies
  - Future of Jobs
  - Global Gender Gap Report
  - Chief Economists Outlook
  - Travel & Tourism Development Index
  - Fostering Effective Energy Transition
  - New Nature Economy
  - Chief Economists Outlook

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Future of Jobs Report is released by which of the following?
- (a) International Monetary Fund
  - (b) World Bank
  - (c) World Economic Forum
  - (d) World Trade Organization

Answer: (c)

FISCAL PRUDENCE

**Why in News:** According to a new RBI report: state finances have improved, but there is a lot of work to be done.

Key Details of the Report

- **Fiscal situation during Covid:** In 2020-21, the combined fiscal deficit of all states had edged up to 4.1 per cent of GDP and their debt-to-GDP ratio had risen to 31 per cent.
- **Current situation:** The report highlights that state governments have in the years thereafter stuck firmly to the path of fiscal consolidation, bringing down their debt to 28.5 per cent by March 2024 and their Gross Fiscal Deficit (GFD) to 2.9 per cent.
- **Increase in Capital Outlay:** The total capital outlay of states has increased from 2.1 percent of GDP in 2020-21 to 2.6 percent in 2023-24 and is further projected to rise to 2.8 percent in 2024-25 as per budget estimates.

**Gross Fiscal Deficit** is the difference between overall expenditure (both revenue and capital) and the sum of revenue receipts along with non-debt capital receipts.

Key areas contributing to State's Deficit

- **Loss in Power sector:** The losses of power distribution companies stood at a staggering Rs 6.5 lakh crore by 2022-23, despite many attempts to improve their financial metrics over the years. To put this loss in perspective — its equivalent is around 2.4 per cent of GDP.
- **Subsidy and State Guarantees:**
  - In recent years, states have also seen a sharp increase in subsidies, due to farm loan waivers, free/subsidised services like electricity to agriculture and households, transport, gas cylinder and cash transfers to farmers, youth and women.
  - As per the RBI report, state guarantees have witnessed a steady increase, rising from 2 percent of GDP at the end of March 2017 to 3.8 per cent by March 2023.

Way Ahead to Achieve Fiscal Prudence

- **Improving Public Expenditure Efficiency:** The RBI's report suggested improving public expenditure efficiency by implementing outcome budgeting, i.e.,

linking spending to measurable outcomes, to foster accountability, and targeted resource use is crucial to generate maximum developmental impact.

- **Adopt BASEL norms:** Implementing Risk-Based frameworks such as counter-cyclical policies for financial resilience.
- **Credible roadmap for debt consolidation:** In particular, the report says that states with high levels of debt — these would include states such as Punjab, Bihar, Kerala and West Bengal -- require better short and long term roadmap.
- **Enhance Revenue Sources:** Improve state tax administration and rationalize subsidies.
- **Transparency in Borrowings:** Ensure strict reporting of off-budget liabilities.
- **Focus on Growth-Enhancing Expenditure:** Prioritize capital spending to boost economic growth.

Conclusion

State finances have improved, but challenges like power sector losses, rising subsidies, and increasing guarantees persist. To stay on track, states need a clear debt strategy, better revenue management, transparency in borrowings, and a stronger focus on growth-driven spending.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. Discuss the key factors contributing to the fiscal deficit in state finances and suggest measures to address them. [10 marks, 150 words]

FALL IN STUDENT ENROLLMENT

**Why in News:** School enrollment down by over 1 crore in 2023-24, says government Report

Key Details of the Report

The latest data released by the Ministry of Education (MoE) and the total enrollment of students has **dropped by over a crore in 2023-24 as compared to the previous years.**

- According to **Unified District Information System for Education Plus (UDISE+)** report a total of 24.8 crore students enrolled in the academic year 2023-24.
- Over the last four years, the enrollment data has hovered around 26 crores.
- States like **Bihar, Uttar Pradesh and Maharashtra saw among the highest drop in enrolments.** In 2018-19, Bihar reflected an enrolment of over 2.49 crore students which dropped to over 2.13 crore (a dip of over 35.65 lakh students) in the respective years UDISE+ report data.

About UDISE

- UDISE+ is one of the **largest Management Information**

**Systems initiated by Department of School Education and Literacy**, Ministry of Education, GoI covering more than 14.72 lakhs of schools, 98.08 lakhs of teachers and 24.80 crores of children.

- **Function:** The Unified District Information System for Education Plus (UDISE+) facilitates online uploading of data at school level with inbuilt validation checks and the subsequent data verification at the block, district and State level ensures data reliability and timely completion.
- **Data linked with aadhar:** In 2022-23, MoE started a revitalised UDISE+ ecosystem which captures data on more than 60 fields for each student and to maintain the uniqueness of the child the Aadhaar details were also collected on a voluntary basis.
- **Educational ID:** A separate unique educational ID (EID) for every student has been created in the UDISE+ portal to cover each and every child under the ecosystem of UDISE+.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

- Q. UDISE+ was seen recently in news, is related to
- Maternity benefits for Pregnant women
  - Vaccination program for Infants.
  - Food fortification initiative of the government
  - Portal for data collection of school and students.

Answer: (d)

## GLOBAL CYBERSECURITY OUTLOOK 2025

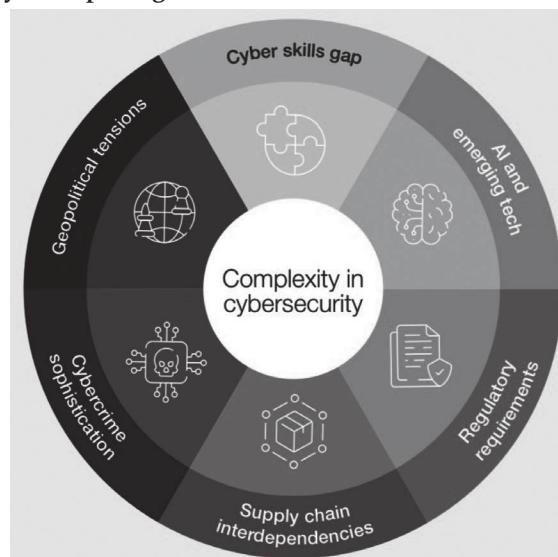
**Why in News:** Recently, the **World Economic Forum**, in collaboration with Accenture, released the **Global Cyber Security Outlook, 2025**.

#### Key Highlights

- **Rising cybersecurity risks:** Cyber Threats continue to escalate, with 72% of respondents to the Global Cybersecurity Outlook survey reporting a **rise in cyber risks in both frequency and sophistication**.
- **Regional disparity:** While only 15% of respondents in Europe and North America lack confidence in their country's ability to respond to major cyber incidents targeting critical infrastructure, this proportion rises to 36% in Africa and 42% in Latin America.
- **Supply chain vulnerabilities:** The increasing complexity of supply chains, coupled with a lack of visibility and oversight into the security levels of suppliers, has emerged as the leading cybersecurity risk for organisations.
- **Geopolitical tensions:** Nearly 60% of organisations state that geopolitical tensions have affected their cybersecurity

strategy. Geopolitical turmoil has also affected the perception of risks, with one in three CEOs citing **cyber espionage and loss of sensitive information/intellectual property (IP)** theft as their top concern.

- **AI and Cybersecurity:** The rapid implementation of AI without the necessary security safeguards to ensure cyber resilience introduces new vulnerabilities. **Nearly 47% of organisations cite adversarial advances powered by generative AI (GenAI) as their primary concern, enabling more sophisticated and scalable attacks.**
- **Shortage of critical cyber talent:** Only 14% of organizations are confident that they have the people and skills they need today.
- **Economic losses:** Scammers have **siphoned away more than \$1 trillion globally** in the past year, costing certain countries losses more than 3% of their GDP.
- **Cybersecurity and critical infrastructure:** Cybercriminals can exploit the vulnerabilities in operational technology to **disrupt water treatment processes, could incapacitate essential laboratory systems affecting biosecurity, and cyber espionage via telecommunications infrastructure.**



Cyber resilience must be recognized as a **collective responsibility**, with organizations of all sizes working together to fortify the interconnected networks that underpin the digital economy.

### EXPECTED QUESTIONS FOR UPSC CSE

#### Prelims MCQ

- Q. 'Global Cybersecurity Outlook, 2025,' recently seen in the news, is released by which of the following organizations?
- World Economic Forum
  - International Telecommunication Union
  - Global Cybersecurity Association
  - None of the Above

Answer: (a)

## HONORING THE LASTING IMPACT OF DR. MANMOHAN SINGH'S WISE LEADERSHIP

**Why in News:** The passing of Dr. Manmohan Singh provides an opportunity to assess the enduring impact of the 1991 economic reforms, which he spearheaded as Finance Minister, in collaboration with a team of distinguished economists, Ministers, and professionals such as Montek Singh Ahluwalia, C. Rangarajan, P. Chidambaram, and Shankar Acharya.



### Key Details

- These reforms, often characterized by the **release of “animal spirits,”** marked a transformative phase in India’s economic landscape.
- **While much has been written about the success and far-reaching effects of the 1991 reforms, it is essential to critically examine the subsequent economic period, particularly the decade between 2004-14 and the years that followed.**

### Key components of the 1991 reforms

- **Liberalization:** The Indian economy, which had been largely state-controlled since independence, opened up to the global market. Restrictions on imports, foreign investment, and domestic businesses were significantly reduced.
- **Privatization:** The government reduced its control over many state-owned enterprises (SOEs), opening the door for privatization and greater private sector participation.
- **Economic Deregulation:** A major shift occurred in the regulatory environment. The government dismantled many monopolies and licensing regimes, allowing businesses to operate with more freedom.
- **Monetary and Fiscal Reforms:** The Reserve Bank of India (RBI) was given more autonomy in regulating the economy. The interest rate system was liberalized, and inflation was brought under control.
- **Exchange Rate Reforms:** The Indian rupee was devalued, and a market-determined exchange rate system (managed float) was introduced, replacing the fixed exchange rate system.

### The Impact of Macroeconomic Policies on India’s Growth (2004-14)

Five key outcomes stand out from these 1991 reforms, which had significant implications for the lives of Indian citizens.

These outcomes laid the foundation for accelerated structural change, which, had it been sustained, could have positioned India as a high-income, high-human development index nation by the 2040s.

- **Rising Savings and Investment Rates**
  - In the 1980s, India started benefiting from the “demographic dividend”. This led to higher savings.
  - By 2003-04, India’s savings rate had reached 23% of the total economy (GDP). Investment also grew to 24% of GDP.
  - Thanks to smart macroeconomic policies, India increased investment even further, from 24% to 38% of GDP between 2004 and 2010. This was the highest investment rate India had ever seen and was close to China’s investment levels.
  - As a result, India’s economy grew at an average rate of 8.5% per year between 2004 and 2009. Even though the global economy was booming, India’s growth was also helped by policies that kept the exchange rates stable, supporting exports.
  - Even amidst the global economic crisis of 2008-09, India’s economy quickly rebounded due to a well-structured fiscal and monetary policy stimulus. Consequently, growth continued at 7.5% annually from 2009-14, with an overall average of 7.8% for the decade, an unprecedented rate in India’s history.
- **Broad-Based Growth Across All Sectors**
  - The growth during this period was broad-based, affecting all sectors of the economy — from agriculture to industry to services.
  - With a strong economy, there was sustained demand for goods and services, which created jobs in many sectors. For instance:
    - **Non-farm jobs (jobs outside agriculture) grew by 7.5 million every year, which was a record.**
    - Construction jobs almost doubled, from 26 million in 2004 to 51 million in 2012.
    - Manufacturing jobs increased by 8 million, especially in industries that employed many workers (like textiles, food, and construction).
    - New jobs also appeared in modern services like telecom, banking, insurance, transport, and healthcare.

- **Decline in Agriculture Jobs**
  - Before 2004, even though people migrated from farms to non-farm jobs, the total number of people working in agriculture never really decreased.
  - But after 2004, for the first time in India's history, the number of people working in agriculture started to fall. This was because non-farm jobs were growing rapidly, and there was less need for workers in farming.
  - This also led to a "tighter" labor market in rural areas, meaning there was less unemployment, helped by **government programs like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, which provided jobs in rural areas.
- **Rising Wages and Improved Living Standards**
  - The rapid growth of non-farm jobs and the tightening of the rural labor market contributed to a consistent rise in real wages (adjusted for inflation).
  - **This wage increases benefited both casual laborers and regular salaried workers.**
- **Poverty Reduction and Increased Consumption**
  - As wages increased, people had more money to spend on goods and services, leading to a rise in private consumption (**especially for basic consumer goods**).
  - For the first time in India's history, the number of poor people actually decreased. **From 1950 to 2004, although poverty rates had decreased, the absolute number of poor remained high because of rapid population growth.**
  - However, between 2004-05 and 2011-12, 138 million people were lifted out of poverty, a remarkable achievement, similar to what China experienced during its rapid growth.

The period 2004-14 demonstrated the transformative potential of well-structured macroeconomic policies in driving sustainable and inclusive growth. The rise in savings and investments, the diversification of the economy, the creation of millions of non-farm jobs, and significant poverty reduction marked a historic phase in India's economic development. These policies not only accelerated growth but also laid the foundation for a more prosperous, diversified, and equitable economy, positioning India to emerge as a global economic powerhouse in the coming decades.

#### Other significant achievements of Dr. Manmohan Singh's Government

- **Foreign Policy:** Dr. Singh's foreign policy emphasized economic cooperation, peace, and strategic autonomy while upholding India's non-alignment principles.
  - **Deepening Indo-US Ties:** The landmark Indo-US Civil Nuclear Deal (2008) allowed India access to nuclear technology without signing the Non-Proliferation Treaty.

- **Strengthening Relations with China:** Bilateral trade flourished, and the reopening of Nathula Pass marked a significant step in cross-border cooperation.
- **Healthcare and Education:** Dr. Manmohan Singh's government prioritized healthcare and education to improve the lives of millions, particularly in rural areas.
  - **Strengthening Rural Healthcare:** The National Rural Health Mission (NRHM) was launched in 2005 to provide accessible and affordable healthcare to rural communities.
  - **Ensuring Education for All:** The Right to Education Act (RTE), passed in 2009, made free and compulsory education a fundamental right for children aged 6 to 14.
  - **Boosting Higher Education:** His government established eight new IITs and expanded elementary education through the Sarva Shiksha Abhiyan, ensuring greater educational opportunities.
- **National Security:** To enhance national security and improve governance, several key reforms were introduced.
  - **Fighting Terrorism:** After the 2008 Mumbai attacks, the government set up the National Investigation Agency (NIA) to combat terrorism more effectively.
- **Promoting Transparency:** The **Right to Information (RTI) Act**, passed in 2005, empowered citizens by ensuring greater government accountability.

#### EXPECTED QUESTIONS FOR UPSC CSE

##### Prelims MCQ

- Q. In modern economics, "Animal Spirits" often refers to which of the following?
- (a) The physical health of labor forces impacting economic output.
  - (b) The rational decision-making by businesses based on long-term trends.
  - (c) The emotional confidence or lack thereof among investors and consumers that drives economic activity.
  - (d) The physical resources required to produce goods and services.

Answer: (c)

##### Descriptive Question

- Q. Dr. Manmohan Singh's tenure as the Prime Minister of India is often regarded as a period of transformative economic reforms and cautious diplomacy. Discuss the challenges he faced and how his approach to governance shaped modern India. [150 words] [10 marks]

## SWAMI VIVEKANANDA'S VISION: EMPOWERING YOUTH FOR A VIKSIT BHARATA

**Why in News:** January 12 is celebrated as the National Youth Festival across India to honor the birth anniversary of Swami Vivekananda, a great philosopher and youth icon.

### Key Details

- Swami Vivekananda emphasized the **power of youth** in shaping a strong and progressive nation.
- This festival serves as a platform to **inspire and mobilize young minds** toward national development.



### Key points about Swami Vivekananda

- He was born as Narendranath Datta on January 12, 1863. His birth anniversary is celebrated every year as **National Youth Day** in India.
- In 1893, at the request of Maharaja Ajit Singh, he adopted the name 'Vivekananda.'
- He passed away in 1902 at **Belur Math**, West Bengal.

### Contributions:

- He introduced the world to Indian philosophies like **Vedanta** and **Yoga**.
- He developed **neo-Vedanta**, a modern interpretation of Hinduism that blends spirituality with material progress.
- Vivekananda emphasized the importance of **education** for national development.
- He is most famous for his speech at the **World Parliament of Religions** in Chicago in 1893, where he represented Hinduism to the world.
- He described four ways (or paths) to reach **moksha** (liberation) from worldly attachments: **Raja-yoga**, **Karma-yoga**, **Jnana-yoga**, and **Bhakti-yoga**.
- Netaji Subhas Chandra Bose** called him the "maker of modern India."

### Associated Organizations:

- Vivekananda was the chief disciple of **Ramakrishna Paramhansa** and founded the **Ramakrishna Mission** in 1897, which focuses on education, health, women's empowerment, and social welfare.
- He established **Belur Math** in 1899, which became his permanent home and the headquarters of the Ramakrishna Math & Mission.

### Viksit Bharat Young Leaders Dialogue

- This is a **new initiative** aimed at involving **India's youth** in the country's developmental journey.
- The **primary goal** is to **harness the energy, creativity, and leadership skills** of young people to contribute to the vision of **Viksit Bharat (Developed India)**.
- PM believes that **India's youth** play a **central role** in the nation's progress.
- The **dialogue** serves as a **platform** for young leaders to:
  - Engage in **meaningful discussions**.
  - Exchange ideas** on national and global challenges.
  - Collaborate on innovative solutions** for India's growth.
- The program includes **competitions and multi-stage challenges** that encourage youth to **think critically and proactively contribute** to India's development.
- Significance of the competition: It tests multiple skills:**
  - Knowledge & awareness** (Quiz)
  - Creative thinking** (Essay & blog writing)
  - Problem-solving & innovation** (Pitch deck)
  - Leadership & communication** (Final presentation)

### About National Youth Festival 2025

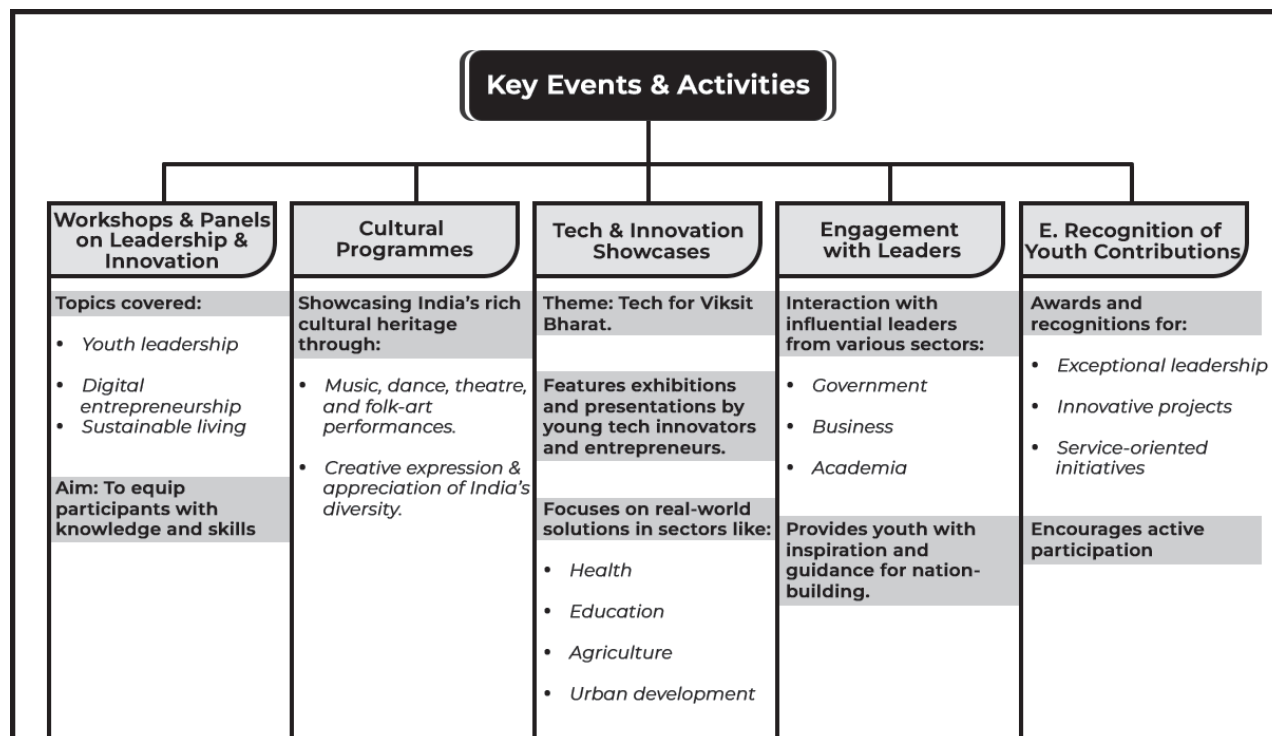
It is an **annual celebration** aimed at promoting **national integration, youth empowerment, and creativity**. However, the **2025 edition** introduces several **new and unique elements**, making it a standout event.

### Theme: Youth for Sustainable Development

- Focuses on **youth as drivers of global change**, aligning with India's commitment to the **Sustainable Development Goals (SDGs)**.
- Includes **workshops, seminars, and cultural activities** promoting a **greener and more inclusive** future.
- Special emphasis on technology & innovation** with sessions on:
  - Tech for Good** – Using technology for social impact.
  - Innovation for India's Development** – Encouraging young minds to find innovative solutions for national growth.

### Expanded Virtual Participation

- Integration of digital platforms** allows **youth from remote areas** to participate.
- Online access to **discussions, workshops, and talent showcases** ensures **inclusivity and wider reach**.
- Encourages **greater engagement of youth across the country**.



**About Mera Yuva Bharat (MY Bharat)**

Mera Yuva Bharat (MY Bharat) is an autonomous body under the Ministry of Youth Affairs and Sports.

It serves as a platform for youth empowerment, focusing on:

- Engagement in nation-building.
- Knowledge sharing and mentorship.
- Opportunities for leadership and innovation.

**MY Bharat's Role in the National Youth Festival**

- Curates the festival's programs to align with youth aspirations.
- Provides resources and guidance to help young people contribute to India's development.
- Facilitates digital integration, ensuring youth from all regions can participate.
- Supports youth-led initiatives, helping them navigate social and technological challenges.
- Encourages innovation and problem-solving for a better India.

**Way Forward**

**India's Youth as a Driving Force**

- The youth is India's most valuable asset, crucial for achieving the vision of Viksit Bharat (Developed India).
- Their energy, ideas, and ambition will drive national transformation.
  - The Viksit Bharat Young Leaders Dialogue is a key initiative that will:
  - Open new opportunities for youth leadership.

- Shape political and social mobilisation.

**Swami Vivekananda's Vision for Youth**

- Swami Vivekananda believed in the limitless potential of youth.
- He famously said:
  - "Give me one hundred 'believing' young men... I will transform India as the number one nation in the entire world."
- This belief underscores the importance of youth in nation-building.

**EXPECTED QUESTIONS FOR UPSC CSE**

**Prelims MCQ**

Q. Consider the following statements regarding the Swami Vivekananda:

- He introduced the world to Indian philosophies like Vedanta and Yoga.
- Mahatma Gandhiji called him the "maker of modern India."
- In 1893, at the request of Maharaja Ajit Singh, he adopted the name 'Vivekananda.'
- Vivekananda emphasized the importance of education for national development.

Which of the statements given above are correct?

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

(c) Answer

**Descriptive Question**

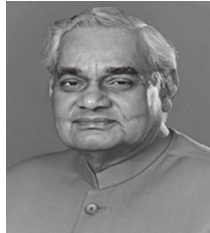
Q. Swami Vivekananda’s teachings continue to inspire youth across generations in India. Discuss the significance of the National Youth Festival in promoting his ideals and its role in addressing the challenges faced by the youth in contemporary India. [150 words] [15 marks]

**ATAL BIHARI VAJPAYEE**

**Why in News:** Former Prime Minister Atal Bihari Vajpayee was remembered on his birth centenary.

**About Atal Bihari Vajpayee**

- Vajpayee’s journey in Indian politics is a **saga of resilience, innovation, and diplomacy**. Known for his exceptional oratory skills and his astonishing talent with words, he left an indelible mark on the nation’s political landscape.
- Born in Gwalior, Madhya Pradesh, Vajpayee entered the political arena in 1957, when he was just thirty-three, as a member of the Bharatiya Jana Sangh (BJS), a precursor to the BJP.
- In 1980, **when the BJP (Bharatiya Janta Party) was formed, he became its founding president**. Vajpayee’s leadership paved the way for his tenure as Prime Minister, twice.
- Despite a brief 13-day term in 1996, Vajpayee’s second stint in 1998 was marked by strategic alliances and the consolidation of the BJP’s hold on government in 1999.



**Major Accomplishments and Initiatives of Atal Bihari Vajpayee**

- **Road Development Project:** The **Golden Quadrilateral** connected four metros, Kolkata, Chennai, Delhi and Mumbai through a network of highways.
- **Privatisation:** Vajpayee privatised a few companies like VSNL, BALCO and Indian Petrochemicals Corporation Limited.
- **Education:** Foundation of the Sarva Siksha Abhiyan that made education a fundamental right for children aged between 6 and 14 years.
- **Nuclear Tests:** Vajpayee guided India’s declaration as a nuclear weapon state in 1998. He announced that India had conducted three underground nuclear tests in Pokhran. He also submitted to the House a paper entitled “Evolution of India’s Nuclear Policy”.

- **Telecom:** Owing to Atal Bihari Vajpayee’s New Telecom Policy, India witnessed a growth of telecom penetration from 3% to 70% in a span of 12 years.
- **Delhi Metro:** Vajpayee was the one to approve and inaugurate the first metro project in Delhi that started from Kashmere Gate to Seelampur.
- **Look East Policy:** Atal Bihari Vajpayee gave birth to the ‘Look East’ policy that is currently followed by PM Modi. He improved relations with China, Israel, US and Pakistan.
- **Space:** Atal Bihari Vajpayee passed the Chandrayan-I project on 15th August 2003.
- **Fiscal reforms:** He also introduced the **Fiscal Responsibility Act** to bring down fiscal deficit and in a span of 5 years, he took public-sector savings to a good positive score.
- His tenure as India’s External Affairs Minister during 1977-1979 in Moraji Desai’s cabinet saw **remarkable strides in improving relations with Pakistan and China**. Vajpayee also made his iconic speech, in Hindi, at the 32nd UN General Assembly during this time.

**Philosophical Values of Atal Bihari Vajpayee**

- **Dharma-Centric Leadership**
  - **Rooted in Indian Ethical Principles:** Vajpayee embodied the ancient Indian philosophy of dharma, emphasizing duty and moral responsibility.
  - **Service-Oriented Governance:** His approach as a leader was to act for the welfare of the people, staying true to the principles of justice and fairness.
  - **Moral Integrity:** Demonstrated by his resignation in 1996, prioritizing values over power.
- **Commitment to Good Governance**
  - **Transparency and Accountability:** Merged transformation with transparency and decisiveness with democratic deliberation.
  - **Equity in Development:** While urban connectivity was enhanced through the Golden Quadrilateral project, rural connectivity was prioritized through the Pradhan Mantri Gram Sadak Yojana (PMGSY).
  - **Inclusive Leadership:** As the head of a coalition government, he excelled in bringing diverse political ideologies together for a stable administration.
- **People-Centric Leadership**
  - **Empathy and Understanding:** Known for connecting with the aspirations and needs of the common people, especially through rural development programs.
  - **Proponent of Democratic Values:** Believed in dialogue and consensus, avoiding jingoism and divisive politics.
- **Personal Virtues**
  - **Humility and Grace:** His dignified resignation in 1996 showcased his respect for democratic norms.

- **Poetic Sensibility:** His poetic nature reflected a deep connection with the human spirit and societal aspirations.
- **Moderation and Accommodation:** Excelled as a coalition leader, ensuring unity among diverse political entities.

### Conclusion

- Atal Bihari Vajpayee **wasn't just a statesman**, he was a leader who led with heart and vision. He blended wisdom with humility, governance with poetry, and pragmatism with idealism. His leadership shaped modern India, and his legacy of integrity, inclusivity, and progress continues to inspire.

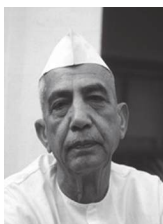
### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

Q. Atal Bihari Vajpayee's leadership was characterized by a blend of pragmatism, inclusivity, and visionary policymaking. Discuss his contributions to India's economic growth, infrastructure development, and foreign policy. How did his governance philosophy influence India's democratic and developmental trajectory? [250 Words, 15 Marks]

## CHAUDHARY CHARAN SINGH

**Why in News:** The Vice-President of India conferred the Chaudhary Charan Singh Awards 2024, honouring outstanding achievements in agriculture, rural development, and journalism on the former PM's birth anniversary.



### Chaudhary Charan Singh Awards 2024

- Chaudhary Charan Singh Awards 2024 celebrated remarkable contributions to agriculture, rural development, and journalism.
  - The **Kalam Ratna Award** was presented to Ms. Neerja Chowdhury for her dedication to insightful journalism.
  - The **Sewa Ratna Award** was conferred upon **Dr. Rajendra Singh**, the "Waterman of India," for his pioneering efforts in water conservation.
  - The **Krishak Utthan Award** went to Dr. Firoz Hossain for advancing agricultural research and innovation.
  - Lastly, the **Kisan Award** was bestowed upon **Mr. Pritam Singh** for his contributions to agricultural excellence.

### Chaudhary Charan Singh's Contributions

- **Agriculture and Rural Development**
  - He was the **chief architect of land reforms in U.P.**; he took a leading part in the formulation and finalisation

of the Dept. Redemption Bill 1939, which brought great relief to rural debtors.

- As Chief Minister, he was instrumental in **bringing about the Land Holding Act 1960 which was aimed at lowering the ceiling on land holdings** to make it uniform throughout the State.
- **Minimum Support Price (MSP):** Singh's advocacy for fair procurement prices for farmers laid the groundwork for the MSP system, which remains a cornerstone of agricultural policy in India.
- **National Bank for Agriculture and Rural Development (NABARD):** He championed the **creation of institutions like the National Bank for Agriculture and Rural Development (NABARD)** to ensure credit availability for farmers and rural enterprises.
- **Agri-Marketing:** As early as 1938, Singh introduced the Agricultural Produce Marketing Bill, which was eventually passed in 1964. This legislation focused on creating an infrastructure for farmers to sell their produce fairly, establishing regulated agri-markets.
- **Department of Rural Development:** Singh elevated the Rural Development Department to a full-fledged Ministry, ensuring dedicated focus and resources for rural advancement.

### Journalism

- He was the author of several books and pamphlets, including 'Abolition of Zamindari', 'Co-operative Farming X-rayed', 'India's Poverty and its Solution', 'Peasant Proprietorship or Land to the Workers' and 'Prevention of Division of Holdings Below a Certain Minimum'.

### Ethical Values from the Life of Chaudhary Charan Singh

- **Simplicity and Humility:** Despite holding high political office, Chaudhary Charan Singh led a simple and frugal life, avoiding extravagance and ostentation.
- **Commitment to Social Justice:** Singh's advocacy for land reforms, fair wages, and empowerment of marginalized communities showed his dedication to creating a just and equitable society.
- **Inclusivity and Equality:** He rejected caste and communal divisions, promoting policies that encouraged inter-caste harmony and the upliftment of the socially disadvantaged.
- **Integrity and Honesty:** Known for his uncompromising stance on corruption, Singh believed that honesty in public administration was essential for maintaining trust in governance.

### PRELIMS SPECIAL

#### National Farmers Day (Kisan Diwas)

- The National Farmers Day also known as Kisan Diwas is celebrated on 23rd December every year to mark the

Birth Anniversary of the 5th Prime Minister of India, Shri Chaudhary Charan Singh.

- The occasion marks the display of a wide array of various programs, debates, seminars, competitions, discussions, workshops, exhibitions, etc., on the farmers' unparalleled contributions to the growth and progress of the country's economy.

## SAVITRIBAI PHULE

**Why in News:** The Prime Minister paid tributes to Savitribai Phule on her Jayanti.

### About Savitribai Phule

- Savitribai Phule is famous for her massive involvement towards the **empowerment and emancipation of women through education** and for the elimination of slavery and inequity on the grounds of religion, caste and race.
- She was the first lady teacher of the first girl's school in India. Not only a teacher, she was a great social reformer. In the nineteenth century she was a power source of women's education and woman empowerment.
- She was also a **founder of modern Marathi poetry**.
- A Dalit woman from the Mali community, Savitribai was born on January 3, 1831, in Maharashtra's Naigaon village.
- Married off at the age of 10, her husband Jyotirao Phule is said to have educated her at home.
- Jyotirao admitted Savitribai to a teachers' training institution in Pune.



### Role in Women Education and Empowerment

- Savitribai Phule and Jyotirao Phule **established a girl's school with nine students in 1848 at Pune in Bhide Wada**.
  - Savitribai Phule **became the first teacher in this school**.
  - This school included western curriculum of social studies, mathematics and science.
- To fight against untouchability Savitribai Phule and Jyotirao Phule started another school for **children from the Mang and Mahar castes in 1852**.
- In the year of 1852, in Pune, Savitribai Phule and her husband established three different schools for girls.
- Savitribai Phule was a **feminist or social reformer who established the base of women's education in India** when it was full of orthodoxy, strict caste division and superstition about 180 years ago.
- She also raised her **strong voice against child marriage, feticide, cast discrimination** etc.

### Role as Social Reformer

- Savitribai Phule inaugurated the **Mahila Seva Mandal** to make women aware about their rights, self-respect and other social issues.
- She had done many social activities to protest the traditional narrow-mindedness about widows.
- Savitribai Phule and Jyotirao Phule started a care centre for pregnant Brahmin widows and pregnant rape victims named **Balhatya Pratibandhak Griha**.
  - In this care centre, they helped deliver and save children. It also helped in preventing infanticide.
- Not only that she worked on **widow re-marriage and against child marriage and sati pratha**.

### Savitribai Phule: Author and Poet

- Savitribai Phule was a noted author and poet.
- She wrote **Kavya Phule (1854)** and **Bavan Kashi Subodh Ratnakar (1892)** and also wrote a poem titled **Go, Get Education**.
- Through these publications she tried to encourage and motivate women and lower castes and also tried to encourage and motivate those who opposed her works and contribution to the society.

### EXPECTED QUESTION FOR UPSC CSE

#### Descriptive Question

- Q. Savitribai Phule played a pioneering role in women's education and social reform in 19th-century India. Discuss her contributions in the field of education and social empowerment, highlighting their relevance in contemporary India. [250 Words, 15 Marks]

## RANI VELU NACHIYAR

**Why in News:** Prime Minister remembered the courageous Rani Velu Nachiyar on her birth anniversary.

### Life History of Rani Velu Nachiyar

- Rani Velu Nachiyar was the **first queen to fight against the British colonial power in India**. She is known by Tamils as **Veeramangai**.
- She was the princess of Ramanathapuram and the only child of Raja Chellamuthu Vijayaragunatha Sethupathy and Rani Sakandhimuthal of the **Ramnad kingdom**.
- Rani Velu Nachiyar was trained in **war match weapons usage, martial arts like Valari, Silambam (fighting using stick), horse riding and archery**.
- She was a scholar in many languages and she had proficiency with languages like French, English and Urdu.



- Velu Nachiyar married Muthuvaduganathaperiya Udaiyathevar of **Sivagangai** Royal family.
- Queen Velu Nachiyar **took to arms when her husband was killed by combined forces of British soldiers and the son of the Nawab of Arcot.**
- Later, she escaped with her daughter, lived under the protection of **Hyder Ali** at Virupachi near Dindigul for eight years.
- During this period, **she formed an army and formed an alliance with Gopala Nayaker and Hyder Ali** with the aim of attacking the British.
- In **1780** Rani Velu Nachiyar fought the British with military assistance of her allies and won the battle. Thus, she became the first queen who successfully fought against the British in India. She ruled her regained kingdom for a decade.
- Subsequently, Queen Velu Nachiyar granted powers to **Marudu brothers** to administer the country in 1780.
- She died a few years later, on 25 December 1796.

## THIRUVALLUVAR

**Why in News:** Prime Minister remembers the great Tamil philosopher, poet and thinker Thiruvalluvar on Thiruvalluvar Day.

### About Thiruvalluvar

- **Literary Contribution of Tiruvalluvar**
  - Tiruvalluvar’s most significant literary contribution is the **Tirukkural**, also known as the Kural.
  - It is a collection of 1,330 short couplets, or Kurals, organized into 133 chapters, each containing 10 couplets.
  - These couplets are divided into three sections:
    - ◆ **Aram (Virtue):** Discusses moral and ethical principles.
    - ◆ **Porul (Wealth):** Deals with political and economic matters.
    - ◆ **Inbam (Love):** Explores the themes of love and desire.
- **Influence on Tamil Literature**
  - Tirukkural shaped Tamil literature with its concise, aphoristic style.
  - It influenced later literary works and thinkers, including religious scholars, philosophers, and political leaders.
  - The work’s poetic structure, elegance, and profound insights have made it one of the most studied texts in Tamil literature.



- **Ethical Values and Learnings from the Life of Tiruvalluvar**
  - **Emphasis on Virtue:** Tiruvalluvar stressed the importance of living a virtuous life, guided by principles of righteousness, integrity, and compassion.
  - **Importance of Balance:** The Tirukkural advocates for a balanced approach to life, harmonizing the pursuit of virtue, wealth, and love.
  - **Universalism:** Tiruvalluvar’s teachings transcend cultural and religious boundaries, offering guidance applicable to all of humanity.
  - **Practical Wisdom:** The Tirukkural provides practical advice for navigating various aspects of life, from personal relationships to governance.

### Contemporary Legacy of Thiruvalluvar

- Thiruvalluvar, fondly referred to as Valluvar by Tamils, has long been regarded as a Tamil cultural and moral icon, who is **revered by Tamils cutting across lines of caste and religion as an ancient saint, poet, and a philosopher.**
- The historicity of Thiruvalluvar is uncertain. The **period during which he lived is debated, as is his religious affiliation.** Some accounts place him in the 3rd or 4th century CE; others date him to around 500 years later, in the 8th or 9th century.
- He has been identified as both a Hindu and a Jain sage, while Dravidian groups consider him as a saint with no religious identifiers except his Dravidian roots.

### EXPECTED QUESTION FOR UPSC CSE

#### Prelims MCQ

- Q. Aram, Porul and Inbam are the sections of which of the following Tamil texts?
- (a) Tolkappiyam      (b) Thiruvagasam  
(c) Tirukkural      (d) Thirumanthiram

Answer: (c)

## KHWAJA MOINUDDIN CHISTI

**Why in News:** Prime Minister of our country recently greeted people on the **Urs of Khwaja Moinuddin Chisti** on January 2, 2025, and gave the Union Minister for Minority Affairs a ceremonial “chadar” to be offered at the Ajmer Sharif Dargah.

### Early Life and Spiritual Journey

- Khwaja Moinuddin Chisti was **born in 1141 CE in Chishti in Herat, Afghanistan.** Other names for him include “Gharib Nawaz” and “Benefactor of the poor.”

- He is the most well-known saint of the **Chishti order of Sufism**. Following a brief stay in **Lahore**, Khwaja Moinuddin Chishti travelled to **Delhi**, where he began preaching in his distinctively gentle manner, **inspiring millions of Hindus and Muslims to follow the path of truth and unity**.
- Thereafter, Khwaja Moinuddin Chishti left Delhi and headed towards the remote city of **Ajmer**, where he resided with one of the most powerful princes of Northern India, Raj Prithviraj.

**Philosophy and Contributions**

- Moinuddin engaged with Hindu sages and mystics, focusing on equality and divine love while **rejecting religious rigidity and sharing devotional values**.
- His maxim **“Sulh-i-Kul”** (Peace with all) was imitated and symbolised by adherents of all religions.
- Prominent followers of Moinuddin, including **Qutbuddin Bakhtiyar Kaki, Baba Fariduddin, Nizamuddin Auliya, and Chirag Dehalvi**, contributed to the dissemination of his teachings.
- **Mughal Patronage:** Emperor Akbar helped bring Ajmer back to life by honouring Moinuddin, **paying pilgrimages to his shrine**, and enhancing the city’s aesthetics.
- He achieved the goals of uniting the **different castes, communities, and races and lifting humankind** out of the abyss of materialistic worries that are currently guiding humanity towards annihilation.

Urs refers to the **death anniversary of Sufi saints**, a time when their followers gather at their dargahs to offer prayers and seek blessings.

**PRELIMS SPECIAL**

**Sufism**

- Sufism is a mystic belief system that originated in the Middle East in the **eighth century C.E.** and is devoted to **experiencing God as the pinnacle of divine love**.
- Sufis hold that **overly rational thinking prevents people from comprehending God’s ethereal and loving essence**.
- In order to overcome the inhibiting self, they concentrate on having a **direct experience of God through ecstatic practice**.
- With the exception of the Naqshbandi order, which can trace its roots to Caliph Abu Bakr, nearly all traditional Sufi groups can **trace their “chains of transmission” back to Muhammad through his cousin and son-in-law Ali ibn Abi Talib**.
- According to each order, Sufi teachings have been transmitted from teacher to pupil over the ages known as **“Silsila”**.

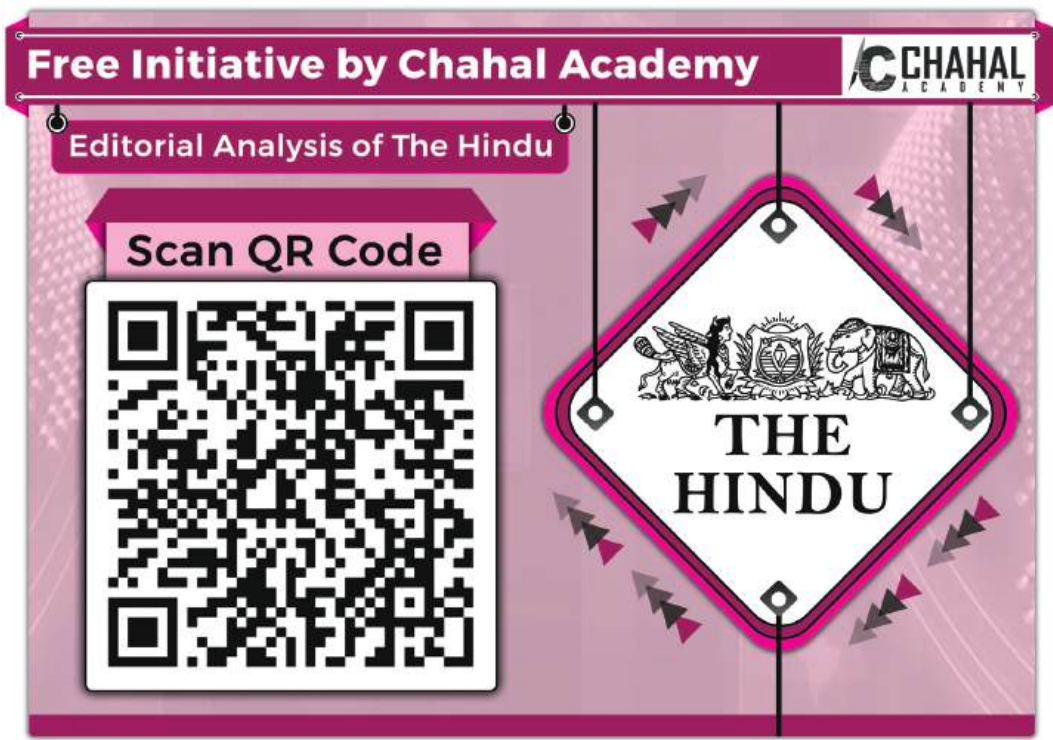
**EXPECTED QUESTION FOR UPSC CSE**

**Prelims MCQ**

Q. In the medieval history of India, who is known as ‘Garib Nawaz’?

(a) Khwaja Moinuddin Chisti (b) Nizamuddin Auliya  
(c) Abdul Kadir Gilani (d) Baba Farid

Answer: (a)



# ARTICLE FROM YOJANA (JANUARY 2025)

## EMOTIONAL INTELLIGENCE IN PUBLIC ADMINISTRATION: A BUDDHIST APPROACH

### Introduction

**Emotional Intelligence (EI)** is integral to effective public administration as decisions in this domain impact society at large. EI encompasses self-awareness, empathy, and the ability to manage emotions, which are crucial for fostering trust, cooperation, and ethical governance. A nuanced EI approach aligns closely with Buddhist teachings, which emphasize emotional regulation, mindfulness, and ethical living. This intersection offers valuable insights for public administrators navigating complex societal challenges.

### 1. Emotional Intelligence in Public Administration

#### i. Significance of EI in Governance:

- Public administration is inherently people-oriented, requiring administrators to engage empathetically with diverse groups.
- EI facilitates effective communication, enhances public trust, and ensures equitable decision-making.

#### ii. Key Components of EI for Administrators:

- **Self-awareness:** Understanding one's own emotional triggers to avoid biased decisions.
- **Empathy:** Addressing citizens' concerns with sensitivity and fairness.
- **Emotion Regulation:** Maintaining composure in high-pressure situations.

#### iii. Role of EI in Democratic Leadership:

- Promotes shared values and inclusivity.
- Enables public administrators to mediate conflicts and foster cooperation among stakeholders.

### 2. Buddhist Philosophy on Emotional Intelligence

#### i. Understanding the Mind:

- Buddhist teachings explore the nature of emotions, their origins, and their effects on behavior.
- The **Abhidharma Samuccaya** classifies emotions as **virtuous (kusala)** or **non-virtuous (akusala)**, guiding emotional regulation.

#### ii. Roots of Mental Afflictions:

- **Six root afflictions:** attachment, anger, pride, ignorance, doubt, and **distorted views (klesa)**.

- These afflictions disturb mental equilibrium, hindering rational decision-making.

#### iii. Counteracting Negative Emotions:

- **Mindfulness and Meta-awareness:** Cultivating awareness of thoughts and emotions.
- **Compassion and Wisdom:** Emphasizing altruism and clarity in judgment.

### 3. Buddhist Practices for EI in Public Administration

#### i. Developing Equanimity:

- Addressing the **eight worldly concerns:** gain and loss, fame and disrespect, pleasure and pain, praise and disparagement.
- Balancing these emotions prevents biased and self-serving behavior.

#### ii. Practical Applications:

- **Limiting Desires:** Contentment with minimal resources to ensure ethical decisions.
- **Introspection:** Regularly reflecting on one's actions to cultivate gratitude and humility.
- **Embracing Change:** Accepting unavoidable outcomes with a balanced perspective.

### 4. Relevance of Buddhist Teachings to Public Administration

#### i. Mindful Decision-Making:

- Encourages administrators to focus on long-term societal welfare over short-term gains.

#### ii. Conflict Resolution:

- Promotes understanding and compassion to mediate disputes effectively.

#### iii. Sustainable Leadership:

- Fosters resilience and adaptability in addressing modern governance challenges.

### Conclusion

Integrating emotional intelligence with Buddhist approaches provides a robust framework for ethical and effective public administration. By fostering mindfulness, compassion, and equanimity, administrators can better serve society while maintaining personal well-being. The Buddhist emphasis on self-regulation and ethical living ensures that public administrators remain balanced, empathetic, and capable of addressing the complexities of governance.

# WEAVING AND THE INDIAN TEXTILE INDUSTRY

## Introduction

Weaving, a fundamental process of interlacing threads, is both an art and a livelihood. It reflects a region's culture, traditions, and history, evolving from manual methods to modern technological advancements. In India, weaving represents not only heritage but also significant economic and social contributions, positioning the country as a global textile powerhouse.

## 1. Importance of the Indian Textile Industry

### i. Global Significance:

- India is the **second-largest textile producer and exporter** globally.
- Renowned for diverse and high-quality fabrics, such as **cotton, silk, jute, and wool**.

### ii. Economic Impact:

- Contributes **2% to India's GDP**.
- Accounts for **7% of industrial production** and **12% of total exports**.

### iii. Employment Generation:

- Directly employs **4.5 crore people** and indirectly supports **6 crore people**, especially women and rural populations.

### iv. Export Markets:

- Major destinations include the **USA (27%), EU (18%), Bangladesh (12%),** and the **UAE (6%)**.

## 2. Historical and Cultural Roots

### i. Ancient Traditions:

- **Indus Valley Civilization (3000 BC)** showcased advanced textile techniques like dyeing and spinning.
- **Vedic literature** emphasizes spinning, dyeing, and weaving as integral to life.

### ii. Symbolism:

- Weaving traditions are intertwined with religious practices, festivals, and cultural expressions.
- Examples: Banarasi sarees in weddings, Pochampally ikats for rituals.

### iii. Diverse Techniques:

- India boasts unique weaving styles like **Kanjeevaram, Chanderi, Baluchari, Pashmina,** and **Brocades**, reflecting regional identities.

## 3. Technological Advancements in Weaving

### i. Modernization of Equipment:

- Transition from traditional handlooms to **power looms** and **automated weaving machines**.

- Introduction of **digital weaving systems** for precise and customizable patterns.

### ii. Sustainability and Innovation:

- **Eco-friendly dyes** and energy-efficient looms are transforming production methods.
- Increased focus on **recycled fibers** and circular economy principles.

### iii. Efficiency Gains:

- Automation reduces production time, improves quality, and minimizes waste.

## 4. Environmental Sustainability

### 1. Use of Natural Fibers:

- Preference for **cotton, silk, wool, and linen**, which are biodegradable and sustainable.

### ii. Eco-Friendly Practices:

- Encouragement of organic cotton farming and **chemical-free dyeing** processes.
- Focus on **upcycling and recycling** to reduce textile waste.

### iii. Green Initiatives:

- Adoption of waterless dyeing technology and renewable energy sources in production units.

## 5. Challenges Faced by the Textile Industry

### i. Global Competition:

- Nations like **Bangladesh** and **Vietnam** receive preferential trade benefits in major markets.
- **Cheap imports** from China impact domestic industries.

### ii. Domestic Barriers:

- Limited **technological adoption**, leading to lower productivity.
- High dependence on **manual labor** in rural areas.

### iii. Policy and Infrastructure Gaps:

- Lack of supportive policies for small-scale weavers.
- Insufficient access to **global markets** compared to competitors.

### iv. Environmental Concerns:

- Synthetic fibers contribute to pollution; slow adoption of greener alternatives.

### v. Worker Welfare:

- Poor wages, unsafe working conditions, and limited training opportunities for skill enhancement.

## 6. Government Initiatives

### i. PM Mitra Mega Textile Park Scheme (2023):

- **₹4,445 crore budget** to establish 7 textile parks for integrating the value chain.

- Aims to create **21 lakh jobs** by boosting exports and domestic manufacturing.

#### ii. Production Linked Incentive (PLI) Scheme:

- Allocation of **₹10,683 crore** for incentivizing high-value textile products and boosting exports.

#### iii. Skill Development Programs:

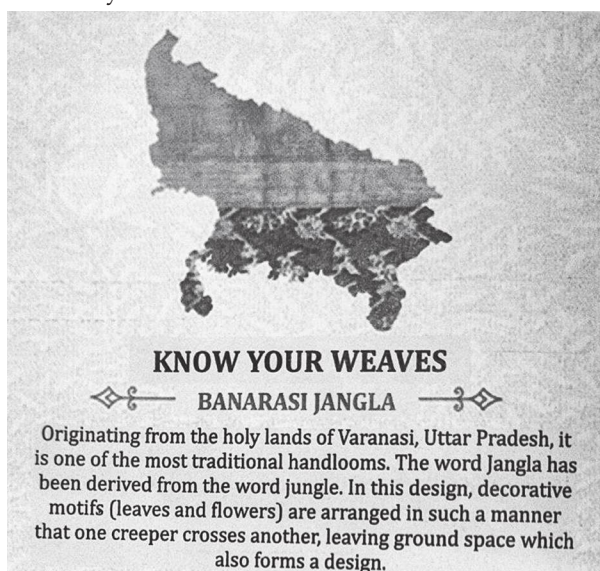
- Training initiatives under **Samarth (Scheme for Capacity Building)**.

#### iv. Infrastructure Support:

- Enhanced funding for the **Integrated Textile Parks (ITP)** and modernization of power looms.

#### v. Export Promotion Measures:

- Focus on achieving duty-free access for Indian textiles in key markets.



## 7. Weaving and Tourism

### 1. Cultural Preservation:

- Tourist demand for handwoven textiles sustains regional crafts like **Kashmiri Pashmina** and **Gujarati Bandhani**.

### 2. Economic Boost:

- Artisans engage in live demonstrations and weaving workshops, creating an immersive experience for visitors.

### 3. Global Recognition:

- Indian handlooms gain prominence through international exhibitions and fairs.

## 8. Way Forward

### i. Policy Enhancements:

- Strengthen **Handloom Reservation Act** to protect traditional weavers.
- Provide fiscal incentives to SMEs for technological adoption.

### ii. Skill Upgradation:

- Launch targeted training programs in advanced textile technologies.
- Focus on empowering women and rural workers.

### iii. Research and Development:

- Encourage innovation in eco-friendly weaving techniques and product designs.

### iv. Global Branding:

- Position Indian textiles as premium brands in global markets through aggressive marketing.

### v. Sustainability Commitment:

- Promote **organic farming** for raw materials and scale up recycling initiatives.

## Conclusion

The Indian weaving and textile industry reflects the nation's **rich cultural heritage** and plays a pivotal role in its economic framework. While facing stiff competition and technological gaps, concerted efforts in policy reforms, sustainability practices, and skill enhancement can ensure its resurgence. A robust, inclusive approach will empower millions of artisans and reinforce India's standing as a global textile leader.

## SATELLITE-BASED EARLY WARNING SYSTEMS FOR DROUGHT AND FLOOD MANAGEMENT

### 1. Introduction

Droughts and floods pose significant challenges to rural agriculture, impacting food security, livelihoods, and infrastructure. Satellite-based early warning systems are transformative tools for monitoring, forecasting, and mitigating these disasters, leveraging advanced technologies for real-time data analysis and risk management.

### 2. Drought Management through Satellite Technology

#### (i) Understanding Droughts

- **Definition:** A temporary reduction in water availability below normal levels, caused by sub-normal rainfall, erratic distribution, or high demand.
- **Categories:**
  - a. **Meteorological Drought:** Deficiency in precipitation.
  - b. **Hydrological Drought:** Reduced water levels in rivers and reservoirs.
  - c. **Agricultural Drought:** Insufficient soil moisture for crop growth.
  - d. **Socio-economic Drought:** Scarcity impacting livelihoods and economies.

#### (ii) Impacts of Droughts in India

- **Crop Yields:** Water scarcity reduces agricultural productivity.
- **Livelihoods:** Farmers face financial strain, leading to migration.
- **Livestock:** Drought weakens animals and affects rural economies.
- **Water Resources:** Over-reliance on groundwater depletes aquifers.

#### (iii) Satellite Applications in Drought Management

- **Monitoring and Assessment:**
  - **Rainfall Anomalies:** Satellite data highlights deviations in precipitation.
  - **Soil Moisture Mapping:** Tools like SMAP provide real-time data for water management.

- **Vegetation Indices:** NDVI and EVI assess crop stress and drought impacts.
- **Early Warning Systems:**
  - **Seasonal Forecasting:** Long-term climate trends predict drought risks.
  - **Dynamic Monitoring:** Regular updates support timely interventions.
  - **Community Alerts:** Disseminated via apps, SMS, and local media.
- **Mitigation Strategies:**
  - **Water Resource Management:** Satellite mapping guides efficient irrigation, rainwater harvesting, and groundwater replenishment.
  - **Crop Diversification:** Encouraging drought-resistant crops ensures resilience.
  - **Government Schemes:** Integration with initiatives like PMKSY supports water conservation and rural development.



### 3. Flood Management through Satellite Technology

#### (i) Understanding Floods

- **Causes:** Excessive rainfall, river overflow, or dam breaches.

**Impacts:****(ii) Satellite Applications in Flood Management**

- **Risk Assessment:**
  - **Rainfall Intensity:** Monitoring helps predict potential floods.
  - **River Monitoring:** Satellite altimetry tracks water levels.
  - **Floodplain Mapping:** Identifies high-risk areas for targeted measures.
- **Early Warning Systems:**
  - **Real-time Alerts:** Timely predictions minimize risk.
  - **Hydrological Models:** Combine satellite and ground data for accuracy.
  - **Community Preparedness:** Training ensures effective response.
- **Mitigation Strategies:**
  - **Structural Measures:** Data aids in designing embankments and reservoirs.
  - **Non-structural Measures:** Encouraging afforestation and sustainable land use reduces flood impacts.
  - **Relief and Recovery:** Satellite mapping accelerates rescue and rehabilitation efforts.

**(iii) Key Satellites and Programs**

- **Indian Satellites**
- **INSAT, RISAT, Cartosat:** Support weather monitoring, soil analysis, and disaster management.
- **Global Programs**
- **Sentinel (ESA), Landsat (NASA):** Complement Indian efforts with global perspectives.
- **Collaborative Efforts**
- **Partnerships with FAO and WMO** for data integration and improved disaster response.

**4. Challenges and Limitations**

- **Data Accessibility:** Limited affordability for local users.
- **Infrastructure Gaps:** Lack of ground stations in rural areas.
- **Awareness and Training:** Limited understanding of satellite data among stakeholders.
- **Policy Integration:** Misalignment with national disaster management plans.

**5. Future Directions**

- **Technological Advancements:** Use of AI, ML, and IoT for enhanced data analysis.
- **Collaborative Platforms:** Partnerships between government, private sector, and academia.
- **Community-centric Approaches:** Tailoring solutions to rural needs.
- **Policy Support:** Strengthening funding and regulatory frameworks.

**6. Conclusion**

Satellite-based systems offer transformative solutions to mitigate droughts and floods, protecting rural livelihoods and promoting sustainable agriculture. Despite challenges, leveraging advancements like AI and global collaboration will enhance disaster preparedness and resilience. By integrating these technologies with policy frameworks, India can secure sustainable growth for its rural population.

**GEOSPATIAL DATA FOR RURAL RESOURCE MANAGEMENT**
**Introduction**

Geospatial technology has revolutionized rural resource management and disaster preparedness in India. Platforms like **Bhuvan Panchayat** and the **National Database for Emergency Management (NDEM)**, developed by ISRO, empower local governance, improve planning, and enhance transparency. These initiatives align with Digital India's vision to promote sustainable development and effective governance, ensuring a brighter future for rural India.

**Key Initiatives and Contributions**

**1. Bhuvan Panchayat Geoportal:** A flagship initiative by ISRO to empower **Gram Panchayats** with high-resolution satellite data for decentralized planning.

- **Features:**
  - **Real-time Data Access:** Provides geospatial data and satellite imagery for planning and governance.
  - **Advanced Tools:** Offers visualization, analysis, and monitoring tools for land use, water resources, and infrastructure.
  - **Web-Based Platform:** Operates seamlessly across platforms, supporting transparency and accountability.
- **Version 4.0 Highlights:**
  - Developed at a **1:10,000 scale**, enabling precise planning and monitoring.
  - Facilitates **holistic development** in sectors like agriculture, water resources, and social services.
  - Empowers Gram Panchayats to prepare, implement, and monitor development schemes effectively.
- **Impact:**
  - **Improved Governance:** Data-driven decisions enhance transparency and efficiency.
  - **Sustainable Resource Management:** Enables optimal utilization of land, water, and other resources.

**2. National Database for Emergency Management (NDEM)**

A geospatial database developed by ISRO for **disaster preparedness and response**.

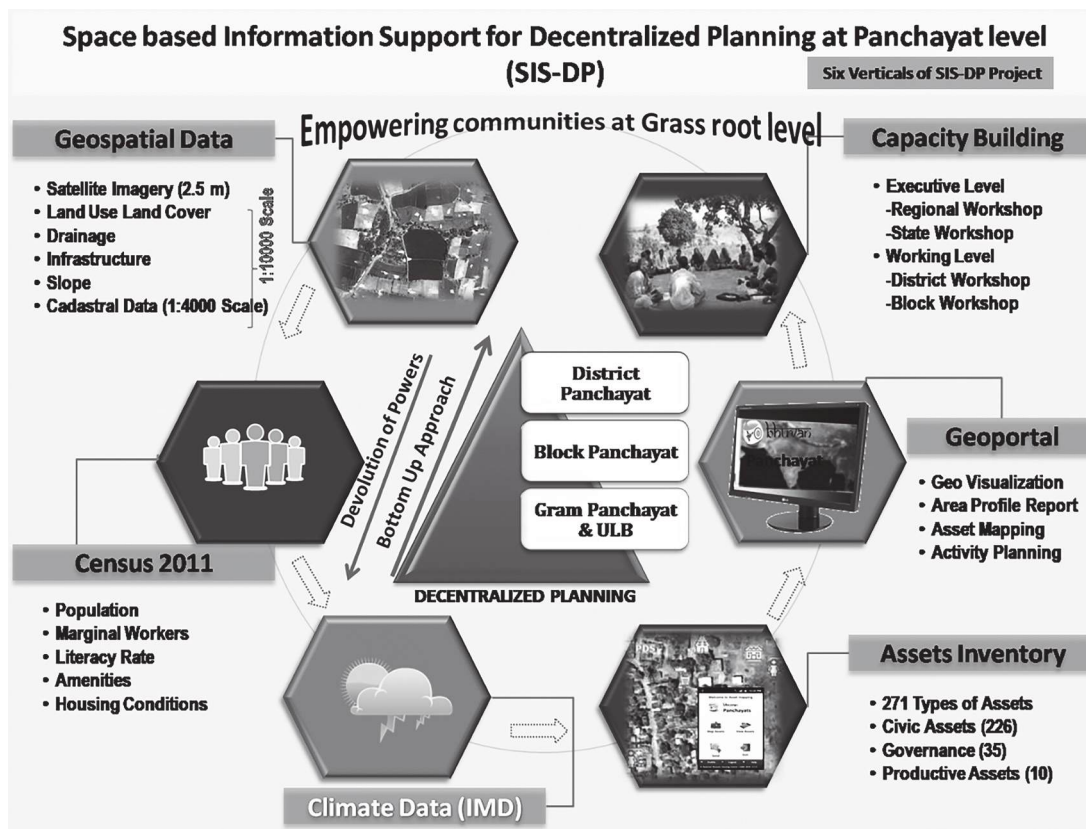


- **Key Features:**
  - **Real-time Data and Analytics:** Provides actionable insights during emergencies.

- **Multi-Phase Coverage:** Supports disaster preparedness, prevention, response, and rehabilitation.
- **Coordination Hub:** Facilitates collaboration among government and non-government agencies.
- **Version 5.0 Enhancements:**
  - Strengthens **disaster risk reduction** strategies.
  - Promotes **community resilience** by educating stakeholders about risks and preparedness measures.
- **Impact:**
  - Reduces loss of life and property during disasters.
  - Enhances India's capacity to respond effectively to natural and man-made emergencies.

### 3. Space-Based Information Support for Decentralized Planning (SIS-DP)

An innovative project aimed at strengthening Panchayati Raj Institutions through geospatial data.



- **Components:**
  - **High-Resolution Satellite Maps:** Enables detailed and accurate planning.
  - **Thematic and Base Layers:** Covers land use, transport networks, drainage, and settlements.
  - **Centralized Data Bank:** Integrates spatial and non-spatial data for better accessibility.
  - **Capacity Building:** Trains stakeholders to utilize geospatial tools effectively.
- **Phases of Implementation:**
  - **Phase 1:** Creation of high-resolution maps and thematic layers.
  - **Phase 2:** Expansion to incorporate updated geospatial data and integrate analysis tools.

#### 4. Digital India Land Records Modernization Programme (DILRMP)

ISRO supports the modernization of land records, ensuring transparency and efficiency.

- **Features:**
  - **Digitization of Land Records:** Over 95% of rural land records have been digitized.
  - **Geo-Referencing:** Aligns traditional maps with satellite-based coordinates for accuracy.
  - **Aadhaar Integration:** Links land records to ensure authenticity and reduce fraud.
- **Key Satellites Involved:**
  - **Cartosat Series:** Provides high-resolution imagery for mapping land boundaries.
  - **ResourceSat Series:** Monitors land use, agriculture, and water resources.
- **Impact:**
  - **Reduces Land Disputes:** Clear ownership records minimize litigation.
  - **Boosts Agricultural Credit:** Farmers gain easier access to loans and subsidies.
  - **Supports Development:** Facilitates fair compensation during land acquisitions.

#### Significance of Geospatial Data for Rural Resource Management

- i. **Enhanced Decision-Making:**
  - Empowers local authorities with precise data for planning and resource allocation.
- ii. **Sustainable Development:**
  - Promotes optimal utilization of natural resources, ensuring environmental balance.
- iii. **Disaster Resilience:**
  - Strengthens preparedness and response mechanisms, minimizing the impact of disasters.
- iv. **Improved Governance:**
  - Increases transparency, accountability, and citizen participation in development.
- v. **Economic Growth:**
  - Boosts agricultural productivity, reduces disputes, and fosters rural entrepreneurship.

#### 6. Conclusion

Geospatial data, powered by ISRO's innovative platforms, is transforming rural governance and resource management in India. Initiatives like Bhuvan Panchayat, NDEM, and DILRMP ensure efficient planning, transparency, and sustainable development. By leveraging space technology, India is setting an example of how science can drive rural empowerment and disaster resilience, aligning with the goals of Digital India and inclusive growth.



# ARTICLES FROM DOWN TO EARTH (JANUARY 2025)

## REUSING TREATED WASTEWATER KEY TO RESOLVING INDIA'S URBAN WATER CRISIS: CSE

### Introduction

According to the report **Waste to Worth: Managing India's Urban Water Crisis through Wastewater Reuse**, released jointly by the Centre for Science and Environment (CSE) and the National Mission for Clean Ganga (NMCG), 72% of India's urban wastewater remains untreated, presenting both a challenge and an opportunity for addressing the nation's growing water crisis.

### Current Scenario

- India currently treats only 28 per cent of the 72,000 million litres of wastewater generated daily.
- The remaining untreated water pollutes rivers, lakes and soil.
- Ministry of Jal Shakti mandates that cities recycle at least 20 percent of the water they consume, but achieving this target will require significant scaling up of treatment infrastructure.



### Potential of Wastewater Reuse

- **Resource for Multiple Sectors:** Treated wastewater can be used for irrigation, industrial processes, and urban greening.
- **Water Circularity:** Reusing wastewater promotes sustainability and reduces freshwater demand.

- **Climate Resilience:** Integrating wastewater reuse into water management frameworks can enhance climate resilience.

### Challenges

- **Regional Disparities:** Uttar Pradesh, Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Delhi, and Haryana account for the highest volumes of untreated wastewater.
- **Infrastructure Gaps:** Lack of adequate sewage treatment and distribution systems.

### Regional Success Stories

- **Maharashtra:** Mandates industries to use treated wastewater.
- **Gujarat:** Aims for 100% reuse in agriculture and industry.
- **Tamil Nadu:** Focuses on industrial and urban greening applications.
- **Examples from Cities**
  - **Nagpur:** Supplies treated wastewater to power plants, reducing freshwater consumption.
  - **Bengaluru:** Uses treated water for agriculture, lake rejuvenation, and groundwater recharge.
  - **Chennai:** Incorporates treated wastewater into industrial processes, urban landscaping, and groundwater replenishment.

### Barriers to Scaling Up Wastewater Reuse

- **Public Resistance:** Cultural beliefs and safety concerns hinder acceptance.
- **Infrastructure Deficits:** Inadequate sewage treatment and distribution systems.
- **Quality Assurance:** Challenges in meeting reuse standards.
- **High Operational Costs:** Expensive treatment facilities and maintenance.
- **Policy Misalignment:** Lack of integration with urban planning and industrial needs.

### Way Forward: Recommendations and Call to Action

- **Policy and Infrastructure**
  - **Decentralised Solutions:** Promote cost-effective, decentralised treatment technologies.
  - **Public-Private Partnerships:** Foster collaborations to address infrastructure gaps.
  - **Capacity Building:** Invest in training and awareness programs to overcome public resistance.

- **Integration with National Programs**
  - **Jal Jeevan Mission:** Incorporate wastewater reuse to ensure a sustainable water supply.
  - **Atal Bhujal Yojana:** Use treated wastewater for groundwater recharge.
  - **AMRUT:** Align urban development with wastewater reuse initiatives.
- **Economic and Social Equity**
  - **Circular Economy:** Treat wastewater as a valuable resource, not a waste product.
  - **Equity for Underserved Communities:** Ensure equitable access to treated wastewater.

### Conclusion

India's urban wastewater crisis demands innovative solutions and a paradigm shift in water management. By treating wastewater as a resource and integrating reuse into national programs, India can achieve water security, promote sustainability, and build climate resilience.

## EXPLAINED: WHAT IS BLUE CARBON?

### Introduction

Blue Carbon refers to organic carbon captured and stored by the ocean in vegetated coastal ecosystems such as mangrove forests, saltmarshes or seagrass meadows. The world's mangroves, seagrasses and salt marshes together comprise 'blue carbon ecosystems.' They are nature's most effective carbon sinks.

### Carbon Sequestration Potential of Blue Carbon Ecosystems

- **High Sequestration Rates:** Mangroves and coastal wetlands sequester carbon at 10 times the rate of mature tropical forests.
- **Storage Capacity:** These ecosystems store 3-5 times more carbon per equivalent area than tropical forests.
- **Mangroves:** Can store over 1,000 tons of carbon per hectare.
- **Restoration Impact:** Restoring 10% of degraded mangroves globally could sequester an additional 1.6 billion tons of carbon.

### Ecological Benefits

- **Soil Stability:** Mangrove roots prevent soil erosion and stabilize the soil.
- **Marine Habitat:** Provide homes for marine life, enhancing biodiversity.

### Policy and Economic Bottlenecks

- **Degradation and Loss**
  - **Myanmar:** Lost over 700,000 hectares of mangroves, with significant degradation due to agricultural expansion and aquaculture.

- **Bangladesh:** Sundarbans Mangrove Forest faces extreme degradation due to illegal logging and corruption.

### Carbon Credit Challenges

- **Verification Costs:** High costs and intricate procedures for verifying carbon credits.
- **Transparency Issues:** Lack of transparency and accountability in carbon credit programs, such as the REDD+ project in Cambodia, damages market confidence.

### Seeds of Innovation

#### • Technological Integration

- **AI Mapping:** Used to monitor seagrass meadows.
- **Blockchain:** Ensures transparency in carbon credit transactions.

#### • Successful Initiatives

- **Australia's Blue Carbon Method:** Simplifies coastal wetland restoration in carbon markets, with significant progress and 16.45 million ACCUs issued by December 2024.
- **Mangrove Ecosystem Restoration Alliance (MERA):** Restored 262 hectares of mangroves in Indonesia, with plans for 398,779.78 hectares.

### The Economic Imperative: Market Potential

- **Blue Carbon Credits:** International market potential could reach \$50 billion by 2030.
- **Co-Benefits:** Job creation, sustainable tourism, and fisheries safety.
- Every \$1 invested in blue carbon restoration produces \$6 in economic aid, underscoring the value of increased investments in this sector.

#### Case Study

- In India, reinstated mangroves attract eco-tourism and government funds, potentially increasing coastal GDP by up to 15%.
- **Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI):** Launched in 2023 it aims to restore 540 sq km of mangroves in India, with over 250 sq km already restored by December 2024.

### Conclusion

Blue carbon ecosystems are vital for carbon sequestration and have extensive ecological and economic benefits. Addressing policy and economic challenges, enhancing transparency, and leveraging technological innovations are crucial for maximizing their potential. Increased investments and community-driven initiatives can significantly contribute to the restoration and preservation of these invaluable ecosystems.

# ARTICLES FROM EPW (JANUARY 2025)

## THE CONTOURS OF CASTE IN THE CRIMINAL LEGAL SYSTEM

### Introduction:

A three-judge bench of the Supreme Court, headed by Chief Justice D Y Chandrachud, recently struck down several provisions of prison manuals in *Sukanya Shantha vs. Union of India and Others (2024)* on the grounds that they perpetrated caste-based discrimination violative of Articles 14, 15, 17, and 21 of the Constitution.

### Context:

Three kinds of practices were brought before the Court as discriminatory:

1. The **division of manual labour** in prisons.
2. The **segregation of barracks** where prisoners reside.
3. Provisions against **"habitual offenders"** and prisoners belonging to denotified tribes.

### Supreme Court Directives and Observations

- Declared the **codification of caste-based practices in prison manuals** across states as **unconstitutional**.

## Removing bias

The Bench says "everyone is born equal" and cannot suffer lifelong due to stigma attached to their caste.

### The directions include:

- States and UTs should revise their Prison Manuals/Rules in three months
- Centre should address caste-based discrimination in the Model Prison Manual 2016 and the Model Prisons and Correctional Services Act 2023 in three months
- "Caste columns" and references to caste in prisoners' registers should be removed



### Way forward

- Implementing recommendations given by the **Mulla committee**:
  - Creation of the **All India Service called the Indian Prisons and Correctional Service** for fostering a more fair and inclusive strategy inside the prisons.
- Establishment of **National Commission for Prisons**: Specialised advisory for all prison-related matters.
- Adoption of **model prison manual, 2016: To bring uniformity in laws, rules, and regulations** for governing the administration of prisons.

- SC directed all states and union territories to **erase the caste-based prison manuals in a time-bound manner**.
- SC mandated the **District Legal Service Authorities and the Board of Visitors to conduct joint inspections and file a status report** through the National Legal Services Authority.
- SC **highlighted discrimination against denotified tribes** under the classification of labelling them habitual offenders.
- SC **struck down all references to habitual offenders in prison manuals** as unconstitutional.
- SC also directed the states with such legislation to **update the definition of "habitual offender" in their prison manuals/rules as per their legislation**.
- It also called for **regular audits of these internal police documents** by senior police officers to prevent mechanical entries in history sheets to avoid the prejudicial treatment of denotified tribes.
- In order to avoid arbitrary arrests of denotified tribe members, the court directed agencies to strictly follow the rules (from the *Arnesh Kumar v. State of Bihar* and *Amanatullah Khan v. Commissioner of Police, Delhi* cases).

- **Sensitization of police agencies** and administrative bodies: **To prevent discrimination and harassment of prisoners on the basis of caste.**

The apex court's directions in the present matter denote a long-overdue step in **recognising the contours of caste and criminality in the criminal legal system.**

### PRELIMS SPECIAL

- **Constitutional provisions**
- **Article 14:** The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.
- **Article 15:** The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth, or any of them.
- **Article 17:** "Untouchability" is abolished, and its practice in any form is forbidden. The enforcement of any disability arising out of "untouchability" shall be an offence punishable in accordance with law.
- **Article 21:** No person shall be deprived of his life or personal liberty except according to procedure established by law.

## THE RISKS OF COAL PHASE DOWN

### Introduction

- **Consensus on mitigation:** During Conference of Parties (COP) 28 in Dubai, United Arab Emirates, members repeated its stance on getting aboard on aggressive mitigation and adaptation efforts to tackle climate change emphasizing the need for a sustainable strategy to mitigate the emissions of greenhouse gases (GHGs).
- **Targeting Coal:** Coal is the major source of GHGs and phasing it out is considered inevitable to limit the average global temperature below 2 degree Celsius and further achieve carbon neutrality.
- **India's priorities:** India, being a developing nation, requires energy security and coal is the cornerstone of meeting India's energy requirements.
- **Paradox in Objectives:**
  - The dual objectives of phasing out coal due to climate change and providing universal and affordable energy access render India to suffer from an energy policy paradox.
  - India has to undergo decarbonisation and scale up renewables and clean energy technologies in its energy mix given the fact that climate change poses severe fallouts.
  - It becomes extremely crucial to analyse and understand the challenges associated with the scaling up of renewables and the risks associated with the coal phase down.

### Degree of Dependence on Coal in India

- **Coal share in India's Energy mix:** Coal accounted for meeting 44% of the primary energy demand of India (IEA 2021). Between 2015 and 2019, 58 gigawatts (GW) capacity of coal-based thermal power plants have been added to India's energy basket as compared to 49 GW of solar or wind power capacity (IEA 2021).
- **Primary fuel source:** Coal is the primary source of fuel for many industries in India and it is also responsible for generating huge employment and creating massive livelihood opportunities.
- **India's Large Reserves:** India holds the world's fifth-largest coal reserves, amounting to 361 billion tonnes, and stands second in terms of coal production and consumption in the world.
- **Further increase in Coal demand:** The midterm projection of the Ministry of Coal shows that the overall demand for coal is projected to increase to 1,448 MT by FY 2030. The increase in domestic coal production is also undertaken as an import substitution mechanism as 208 MT of coal was imported in FY 2022.
- **Contribution to Exchequer:** The contributions of coal in the form of taxes and royalties hold a large share in the state's exchequer. In 2020–21, Coal India Limited (CIL) paid a total of ₹419 billion to the Government of India.

### The Risks of Coal Phase Down

- **High dependence for Electricity Generation:**
  - The predominant share of coal in the electricity generation mix implies that any irregularity in the supply of coal would inflict severe consequences on India's socio-economic and security landscape.
  - The significance of coal in supply securitisation of energy sources to generate electricity and ensuring reliable as well as affordable energy supply to consumers cannot be negated.
- **Use of byproducts in Core Industries:** Coking coal, a large chunk of which is imported, forms an integral part of India's manufacturing process to meet the industrial demands of iron and steel, cement, and sponge iron industries.
- **Increasing Urbanisation and Population:** The increasing population demands rapid industrialisation and urbanisation which implies an increase in energy demand as it is considered to be the engine of economic growth.
- **Requirement of Electricity at cheaper rate:** The developing nature of the Indian economy implies the requirement of electricity at cheaper rates. Most of the Indian the population would only be able to pay for electricity at minimum affordable rates.
- **Employs Millions of people:** The social sector dependency further impedes the coal phase down in India as only the coal sector directly employs around 1.2 million workers in India.

- **Abrupt phasing can lead to Loss of assets:** The risks of abrupt phasing down of coal include the creation of stranded assets as most of the coal-based thermal power plants were built in the last 10–15 years. The investments pooled in the construction of these power plants can get sunk resulting in a rise in non-performing assets and twin balance sheet problems.
- **Taxing coal:** The introduction of a carbon tax-like mechanism can lead to carbon leakage where the carbon-intensive industries may shift their base to other countries having flexible emission norms.

#### Way Forward

- **Make a Mid Term to Long Term strategy:** There is a need to expand the usage of coal in the midterm to accommodate immediate concerns but, in the long term, decarbonisation is inevitable.
- **Avoid abrupt phasing:** Any abrupt or poorly designed strategy to phase out coal in the midterm would create irreparable ripples in India's socio-economic and security landscape.
- **Increase efficiency in the Coal industry:** Steps such as


increasing first-mile connectivity of coal mines, clean coal technologies (carbon capture and storage) are adopted to increase the sustainability of coal business.

- **Alternate Coal energy:** Coal gasification is a cleaner way of producing electricity from coal and syngas produced can be used in making fertilisers such as urea. Two pilot projects for realising coal gasification have been undertaken in Talcher fertiliser plant and Dankuni Methanol Plant.
- **Reutilisation of Coal wastages:** The expansion of the coal sector is aligned to help climate change mitigation where the bio-reclamation of coal-mined areas is promoted, and the supply of mine water for irrigation purposes and the promotion of mine tourism is encouraged.

#### EXPECTED QUESTION FOR UPSC CSE


##### Descriptive Question


- Q. What are the associated risks of De-Carbonisation of energy in India. How can a balanced approach help in transition towards a Renewable- Coal energy mix. [10 marks, 150 words]

Free Initiative by Chahal Academy


What to Read in The Hindu

Scan QR Code





THE  
HINDU

## QUICK REVISION

## AWARDS AND PRIZES IN JANUARY 2025

	Award	Winner	Details
1.	Major Dhyan Chand Khel Ratna Award	Praveen Kumar; D Gukesh; Manu Bhaker; Harmanpreet Singh	<ul style="list-style-type: none"> <li>It is given for the spectacular and most outstanding performance in the field of sports by a sportsperson over the period of the previous four years.</li> <li>The Khel Ratna winners receive a cash prize of Rs 25 lakh along with a citation and a medallion.</li> </ul>
2.	Arjuna Award	32 awardees	<ul style="list-style-type: none"> <li>For outstanding performance in Sports and Games' is given for good performance over a period of the previous four years and for showing qualities of leadership, sportsmanship and a sense of discipline.</li> <li>The Arjuna awardees are given Rs 15 lakh as cash reward, a statuette of Arjuna and a citation.</li> </ul>
3.	Golden Globes 2025	-	<ul style="list-style-type: none"> <li>Best Film (Drama) - The Brutalist</li> <li>Best Film (Musical or Comedy) - Emilia Pérez</li> <li>Best Film (Animated) - Flow</li> <li>Best Television Series (Drama) - Shogun</li> <li>Best Television Series (Musical or Comedy) - Hacks</li> <li>Best Male Actor in a Film (Drama) - Adrien Brody, The Brutalist</li> <li>Best Female Actor In a Film (Drama) - Fernanda Torres, I'm Still Here</li> </ul>
4.	Pravasi Bharatiya Samman Award	-	<ul style="list-style-type: none"> <li>The award is to commemorate the contribution of the Indian diaspora to create a better understanding of India abroad, support India's causes and work for the welfare of the local Indian community.</li> <li>Awarded on Pravasi Bharatiya Divas 2025.</li> </ul>
5.	Padma Awards	Padma Vibhushan - 7 awardees Padma Bhushan - 19 awardees Padma Shri - 113 awardees	<ul style="list-style-type: none"> <li>The Padma Awards were announced on January 25, a day ahead of Republic Day, honouring eminent personalities in arts, social work, public affairs, science, business and more.</li> <li>After the Bharat Ratna, the Padma Vibhushan, the Padma Bhushan and the Padma Shri are the highest civilian awards (in that order).</li> <li>The Padma Vibhushan is awarded for "exceptional and distinguished service", while the Padma Bhushan is conferred to individuals for "distinguished service of high order". The Padma Shri is awarded for "distinguished service in any field".</li> </ul>
6.	Sir Garfield Sobers Award	Jasprit Bumrah	<ul style="list-style-type: none"> <li>Awarded for ICC Men's Cricketer of the Year.</li> <li>Bumrah became the fifth winner of the award from India after Rahul Dravid (2004), Sachin Tendulkar (2010), Ravichandran Ashwin (2016) and Virat Kohli (2017, 2018).</li> </ul>

7.	Gangadhar National Award	Prativa Satpathy	<ul style="list-style-type: none"> <li>Established in 1989, the award is named after eminent Odia poet Gangadhar Meher and recognises excellence in poetry.</li> </ul>
8.	Padmapani Lifetime Achievement Award	Sai Paranjpye	<ul style="list-style-type: none"> <li>The Padmapani Lifetime Achievement Award is given at the Ajanta-Ellora International Film Festival (AIFF) to recognize a person's contributions to Indian cinema and other fields.</li> </ul>
9.	Blue Flag Certification	Kappad beach in Kozhikode and Chal beach in Kannur	<ul style="list-style-type: none"> <li>Kerala's Kappad beach in Kozhikode and Chal beach in Kannur have received the prestigious Blue Flag certification from Denmark's Foundation for Environmental Education (FEE).</li> <li>This recognition highlights their high standards in environmental protection, safety, and sustainability.</li> </ul>
10.	Subhash Chandra Bose Aapda Prabandhan Puraskar-2025	Indian National Centre for Ocean Information Services (INCOIS)	<ul style="list-style-type: none"> <li>Established by the Government of India, the Subhash Chandra Bose Aapda Prabandhan Puraskar honors individuals and organizations for their outstanding work in disaster management.</li> <li>The award is announced annually on January 23, the birth anniversary of Netaji Subhash Chandra Bose, and includes a cash prize and certificate.</li> </ul>

## OBITUARIES IN JANUARY 2025

	DATE	PERSON	IMPORTANT INFORMATION
1.	1 January 2025	K S Manilal	<ul style="list-style-type: none"> <li>Renowned taxonomist K S Manilal, who was conferred with Padma Shri, died in Kerala's Thrissur after a prolonged illness. He was 86.</li> <li>Manilal is best known for research, annotation and translation of the botanical treatise in Latin, Hortus Malabaricus, which is the oldest comprehensive printed book on the natural plant wealth of Asia and the medicinal properties of the flora in the Western coast of India, particularly Kerala, Karnataka and Goa.</li> <li>He was the founder of the Indian Association for Angiosperm Taxonomy and was also honoured by the Netherlands with the 'Officer in the Order of Orange-Nassu Award', one of the highest civilian awards given by the country.</li> </ul>
2.	4 January 2025	Dr. R Chidambaram	<ul style="list-style-type: none"> <li>A former chairman of the Atomic Energy Commission and a former Principal Scientific Advisor, Chidambaram passed away at the age of 88.</li> <li>The idea to explode a thermonuclear device (the hydrogen bomb) during the 1998 tests is largely attributed to him.</li> </ul>
3.	17 January 2025	Jules Feiffer	<ul style="list-style-type: none"> <li>Jules Feiffer, a Pulitzer Prize-winning cartoonist and writer whose prolific output ranged from a long-running comic strip to plays, screenplays and children's books, died at the age of 95.</li> <li>Feiffer won the United States' most prominent awards in journalism and filmmaking, taking home a 1986 Pulitzer Prize for his cartoons and "Munro," an animated short film he wrote, won a 1961 Academy Award.</li> </ul>
4.	8 January 2025	Pritish Nandy	<ul style="list-style-type: none"> <li>Veteran journalist, filmmaker, poet, and former Rajya Sabha member Pritish Nandy passed away on January 8, 2025, at the age of 73 due to cardiac arrest.</li> <li>A prominent figure in Indian media, he made lasting contributions through his poetry, impactful journalism, and films like Kaante and Sur.</li> </ul>
5.	9 January 2025	P. Jayachandran	<ul style="list-style-type: none"> <li>P. Jayachandran, beloved as "Bhava Gayakan," was a renowned playback singer whose voice conveyed deep emotions such as love, devotion, and longing. He passed away at 80 after a prolonged illness, leaving an irreplaceable gap in the Indian music industry. Over a career spanning six decades.</li> </ul>

6.	15 January 2025	David Lynch	<ul style="list-style-type: none"> <li>David Lynch, the legendary Hollywood director and writer, passed away at 78.</li> <li>Renowned for his surreal style and exploration of the human psyche, Lynch transformed modern cinema with iconic works like Twin Peaks and Mulholland Drive.</li> </ul>
7.	25 January 2025	Latika Katt	<ul style="list-style-type: none"> <li>Latika Katt, one of India's most prolific and celebrated sculptors, passed away at the age of 76.</li> <li>Known for her larger-than-life sculptures and busts of public figures, Katt's work captured the essence of nature in its most organic forms.</li> </ul>

## IMPORTANT DAYS IN JANUARY 2025

	Date	Day	Significance / Remark / Detail
1.	4 January 2025	World Braille Day	<ul style="list-style-type: none"> <li>World Braille Day, celebrated since 2019, is observed to raise awareness of the importance of Braille as a means of communication in the full realization of the human rights for blind and partially sighted people.</li> </ul>
2.	9 January 2025	Pravasi Bhartiya Divas	<ul style="list-style-type: none"> <li>In recognition and appreciation of the constructive economic, political and philanthropic role played by the Indian Diaspora (On this day, Mahatma Gandhi returned to India after 20 years of struggle against the British in South Africa).</li> </ul>
3.	12 January 2025	National Youth Day	<ul style="list-style-type: none"> <li>To focus on hopes and aspirations of the youth of the country (coinciding with birth anniversary of Swami Vivekanand)</li> </ul>
4.	15 January 2025	Indian Army Day	<ul style="list-style-type: none"> <li>Every year, January 15 is commemorated as Army Day to mark the occasion when General (later Field Marshal) K M Cariappa took over the command of the Indian Army from General Sir F R R Bucher, the last British Commander-in-Chief, in 1949 and became the first Indian Commander-in-Chief of Independent India.</li> <li><b>Theme:</b> Samarth Bharat, Saksham Sena</li> </ul>
5.	23 January 2025	Parakram Diwas	<ul style="list-style-type: none"> <li>Subhas Chandra Bose Jayanti, also known as Parakram Diwas or the Day of Valour, is observed annually in India to honour one of India's esteemed freedom fighters, Netaji Subhas Chandra Bose.</li> </ul>
5.	24 January 2025	International Day of Education	<ul style="list-style-type: none"> <li><b>Theme:</b> AI and education: Preserving human agency in a world of automation</li> </ul>
7.	25 January 2025	National Tourism Day	<ul style="list-style-type: none"> <li>To celebrate the true essence of vibrant India National Tourism Day is observed on 25th January each year. This day aligns with the timeless philosophy of "Atithi Devo Bhava" and emphasizes the transformative power of travel.</li> </ul>
	26 January 2025	Republic Day	<ul style="list-style-type: none"> <li>India became a Republic when the Constitution of the Country came into force on 26th January 1950.</li> <li>Henceforth, 26th January has been recognized and celebrated as India's Republic Day with great ardour, and is decreed a national holiday.</li> </ul>
8.	26 January 2025	International Day of Clean Energy	<ul style="list-style-type: none"> <li>The International Day of Clean Energy on 26 January was declared by the General Assembly as a call to raise awareness and mobilize action for a just and inclusive transition to clean energy for the benefit of people and the planet.</li> <li>26 January is also the founding date of the International Renewable Energy Agency (IRENA), a global intergovernmental agency established in 2009.</li> </ul>


9.	26 January 2025	International Customs Day	<ul style="list-style-type: none"> <li>On 26 January each year, World Customs Organisation (WCO) Member Customs administrations celebrate International Customs Day.</li> </ul>
10.	27 January 2025	International Day of Commemoration in Memory of the Victims of the Holocaust	<ul style="list-style-type: none"> <li>United Nations General Assembly Resolution 60/7 that established the Holocaust and the United Nations Outreach Programme, also designated 27 January as an annual International Day of Commemoration in memory of the victims of the Holocaust – observed with ceremonies and activities at United Nations Headquarters in New York and at United Nations offices around the world.</li> <li><b>Theme:</b> Holocaust Remembrance for Dignity and Human Rights</li> </ul>
11.	30 January 2025	Anti Leprosy Day	<ul style="list-style-type: none"> <li>World Leprosy Day is observed every year on the last Sunday of January. In India, it is observed on 30 January every year, coinciding with the death anniversary of Mahatma Gandhi.</li> </ul>
12.	30 January 2025	Martyrs' Day	<ul style="list-style-type: none"> <li>Martyrs' Day, Shaheed Diwas or Sarvodaya Day is marked on January 30 to honour those who gave their lives for the country, notably on this day in 1948, when the assassination of Mahatma Gandhi occurred.</li> </ul>
13.	30 January 2025	National Cleanliness Day	<ul style="list-style-type: none"> <li>National Cleanliness Day is an important occasion dedicated to promoting cleanliness and hygiene across the country. It serves as a reminder of the collective responsibility we bear toward maintaining a clean and healthy environment.</li> </ul>

### IMPORTANT SUMMIT/CONFERENCE IN JANUARY 2025

	Summit/Conference	Details
1.	Indusfood 2025	<ul style="list-style-type: none"> <li>Indusfood 2025, Asia's leading food and beverage trade exhibition was held from January 8-10, 2025, in Greater Noida, India.</li> <li>Organized by the Trade Promotion Council of India (TPCI) and the Department of Commerce, the event featured over 2,300 exhibitors from 30+ countries.</li> </ul>
2.	Viksit Bharat Young Leaders Dialogue 2025	<ul style="list-style-type: none"> <li>The Viksit Bharat Young Leaders Dialogue 2025, was organized by the Department of Youth Affairs on January 10, 2025, at Bharat Mandapam, New Delhi.</li> <li>This event is a reimagined version of the National Youth Festival.</li> <li>It aims to celebrate youth leadership and engage young leaders from across India in thematic discussions, creative competitions, and cultural experiences.</li> </ul>
3.	United Nations Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD)	<ul style="list-style-type: none"> <li>India has become a member of the United Nations Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD), enhancing its role in global statistical frameworks.</li> <li>The committee explores how Big Data can improve official statistics and SDG monitoring.</li> <li>The membership reflects India's focus on using Big Data and technology for evidence-based policymaking.</li> </ul>
4.	Conference of Speakers and Presiding Officers of Commonwealth Parliaments (CSPOC)	<ul style="list-style-type: none"> <li>India will host the 28th Conference of Speakers and Presiding Officers of Commonwealth Parliaments (CSPOC) in January 2026.</li> </ul>
5.	India Digital Summit	<ul style="list-style-type: none"> <li>The India Digital Summit (IDS) is the flagship annual conference of the Internet and Mobile Association of India (IAMAI).</li> <li>Over the past 18 years, IDS has evolved to be India's largest and most important platform that brings together the movers and shakers of India's digital ecosystem across all sectors.</li> <li>The 19th edition of the Summit was organised on January 16-17, 2025.</li> </ul>


## TERMS IN JANUARY 2025


	Term	Meaning and Details
1.	Generation Beta	<ul style="list-style-type: none"> <li>It refers to the group of children born between the years 2025 and 2039. It is said that children in this generation will be faster than those in Generation Z (Gen Z) and Generation Alpha.</li> </ul>
2.	Artesian Aquifer	<ul style="list-style-type: none"> <li>According to the United States Geological Survey's website, an artesian aquifer refers to water stored under pressure, between layers of sediments and soil below the earth's surface.</li> <li>It is also described as "confined" water because of hardy materials above and below it.</li> </ul>
3.	Soapstone	<ul style="list-style-type: none"> <li>Soapstone is a metamorphic rock made of talc, a naturally occurring mineral, and is used in construction and design for countertops, sinks, hearths, and sculptures.</li> <li>Talc is used in cosmetics, pharmaceuticals, and other industries.</li> <li>According to the Indian Bureau of Mines, the states of Rajasthan (57%) and Uttarakhand (25%) boast substantial reserves of soapstone in India.</li> </ul>
4.	Planet parade	<ul style="list-style-type: none"> <li>A 'planet parade' refers to a situation when several planets in our solar system are visible in the night sky, at the same time.</li> <li>It is not a technical term in astronomy.</li> </ul>

**Free Initiative by Chahal Academy**


Editorial Analysis of Indian Express

Scan QR Code





# JANUARY 2025 - DAILY MCQs FROM THE HINDU & INDIAN EXPRESS

## DAILY MCQs PRACTICE

Q1. Consider the following statements regarding United Nations General Assembly (UNGA):

1. UNGA is the principal organ of the United Nations where all member states have equal representation.
2. The President of the UNGA is elected annually and serves a one-year term.
3. Resolutions passed by the UNGA are legally binding on all member states.

How many of the above statements are correct?

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

Q2. Consider the following statements regarding Northern Giant Hornets:

1. Their stings can deliver almost seven times the amount of venom as a honey bee.
2. They are native to North America and are invasive species in India.

Which of the statements above is/are correct?

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

Q3. The Vice President of India is elected by members of...

- (a) Lok Sabha only  
(b) Rajya Sabha only  
(c) Both Lok Sabha and Rajya Sabha  
(d) Only by the Legislative Assemblies

Q4. Consider the following with reference to the country/ countries not a member of Organization of the Petroleum Exporting Countries (OPEC):

1. Norway                      2. Saudi Arabia
3. Venezuela                      4. Iraq

How many of the above is/are correct?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q5. Consider the following statements regarding Simlipal Tiger Reserve:

1. It is located in on Chhota Nagpur plateau in Jharkhand.
2. Waterfalls Joranda and Barehipani are found in the reserve.
3. Budhabalanga and Salandi rivers flows through the reserve.

How many of the above statements are correct?

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

Q6. Consider the following statements regarding the Minimum Support Price (MSP):

1. Minimum Support Price (MSP) is determined by the Commission for Agricultural Costs and Prices (CACP) for select crops based on the recommendations of the Cabinet Committee on Economic Affairs (CCEA).
2. MSP is legally binding on private traders and middlemen to ensure that farmers receive the minimum price for their crops.

Which of the statements above is/are INCORRECT?

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

Q7. Fly ash contains high levels of which of the following elements?

- (a) The Nitrogen and oxygen  
(b) Sulfur and phosphorus  
(c) Silicon, aluminum, and iron  
(d) Carbon and hydrogen

Q8. Which of the following country was the host for COP 29?

- (a) United States                      (b) Azerbaijan  
(c) Brazil                      (d) France

Q9. Consider the following statements regarding Fiscal Deficit:

1. Fiscal deficit occurs when a government's total revenue exceeds its total expenditure in a financial year.
2. It may indicate excessive government borrowing, which could lead to higher public debt.

Which of the statements above is/are correct?

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

Q10. Which of the following best describes the concept of Most-Favoured Nation (MFN) status in international trade?

- (a) A country grants trade benefits to all its neighbouring countries equally.
- (b) A country grants special trade privileges to a single trading partner.
- (c) A country agrees to treat all World Trade Organization (WTO) members equally in trade matters.
- (d) A country establishes a trade embargo against a specific nation.

Q11. Which organization publishes the India State of Forest Report?

- (a) National Biodiversity Authority
- (b) Wildlife Institute of India
- (c) Ministry of Environment, Forest and Climate Change
- (d) Forest Survey of India

Q12. Consider the following with reference to the activities funded by the Compensatory Afforestation Fund:

1. Wildlife protection and conservation
2. Construction of roads through forest areas
3. Monitoring and evaluation of afforestation projects

How many of the above is/are correct?

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

Q13. Consider the following statements regarding Regenerative Farming:

1. Regenerative farming is an agricultural approach aimed at improving the health of soil and the ecosystem.

2. It focuses on practices such as crop rotation, cover cropping, and reducing soil disturbance to enhance biodiversity and soil fertility.

Which of the statements above is/are correct?

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

Q14. Consider the following statements regarding National Human Rights Commission (NHRC):

1. It is a constitutional body established under Part III of the Indian Constitution.
2. The Chairperson of NHRC must be a retired Chief Justice of India.
3. The NHRC has the power to punish violators of human rights and enforce its decisions.

How many of the above statements are correct?

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

Q15. Which nuclear test was conducted during Atal Bihari Vajpayee's tenure as Prime Minister?

- (a) Operation Dosti      (b) Pokhran I  
(c) Pokhran II              (d) Operation Smiling Buddha

Q16. Consider the following with reference to the powers of the Chief Justice of India:

1. Appoint other judges of the Supreme Court
2. Appoint judges of the High Court
3. Remove judges of the Supreme Court

How many of the above is/are correct?

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

Q17. The drug Tirzepatide is used for ...

1. Diabetes Type 2              2. Weight Loss
3. Obstructive sleep apnea

Select the correct option:

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

Q18. Which of the following factors weaken Indian Rupee against the US Dollar in international market?

1. Higher crude oil prices in international markets.

2. Increase in foreign portfolio investment inflows into Indian markets.
3. Widening of India's trade deficit.
4. Increase in the interest rates by the US Federal Reserve.

Select the correct option

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

Q19. What types of infrastructure does India-Middle East-Europe Corridor (IMEC) aims to connect?

- (a) Digital networks only
- (b) Roads, ports, and railways
- (c) Military bases
- (d) Spaceports

Q20. The I2U2 group is often referred to as a "strategic mini-lateral group." What does "mini-lateral" imply?

- (a) A group involving only regional neighbors
- (b) A large group with over 10 member countries
- (c) A group with a limited number of countries focused on specific goals
- (d) A group focused exclusively on trade agreements

Q21. Consider the following statements regarding Alzheimer's disease:

1. It is a progressive brain disorder characterised by buildup of amyloid beta plaques.
2. It is the most common cause of dementia in the world.

Which of the statements above is/are correct?

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

Q22. Casgevy and Lyfgenia, the cell-based gene therapies are designed to treat ...

- (a) Tuberculosis                              (b) Sickle Cell Disease
- (c) Thalassemia                              (d) Diabetes

Q23. Consider the following movement that Dr. B.R. Ambedkar lead to protest against social discrimination:

1. Quit India Movement
2. Non-Cooperation Movement

3. Civil Disobedience Movement

4. Poona Pact

How many of the above is/are correct?

- (a) Only one                                      (b) Only two  
 (c) Only three                                      (d) All four

Q24. Who was the Prime Minister of India when Manmohan Singh was the Finance Minister?

- (a) Atal Bihari Vajpayee                      (b) P.V. Narasimha Rao
- (c) Rajiv Gandhi                              (d) Indira Gandhi

Q25. Consider the following statements Current Account Deficit:

1. It indicates that the country is importing more goods and services than it is exporting.
2. A persistent current account deficit can lead to a depreciation of the country's currency.

Which of the statements above is/are correct?

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

Q26. The city of Homs was recently in news because of sectarian violence. It is located in...

- (a) Syria                                      (b) Israel
- (c) Iran                                      (d) Afghanistan

Q27. Which ministry is responsible for implementing Project Elephant in India?

- (a) Ministry of Forests and Environment
- (b) Ministry of Tribal Affairs
- (c) Ministry of Science and Technology
- (d) Ministry of Social Justice and Empowerment

Q28. Consider the following statements:

1. The Article 21A of the Indian Constitution was amended to include the Right to Education.
2. Right to Education Act cover the children in the age group of 3-10 years.

Which of the statements given above is/are correct?

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

Q29. Consider the following with reference to the State Public Civil Services Commission in India:

1. The report of the commission is submitted to the Chief Minister of the State.

2. The tenure of the chairman of the commission is 4 years or until the age of 60, whichever is earlier.
3. The recommendations made by the commission are binding on the state government.

How many of the above is/are not correct?

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

Q30. Aktau city, recently seen in news is situated in...

- (a) Kazakhstan                      (b) Russia  
(c) Azerbaijan                      (d) Armenia

Q31. Which of the following best describes the H-1 B visa program recently seen in news?

- (a) Visas for tourism and cultural exchange between India and USA.
- (b) A program for temporary employment of foreign workers in specialty occupations in USA.
- (c) A program for refugees seeking asylum in the United States.
- (d) Offer work permits to refugees and asylum seekers in countries of European Union.

Q32. Consider the following statements regarding Chloromethane:

1. It is also known as methyl chloride and has been used as a refrigerant and solvent.
2. Exposure to high levels of chloromethane gas can have harmful effects on the central nervous system.

Which of the statements above is/are correct?

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

Q33. The PSLV-C60 Mission of ISRO is associated with ...

- (a) Proba 3 Mission                      (b) SpaDeX Mission  
(c) XPoSat Mission                      (d) Aditya-L1 Mission

Q34. Which of the following is the primary objective of Direct Tax Vivad se Vishwas Scheme (DTVSV), 2024:

- (a) Simplify the process of filing income tax returns for individuals.
- (b) Promote tax planning strategies among taxpayers.
- (c) Reducing the number of tax slabs.
- (d) Resolve pending appeals related to income tax disputes.

Q35. Which of the following statements are correct in respect of ISRO's Space Dock Mission:

1. The goal of ISRO's Space Dock Mission is to develop reusable launch vehicles only.
2. Russia and China have their own capability in Space Docking Technology.
3. PS4-Orbital Experiment Module (POEM-4) payloads will also onboard the PSLV-C60 SpaDeX mission.

Select the answer using the code given below:

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

Q36. Under which act does the RBI have the authority to approve the appointment of a CEO in a bank?

- (a) The Companies Act, 2013
- (b) The Banking Regulation Act, 1949
- (c) The Reserve Bank of India Act, 1934
- (d) The Negotiable Instruments Act, 1881

Q37. Which of the following sector has the highest weightage in the Index of Eight Core Industries?

- (a) Coal                      (b) Crude Oil  
(c) Natural Gas                      (d) Refinery Products

Q38. Consider the following statements regarding Pangong Tso Lake:

1. It is a saltwater lake extending between India and China.
2. The lake freezes completely during the winter months despite its saline water content.

Which of the statements above is/are correct?

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

Q39. Consider the following with reference to the tribes of Manipur:

1. Thadou                      2. Simte
3. Kuki                      4. Paite

How many of the above is/are correct?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q40. The Competition Commission of India (CCI) replaced which earlier body responsible for regulating competition in India?

- (a) Directorate General of Trade Remedies (DGTR)
- (b) Securities and Exchange Board of India (SEBI)
- (c) Monopolies and Restrictive Trade Practices Commission (MRTPC)
- (d) Department of Industrial Policy and Promotion (DIPP)

Q41. Consider the following natural gas pipelines:

- 1. Nord Stream 1                      2. Nord Stream 2
- 3. Yamal Europe Pipeline    4. Brotherhood Pipeline

How many of the above pipelines originate in Russia?

- (a) Only one                      (b) Only two
- (c) Only three                      (d) All four

Q42. Velvet ants are a species of ...

- (a) Black Ants                      (b) Wasps
- (c) Honeybees                      (d) Spiders

Q43. Which article of the Indian Constitution defines the powers and functions of the Parliament?

- (a) Article 79                      (b) Article 80
- (c) Article 84                      (d) Article 84

Q44. Which of the following is a key factor considered by the Delimitation Commission while redrawing constituency boundaries?

- (a) Population size and density
- (b) Political party influence
- (c) Economic status of regions
- (d) Literacy rate

Q45. Which of the following best describes a dual criminality principle in extradition?

- (a) The offense must be recognized as a crime in both the requesting and requested countries
- (b) The accused must belong to both countries
- (c) The offense must be a criminal act in the country where the extradition request is made
- (d) Extradition can only occur when the crime involves violence

Q46. Consider the following statements:

- 1. Hydrogels can be classified as natural, synthetic, or hybrid.
- 2. The main application of hydrogels in medicine is for drug-delivery.

Which of the statements given above is/are correct?

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

Q47. Sree Narayana Guru is best known for his contributions to:

- (a) Advancing Ayurveda
- (b) Tamil Sangam literature
- (c) Establishing ancient Vedic schools
- (d) Promoting social equality and reform

Q48. Consider the following statements regarding Right to Property in India:

- 1. Right to Property ceased to be a Fundamental Right by the Constitution (Forty-Fourth Amendment) Act, 1978.
- 2. It is a constitutional right under Article 300-A of the Constitution.

Which of the statements above is/are correct?

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

Q49. Consider the following statements regarding Logistics Ease Across Different States (LEADS) 2024 report:

- 1. It has been developed by Department of Economic Affairs, Ministry of Finance.
- 2. It categorized the states and UTs into 3 categories i.e. achievers, fast movers and aspirers.

Which of the statements above is/are correct?

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

Q50. Xylazine is primarily used for ...

- (a) As a recreational drug for human consumption.
- (b) As a stimulant for increasing alertness in animals.
- (c) As a pain killer in humans
- (d) As a veterinary tranquiliser, sedative and muscle relaxant.

Q51. Consider the following statements:

1. Article 112 requires the presentation of the annual financial statement (budget) in Parliament.
2. The revenue budget focuses on long-term investments; capital budget focuses on daily expenses.

Which of the statements given above is/are correct?

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

Q52. Consider the following statements:

Statement 1: Rajasthan, Karnataka and Tamil Nadu reported the largest extent of nitrate contamination.

Statement 2: Excess of nitrates leads to algal blooms that throttle the health of aquatic ecosystems.

Which one of the following is correct in respect of the above statements?

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1  
 (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1  
 (c) Statement 1 is correct, but Statement 2 is incorrect  
 (d) Statement 2 is correct, but Statement 1 is incorrect

Q53. Consider the following:

1. DNA damage
2. Oxidation and Inflammation
3. Hormone Imbalance

How many of the above are potential causes of cancer caused by alcohol consumption?

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

Q54. Consider the following sectors of Indian economy:

- |                       |                     |
|-----------------------|---------------------|
| 1. Pharmaceuticals    | 2. Renewable Energy |
| 3. Textiles & Apparel | 4. Telecom          |

Which of the above sectors are covered under various Production Linked Incentive (PLI) Schemes?

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

Q55. Which of the following is a significant contribution of Field Marshal Sam Manekshaw during the Indo-Pak War of 1971?

- (a) Initiating peace talks with Pakistan  
 (b) Leading the Indian Army to victory  
 (c) Serving as a military advisor to the Council of Ministers  
 (d) Proposing a ceasefire during the war

Q56. Consider the following with reference to 'The Human Metapneumovirus (HMPV):

1. The HPMV is a bacterium causing gastrointestinal infections.
2. The symptoms commonly associated with HMPV include skin rashes and diarrheal dehydration.
3. Middle-aged individuals are at risk for severe HMPV infection.

How many of the above is/are correct?

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

Q57. Consider the following statements regarding Human metapneumovirus (HMPV):

1. It is a DNA virus with high potential for mutations.
2. It was first identified in China after the outbreak of Sars-CoV-2 that caused COVID-19 pandemic.

Which of the statements above is/are correct?

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

Q58. Consider the following statements regarding space docking:

1. ISRO's Space Docking Experiment (SpaDeX) mission was successfully launched by PSLV C-60.
2. At present only four countries in the world have space docking capability.

Which of the statements above is/are correct?

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

Q59. Consider the following with reference to a power exercised by the Governor as part of the executive:

1. Giving assent to state bills
2. Appointing the Chief Minister and Council of Ministers

3. Summoning and proroguing the state legislature

How many of the above is/are correct?

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

Q60. The national anthem of India was first sung on...

- (a) 15 August 1947              (b) 26 January 1950  
(c) 27 December 1911        (d) 15 August 1948

Q61. Consider the following statements regarding Gross Domestic Product (GDP)

- Nominal GDP is measured using current prices, while Real GDP is adjusted for changes in the price level to reflect constant prices.
- Real GDP provides a more accurate measure of economic growth as it does not adjust for inflation.

Which of the statements above is/are correct?

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

Q62. What is the primary purpose of recently launched BHARATPOL Portal?

- (a) To provide a platform for citizens to report local crimes anonymously.  
(b) To create a national database of convicted criminals and their biometric information.  
(c) To train police officers across India in the latest forensic techniques and technologies.  
(d) For assistance and real-time action against transnational crimes via international police cooperation.

Q63. Which of the following is a key responsibility of the Assam Rifles?

- (a) Maintaining law and order in urban areas  
(b) Conducting counter-terrorism operations only  
(c) Providing security to vital installations only  
(d) Guarding the Indo-Myanmar border

Q64. Consider the following with reference to the advantages of hypersonic missiles:

- They are easily intercepted by current missile defense systems
- They always travel at lower altitudes
- They are highly accurate due to their high speed and maneuverability

How many of the above is/are not correct?

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

Q65. Consider the following statements regarding Unlawful Activities (Prevention) Act (UAPA):

- The act allows for detention without a charge sheet for a maximum period of 90 days.
- Under the UAPA, both Indian citizens and foreign nationals can be charged for offenses committed within or outside India.

Which of the statements above is/are correct?

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

Q66. Consider the following statements regarding Mullaperiyar Dam:

- The dam is situated on Periyar River.
- It is located in Tamil Nadu.

Which of the statements above is/are correct?

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

Q67. What is the significance of the Ken-Betwa River Linking Project for Panna Tiger Reserve?

- (a) It provides irrigation to nearby villages  
(b) It may impact the reserve's ecosystem due to water diversion  
(c) It helps in increasing tiger populations  
(d) It creates a new tourism attraction

Q68. What is the primary function of the National Water Development Agency (NWDA)?

- (a) Regulation of water prices  
(b) Surveying, planning, and implementation of interlinking of rivers  
(c) Developing new water sources  
(d) Conservation of freshwater lakes

Q69. World Economic Situation and Prospects (WESP) report is published by ...

- (a) International Monetary Fund (IMF)  
(b) United Nations

- (c) World Bank
- (d) World Economic Forum

Q70. The satellites SDX01 (Chaser) and SDX02 (Target) are the components of which of the following ISRO programme?

- (a) Asteroid Impact Assessment
- (b) Gaganyaan Mission
- (c) SpaDex
- (d) IRNSS

Q71. Which of the following statements are correct in respect of the earthquake:

1. The point on the Earth's surface directly above the earthquake's origin is known as the Epicenter.
2. The first seismic waves to arrive at a seismic station are called P-waves.
3. The point beneath the Earth's surface where the earthquake begins is Hypocenter.

Select the answer using the code given below:

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

Q72. The term "Kumbh" refers to which of the following?

- (a) A sacred river                      (b) A pot containing nectar
- (c) A religious ceremony              (d) A temple

Q73. Consider the following with reference to 'The Delimitation Commission in India':

1. The Delimitation Commission's role is to redefine the boundaries of parliamentary and assembly constituencies.
2. The Commission can change the number of constituencies in any state.
3. The Delimitation Commission was last constituted in 2002.

How many of the above is/are correct?

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

Q74. Which of the following aspects is emphasized in India's commitment to the Sustainable Development Goals (SDGs) for this year's National Youth Festival?

- (a) Focus on youth's role in technology and innovation
- (b) Primarily political engagement of young people

- (c) Economic growth without environmental consideration
- (d) Limiting youth involvement in decision-making processes

Q75. Which of the following best describes Santa Ana winds?

- (a) Cold, moist winds originating from the Pacific Ocean.
- (b) Hot, dry winds originating from inland deserts.
- (c) Strong, moist winds from the Indian Ocean.
- (d) Mild, humid breezes from the Atlantic Ocean.

Q76. Consider the following statements:

1. 2024 was the first calendar year to breach the 1.5°C global warming threshold.
2. It marks the failure of 2015 Paris Agreement as the target is breached and is now over.

Which of the statements above is/are correct?

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

Q77. Consider the following deserts:

1. Rub' al-Khali                      2. Dasht-e Kavir
3. An Nafud                              4. Al-Hajarah
5. Al-Dahna

How many of the above deserts are located in Saudi Arabia?

- (a) Only two                                      (b) Only three
- (c) Only four                                      (d) All five

Q78. Consider the following countries:

1. Slovenia                              2. Romania
3. Bulgaria                              4. Serbia
5. Austria

How many of the above countries share a land border with Croatia?

- (a) Only two                                      (b) Only three
- (c) Only four                                      (d) All five

Q79. Consider the following with reference to the principles followed by National Green Tribunal:

1. Polluter Pays Principle
2. Precautionary Principle

3. Sustainable Development Principle

How many of the above is/ are correct?

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

Q80. Which of the following ministry in India launched the Draft Digital Personal Data Protection (DPDP) Rules?

- (a) Ministry of Electronics and Information Technology (MeitY)  
(b) Ministry of Home Affairs  
(c) Ministry of Finance  
(d) Ministry of Law and Justice

Q81. Consider the following statements regarding International Court of Justice (ICJ):

1. The International Court of Justice (ICJ) is the principal judicial organ of the United Nations.
2. It can settle disputes only between states and cannot address the cases involving individuals or private entities.
3. Its decisions are binding on all parties involved in a case.

How many of the above statements are correct?

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

Q82. The recently inaugurated Z-Morh tunnel connects...

- (a) Kashmir Valley with Ladakh  
(b) Sikkim with Darjeeling  
(c) Guwahati in Assam with Tawang in Arunachal Pradesh  
(d) Gagangir and Sonamarg in Kashmir

Q83. Consider the following with reference to objectives of the Viksit Bharat Programme:

1. Achieving self-reliance in critical sectors such as defense and technology.
2. Eliminating income inequality across all states by 2030.
3. Promoting universal access to quality education and healthcare.

How many of the above is/ are correct?

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

Q84. What does Rule 93(2) of the Representation of the People Act, 1951, pertain to?

- (a) Conduct of voting  
(b) Scrutiny of nomination papers  
(c) Counting of votes  
(d) Declaration of election results

Q85. Carbaryl, recently seen in news is a ...

- (a) Dye                              (b) Anti-cancer drug  
(c) Fertiliser                      (d) Pesticide

Q86. Naphthol is commonly used in making of ...

- (a) Protein Supplements        (b) Electronics  
(c) Dyes                            (d) Fertilisers

Q87. Consider the following states:

1. Tripura
2. Meghalaya
3. Manipur
4. Mizoram

How many of the above states share international border with Bangladesh?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q88. Indian Army Day is celebrated annually on January 15th to commemorate:

- (a) The raising of British Indian Army.  
(b) The Army's victory in 1971 India-Pakistan war.  
(c) The role of the Indian Army in UN peacekeeping missions.  
(d) Taking over the command of Indian Army by General KM Cariappa from last British Commander-in-Chief.

Q89. Consider the following statements regarding INS Nilgiri:

1. It is a stealth corvette belonging to the Nilgiri class.
2. It is built by Mazagon Dock Shipbuilders Limited and Garden Reach Shipbuilders and Engineers under Project 17A.

Which of the statements above is/are correct?

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

Q90. Which of the following is the Indian Navy's first Artificial Intelligence enabled warship?

- (a) INS Nilgiri              (b) INS Vaghsheer  
(c) INS Surat              (d) INS Visakhapatnam

Q91. Consider the following statements:

1. 'Nautor' refers to the practice of cultivating wasteland or uncultivated land for agricultural purposes.
2. The practice of Nautor has been particularly popular in Tamil Nadu.

Which of the statements given above is/are not correct?

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

Q92. According to the constitution, the President address both the houses of Parliament ...

1. Before the declaration of General Election (Lok Sabha) by the Election Commission.
2. At the beginning of the first Session after each general election when the reconstituted Lok Sabha meets for the first time.
3. At beginning of the first session of each year.
4. At the beginning of each parliamentary session.

Which of the statements above is/are correct?

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

Q93. Consider the following statements regarding Indian Meteorological Department (IMD):

1. IMD is the principal government agency responsible for providing meteorological services to India.
2. It was established in 1955 on the recommendation of First Planning Commission.
3. It functions under the Ministry of Science and Technology.

How many of the above statements are correct?

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

Q94. The recently launched Mission Mausam is an initiative aimed at ...

- (a) Improving India's space exploration capabilities  
(b) Enhancing weather forecasting and climate science in India  
(c) Promoting renewable energy sources in India  
(d) Developing India's rain-fed agricultural sector

Q95. Consider the following with reference to the NATO:

1. NATO is a military alliance formed for the collective defense of member states.
2. NATO operates under the principle of universal collective security for all nations globally.
3. The NATO alliance expanded significantly after the Cold War, including many former Soviet Union countries.

How many of the above is/are correct?

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

Q96. Which of the following can trigger a by-election?

- (a) A member's term expires  
(b) A member resigns or passes away  
(c) The government changes  
(d) A new political party is formed

Q97. Consider the following with reference to purpose of adjusting the CPI for inflation?

1. To determine the actual purchasing power of the currency.
2. To assess the overall economic growth of a country.
3. To calculate the interest rates for loans.
4. To compare the cost of living across different time periods.

How many of the above is/are correct?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q98. Consider the following statements:

1. In the context of economic growth, Incremental Capital Output Ratio (ICOR) reflects the relationship between capital accumulation and output growth.

2. An improvement in Incremental Capital Output Ratio (ICOR) signifies that the economy is using capital more efficiently to increase production.

Which of the statements given above is/are correct?

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

Q99. Consider the following:

1. Future of Work                      2. Academic Readiness  
3. Economic Transformation      4. Skill Fit

How many of the above are indicators used for the QS World Future Skills Index?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q100. Consider the following statements regarding the Solar Cycle:

- The solar cycle is an approximately 11-year cycle of changes in the Sun's activity, including variations in sunspots, solar flares, and solar radiation.
- During the peak of the solar cycle, known as the solar maximum, sunspot activity is at its lowest.

Which of the statements above is/ are correct?

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

Q101. Consider the following statements regarding Olive Ridley Turtles:

- Olive Ridley Turtles are named after their olive-coloured shell.

- They are solitary creatures and do not exhibit any group nesting behaviour.
- These turtles are classified as a species of least concern by the IUCN.

How many of the above are indicators used for the QS World Future Skills Index?

- (a) Only one                      (b) Only two  
(c) Only three                      (d) All four

Q102. Consider the following statements regarding the Dark Web:

- The Dark Web is a part of the internet that can only be accessed using specialized software like Tor.
- All activities on the Dark Web are illegal.

Which of the statements given above is/ are correct?

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

Q103. Which of Akbar's Nine Jewels (Nav Ratnas) was known for his knowledge of military strategy and was a general in Akbar's army?

- (a) Abul Fazl                      (b) Raja Man Singh  
(c) Birbal                      (d) Raja Todar Mal

Q104. Who appoints the members of the National Company Law Tribunal (NCLT)?


- (a) The Prime Minister of India  
(b) The President of India  
(c) The Chief Justice of India  
(d) The Ministry of Corporate Affairs

**Answer Key**

Q1.	b (1 and 2 only)	Q22.	b	Q43.	a	Q64.	b (1 and 2)	Q85.	d
Q2.	a	Q23.	a (4 only)	Q44.	a	Q65.	b	Q86.	c
Q3.	c	Q24.	b	Q45.	a	Q66.	a	Q87.	c (1, 2 and 4 only)
Q4.	a (1 only)	Q25.	c	Q46.	c	Q67.	b	Q88.	d
Q5.	b (2 and 3 only)	Q26.	a	Q47.	d	Q68.	b	Q89.	b
Q6.	c	Q27.	a	Q48.	c	Q69.	b	Q90.	c
Q7.	c	Q28.	a	Q49.	d	Q70.	c	Q91.	b
Q8.	b	Q29.	c	Q50.	d	Q71.	d	Q92.	b
Q9.	b	Q30.	a	Q51.	a	Q72.	b	Q93.	a (1 only)
Q10.	c	Q31.	b	Q52.	b	Q73.	b (1 and 3 only)	Q94.	b

Q11.	d	Q32.	c	Q53.	c	Q74.	a	Q95.	b (1 and 3 only)
Q12.	b (1 and 3 only)	Q33.	b	Q54.	d	Q75.	b	Q96.	b
Q13.	c	Q34.	d	Q55.	b	Q76.	a	Q97.	b (1 and 4 only)
Q14.	d	Q35.	b	Q56.	d	Q77.	b (1, 3, and 5)	Q98.	a
Q15.	c	Q36.	b	Q57.	d	Q78.	a (1, 4 only)	Q99.	d
Q16.	d	Q37.	d	Q58.	a	Q79.	c	Q100.	a
Q17.	d	Q38.	c	Q59.	c	Q80.	a	Q101.	d
Q18.	c	Q39.	d	Q60.	c	Q81.	c	Q102.	a
Q19.	b	Q40.	c	Q61.	a	Q82.	d	Q103.	b
Q20.	c	Q41.	d	Q62.	d	Q83.	b (1 and 3 only)	Q104.	b
Q21.	c	Q42.	b	Q63.	d	Q84.	b		

For Detailed Explanation



Scan QR Code

DAILY ANSWER WRITING PRACTICE

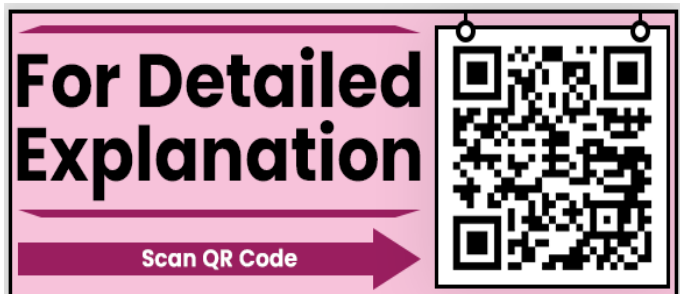
- Q1. Climate change affect women differently than men. Discuss the ways by which climate conferences like UNFCCC and UNCCD effectively bridge the gap between gender equity in policies and their implementation to address the disproportionate impact of climate change on women. (GS 1 and 3; 10 Marks; 150 Words)
- Q2. The first ever Ganges river dolphin was tagged in Assam by Wildlife Institute of India. What is the significance of such tagging exercise? Discuss the threats faced by the Ganges river dolphin and efforts made towards its conservation. (GS 3; 15 Marks; 250 Words)
- Q3. Government is promoting and raising awareness about sustainable agriculture practices among the farmers. Discuss the various methods of sustainable agriculture. What are the challenges associated with sustainable agriculture? (GS3, 15 Marks, 250 Words)
- Q4. A parliamentary committee has recommended implementing a legal guarantee on Minimum Support Price and measures to improve farmers' welfare. Parliamentary committees provide the opportunity for collaboration between the two houses

- of Parliament and help MPs examine matters in great detail. Discuss the origin, significance and challenges of parliamentary committees in India. (GS2, 15 Marks, 250 Words)
- Q5. Adopting synergistic approaches to address interconnected global challenges like climate change, biodiversity loss, and food insecurity leads to sustainable development. Comment. (GS 3; 10 Marks; 150 Words)
- Q6. Compare and contrast the approaches of Dr. B.R. Ambedkar and Mahatma Gandhi towards caste and social reforms. How did their different philosophies shape their methods and visions for achieving social justice in India? (GS 1; 15 Marks; 250 Words)
- Q7. Being the world's most populated country and having over-crowded cities, India is not a stranger to mass gatherings and stampedes. Discuss the factors leading to stampedes. (GS 1 and 3; 10 Marks; 150 Words)
- Q8. The countries in Sahel region have witnessed political instability and military coups in recent years. Discuss the factors contributing to the region's turmoil and evaluate the implications of this instability for global powers and India's strategic interests. (GS 2; 15 Marks; 250 Words)
- Q9. Prime Minister recently laid the foundation stone of the Ken- Betwa River Linking National Project. Examine the benefits, and environmental and social impacts of the project. (GS 1; 15 Marks; 250 Words)
- Q10. The power dynamics in West Asia is changing as highlighted by the recent regime change in Syria. Examine the regional geopolitical developments in West Asia and their implications for India. (GS 2, 15 Marks, 250 Words)
- Q11. The weak western disturbances have led to warmer November in India. How western disturbances

shape winter precipitation in India? Write a note on the impact of western disturbances in India. (GS 1; 15 Marks; 250 Words)

- Q12. The Indian Rupee witnessed substantial depreciation against US Dollar in 2024. Discuss the arguments against excessive regulatory intervention by RBI to manage Rupee volatility. What are the different regulatory measures and the problems associated with such measures? (GS3, 10 Marks, 150 Words)
- Q13. India successfully tested K-4 nuclear-capable ballistic missile from INS Arighaat. Discuss the significance of INS Arighaat and opportunities arising out of SSBNs in India's strategic defence capabilities. (GS3, 15 Marks, 250 Words)
- Q14. Discuss the significance of GDP as an economic indicator. What are the key factors that influence India's GDP growth amid recent developments? Write a short note on policy recommendations for sustained growth. (GS 3; 15 Marks; 250 Words)
- Q15. According to World Meteorological Organisation, 2024 was the hottest year on record. Describe the significance of 1.5oC threshold in combating climate change. How can the world stay within this threshold? (GS3, 15 Marks, 250 Words)
- Q16. What are the challenges associated with the existing intensive agriculture system in India? Evaluate the benefits of regenerative farming as a sustainable alternative to ensure food, nutritional, and ecological security. (GS 3; 15 Marks; 250 Words)
- Q17. Prime Minister's recent trip to Kuwait highlights the significance of the Gulf region. Deepening economic and strategic ties between India and the Gulf Cooperation Council (GCC) can help address global challenges such as climate change, security, and technological innovation. Comment. (GS 2; 10 Marks; 150 Words)
- Q18. Discuss how the Indian diaspora contributes to India's economic growth and shapes India's soft power globally. What are the initiatives taken by the Government of India to engage with the Indian diaspora? (GS 2; 15 Marks; 250 Words)
- Q19. With the announcement of assembly polls, the political discourse of the country has shifted to Delhi. Discuss the provisions of Article 239AA of the Indian Constitution related to Delhi. How are the powers of Delhi government limited compared to other state governments? (GS 2; 15 Marks; 250 Words)

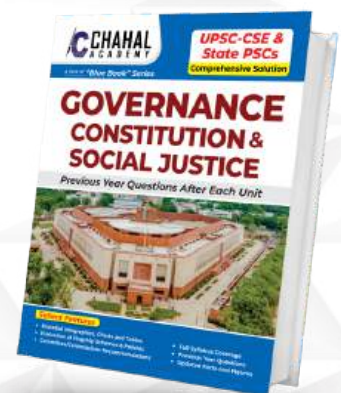
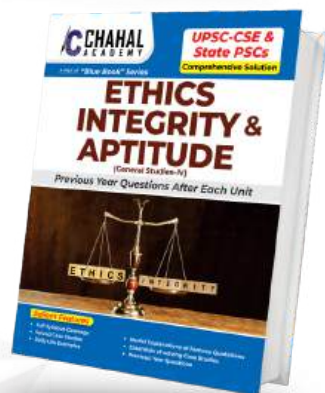
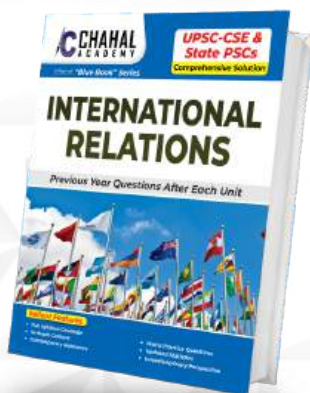
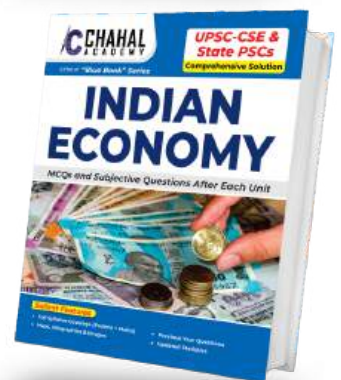
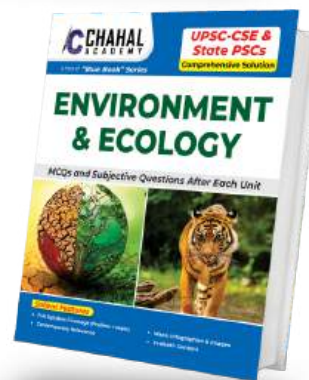
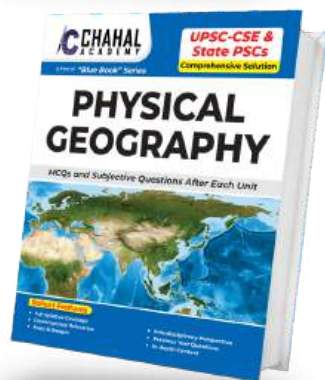
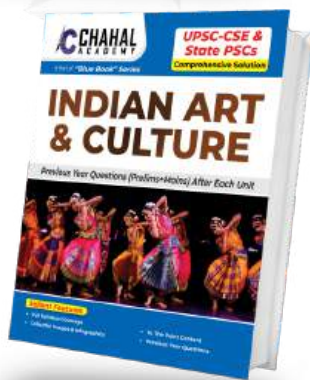
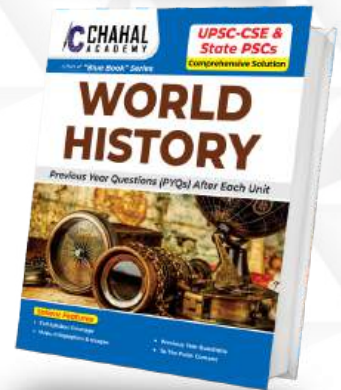
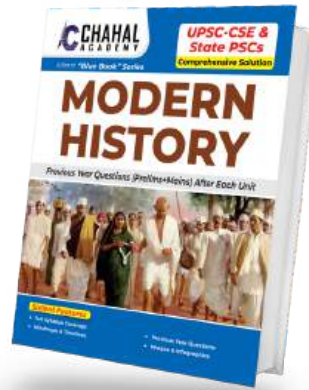
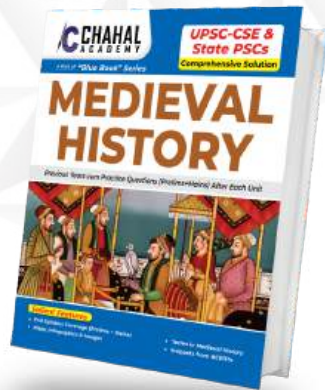
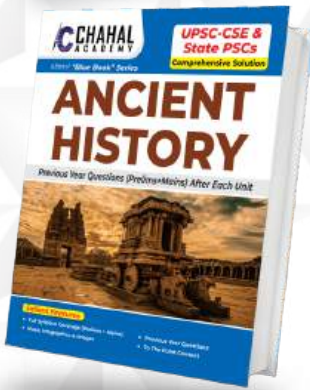
- Q20. China approved the construction of the world's largest hydropower project on the Yarlung Tsangpo (Brahmaputra) river in Tibet. Why is India concerned about this development? Discuss the coordination mechanism between Indian and China regarding transboundary rivers. (GS 2; 15 Marks; 250 Words)
- Q21. Forest Fires are becoming sources of triple burden of loss of forest covers, endangerment of wild life, and contributing to greenhouse gas emissions. Discuss the extent of problems and efforts done by Government of India to mitigate forest fires. (250 words, 15 marks)
- Q22. Government is raising awareness regarding digital arrest scams through various means. What are these digital arrest scams? Discuss the implications of rising cyber scams in India, and the government's initiatives to enhance digital security. (GS 3; 15 Marks; 250 Words)
- Q23. How do regional disparities, socio-economic inequalities, and government policies collectively influence the patterns, experiences, and outcomes of internal migration in India? (GS 1; 15 Marks; 250 Words)
- Q24. What are the different types of violence faced by women in India? Discuss the legal frameworks related to women safety in India. (GS1, 15 Marks, 250 Words)
- Q25. Discuss the evolution of Indian agriculture from subsistence farming to market-oriented practices, highlighting the challenges faced by the agriculture sector. (GS 3; 15 Marks; 250 Words)
- Q26. Discuss the factors contributing to the occurrence and spread of wildfires. Highlight the impact of wildfires on Sustainable Development Goals. (GS1 and 3; 15 Marks; 250 Words)



# Blue Book Series

## By Chahal Academy

### Books in Our "Blue Book" Series



For any Query or Order-  9205927650

 **CHAHAL ACADEMY**  
(Chahal Academy Pvt. Ltd.)

www.chahalacademy.com  
Follow Us 

MRP. ₹ 120.00