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from



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- India's New EPR Framework for Non-Ferrous Metals

- Santhal Hul
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- PM Kaushal Vikas Yojana
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50 YEARS OF PROCLAMATION OF EMERGENCY

Why in News: The Union Cabinet paid tribute to those who bravely resisted the Emergency period in India. It recognized the early signs of constitutional subversion starting in 1974 with the suppression of Navnirman Andolan and Sampooran Kranti Abhiyan.

Key Details

- The Emergency came to a formal end in March 1977, following a political shift triggered by general elections. The **Shah Commission of Inquiry was set up in May 1977** to examine abuses of power during the Emergency.
- The Commission examined the misuse of government power, preventive detentions, press censorship, and the sterilisation campaign.
- The Commission submitted three reports between 1978 and 1979.

National Emergency

- The Constitution uses the expression 'proclamation of emergency' to denote a National Emergency.
- **Examples:**
 - October 1962 - January 1968: **Chinese aggression**
 - December 1971 - March 1977: **Indo-Pak war**
 - June 1975 - March 1977: **Internal political crisis**
- **Grounds:** When the security of India or a part of it is threatened by war or external aggression (external emergency) and armed rebellion (internal emergency).
- **44th Amendment Act (1978)** substituted the words 'armed rebellion' for 'internal disturbance'.
- **38th Amendment Act (1975)** allows the President to issue different proclamations on grounds of war, external aggression, armed rebellion, or imminent danger thereof.
- **Territorial Extent:** The entire country or a part of it over which a government has the authority to make and enforce laws.
- **Safeguards:**
 - **Written recommendation from the Cabinet.** (44th Amendment Act). Must be ratified by both houses within one month from the date of its issue by a special majority. Originally, the period allowed for approval was two months.

- If the Lok Sabha stands dissolved during the declaration of emergency, then it **must be approved by reconstituted Lok Sabha within 30 days from its first sitting**, provided Rajya Sabha has approved it in the meantime.
- **Duration:** Continues for 6 months, and can be extended to an indefinite period with the approval of Parliament after every 6 months. (44th Amendment Act).
- **Revocation:**
 - **By the President:** A National emergency can be revoked at any time by the President without requirement of approval by Parliament.
 - **By the Parliament:**
 - ◆ Lok Sabha can issue a resolution disapproving continuation.
 - ◆ One-tenth of the total members of Lok Sabha gives a written recommendation to Speaker, if house is in session or President otherwise.
 - ◆ A special sitting shall be held within 14 days to consider the resolution.
 - ◆ The resolution has to be passed by a simple majority.

Effect of National Emergency

- **On Centre-State Relations:**
 - **Executive:**
 - ◆ The Centre is entitled to give executive directions to a state on 'any' matter.
 - ◆ State governments are brought under complete control of the Centre, though they are not suspended.
 - **Legislative:**
 - ◆ Although the legislative power of a state is not suspended, Parliament is empowered to make laws on any subject mentioned in the State List.
 - ◆ Laws made by Parliament on state subjects become inoperative six months after the emergency has ceased to operate.
 - ◆ The President can issue ordinances on state subjects if Parliament is not in session.
 - ◆ Parliament can confer powers and impose duties

the **Speaker** and which works under the direction of the Speaker and presents its **report to the House or to the Speaker and the Secretariat** for which is provided by the Lok Sabha Secretariat.

Types of Parliamentary Committees

- By their nature, Parliamentary Committees are of two kinds: **Standing Committees and Ad hoc Committees**.
- **Standing Committees are permanent and regular committees** which are constituted from time to time in pursuance of the provisions of an Act of Parliament or Rules of Procedure and Conduct of Business in Lok Sabha.
 - The work of these Committees is of continuous nature. The Financial Committees, DRSCs and some other Committees come under the category of Standing Committees.
- **Ad hoc Committees are appointed for a specific purpose** and they cease to exist when they finish the task assigned to them and submit a report.
 - The principal Ad hoc Committees are the Select and Joint Committees on Bills. Railway Convention Committee, Joint Committee on Food Management in Parliament House Complex etc also come under the category of ad hoc Committees.

Departmental Related Standing Committees (DRSCs)

- **To help Parliament examine funds allotted to ministries**, DRSCs were established in 1993.
- They also analyse other pertinent policy issues and look at bills that Parliament has referred to them.
- A ministry or group of ministries is supervised by one of **24 DRSCs**.
- They consist of **10 members from the Rajya Sabha and 21 members from the Lok Sabha**.
- These DRSCs are **established for a one-year term**.

Financial Committees

- To ensure the efficient use of public funds and maintain parliamentary oversight over government expenditure, **three key financial committees have been constituted**: the Estimates Committee, the Public Accounts Committee, and the Committee on Public Undertakings.
- The **Public Accounts Committee and the Committee on Public Undertakings** each comprise 22 members—15 from the Lok Sabha and 7 from the Rajya Sabha.
- The **Estimates Committee consists exclusively of 30 members from the Lok Sabha**, elected by the House.
- All members of these committees are appointed for a **one-year term**.

Administrative Committees

- A number of committees have been established by the Houses, including the **Business Advisory Committee**, which assists in setting the daily agenda for Parliament.

Accountability Committees

- In addition to DRSCs and financial committees, three other committees make sure the government is answerable to the people and Parliament.
- These are the **Subordinate Legislation Committee, the Government Assurances Committee, and the Petitions Committee**.

Significance and Functions of Parliamentary Committees

Parliamentary Committees were established in order to **thoroughly review proposed laws, government spending, and policies, which helped to lighten the burden on parliament**.

- **Detailed discussions**: There are a number of benefits to committee discussions. Experts and interested parties can provide committees with input on a range of topics.
- **Check on executives**: These committees examine government policies and hold the government responsible for its actions, which serves as a check on the executive branch's power.
- **Budgetary review**: The Departmental related standing committees (DRSCs) are responsible for overseeing the budget. All ministries submit detailed estimates of their spending to the DRSCs for review.
- **Receiving public input**: They also review public petitions, verify that government-drafted regulations comply with Acts of Parliament, and assist in overseeing the operation of Parliament.
- **Research assistance and expert witnesses**: Committee members are better equipped to comprehend the nuances of complex issues and the possible effects of a policy or piece of legislation when they interact with experts and stakeholders.

Measures to Strengthen the Functioning of Parliamentary Committees

- **Mandatory referral to parliamentary committee**: Bills are automatically referred to committees in certain parliamentary systems, such as the UK, with the exception of money bills. A minimum degree of parliamentary scrutiny would be applied to all laws if all bills were referred to a committee.
- **Committee recommendation consideration**: It is also not required to discuss the committees' recommendations or provide justifications for rejecting particular recommendations in parliament. The House discussion of these specifics could enrich and deepen the parliamentary debate.
- **Increase time and resources**: Committees should be given more time and resources to study and assess government policies and actions. Funds should be allocated to support these committees in their investigations, public hearings, and data collection.
- **Boost independence**: Committees ought to be autonomous and free from influence from the state or other powerful organisations.

- **Public awareness:** Hold public hearings or publish reports to increase the transparency and public accessibility of committee work.

Conclusion

Parliamentary Committees are essential for informed lawmaking and executive accountability. Strengthening their autonomy, resources, and transparency will enhance their effectiveness and reinforce the democratic process.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding various parliamentary committees:

1. Estimates committee consists of 15 members from Lok Sabha and 7 members from Rajya Sabha.
2. Public accounts committee consists of 30 members from Lok Sabha.
3. Members are chosen for the term of 5 years in estimates committee.

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

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

(d) :Answer

Descriptive Question

Q. Critically examine the functioning of Parliamentary Committees in India and suggest measures for strengthening their role in the legislative process. [150 Words] [10 Marks]

NOMINATION TO RAJYA SABHA

Why in News: Recently, President Droupadi Murmu nominated former Foreign Secretary Harsh Vardhan Shringla, Special Public Prosecutor in the 26/11 Mumbai terror attacks case Ujjwal Nikam, Kerala BJP leader C. Sadanandan Master and Delhi-based historian Meenakshi Jain to the Rajya Sabha.

Members of Rajya Sabha

- **Number of Nominated Members:** The maximum strength of Rajya Sabha is 250 members, of which **12 are to be nominated by the President of India**. The current strength of Rajya Sabha is 245, with 12 nominated members.
- **Qualifications for Nomination:** Members nominated by the President are chosen from among persons having **special knowledge or practical experience in specific fields such as literature, science, art, and social service**.

- **Voting Rights:** Nominated members of Rajya Sabha have the right to vote in the election of the Vice-President of India, but they are not entitled to vote in the election of the President of India.

About Rajya Sabha

- The Parliament of India consists of the President and the two Houses: the Council of States (Rajya Sabha) and the House of the People (Lok Sabha).
- The Rajya Sabha is a **permanent House and is not subject to dissolution**. Approximately one-third of its members retire every second year.
- It functions as a **federal chamber**, representing the States and Union Territories.
- The **Council of States was officially named 'Rajya Sabha'** in Hindi on 23 August 1954, following an announcement by the Chairman of Rajya Sabha.
- The Rajya Sabha was first constituted on 3 April 1952 and met for the first time on 13 May 1952.
- **Composition**
 - The maximum strength of Rajya Sabha is **250 members**, with **238 elected** representatives from States and Union Territories and **12 nominated** by the President.
 - The present strength is 245 members, with 233 elected and 12 nominated.
 - The number of members from each State varies according to the **Fourth Schedule of the Constitution**, based on population.
- **Term of Members:** The term of a member of the Rajya Sabha is **six years**. A member elected in a bye-election serves for the remainder of the term for the vacancy caused.
- **Quorum:** To constitute a meeting of Rajya Sabha, the quorum is one-tenth of the total members of the House, which is **25 members**.
- **Chairman:** The Vice-President of India is the ex officio Chairman of Rajya Sabha.
- **Deputy Chairman:** Elected by the members of Rajya Sabha from among its members. The Deputy Chairman performs the **duties of the Chairman when the office is vacant or when the Vice-President is acting as President**.
- **Secretary-General:** Appointed by the Chairman, the Secretary-General assists the Presiding Officer, acts as custodian of House records, and is the administrative head of the Rajya Sabha Secretariat.
- **Special Powers of Rajya Sabha:** Rajya Sabha enjoys certain special powers compared to Lok Sabha
 - **Empowering Parliament on State List Matters:** It can empower Parliament to make laws on any matter in the State List in the national interest by passing a resolution with a two-thirds majority of members present and voting (Article 249).

- **Creation of All India Services:** It has the power to create All India Services (Article 312).
- **Method of Election:** Members of Rajya Sabha are elected by the **elected members of the Legislative Assemblies of States and Union Territories**. The election is conducted in accordance with the system of proportional representation by means of the single transferable vote.

Significance of Rajya Sabha in Indian Democracy

The Rajya Sabha, or Council of States, plays a crucial role in maintaining India's federal balance and enriching the law-making process.

- **Federal Representation:** Rajya Sabha gives states a platform to express their views at the national level.
- **Legislative Review:** It carefully examines bills passed by the Lok Sabha and can suggest improvements. This ensures that laws are well thought out and not rushed.
- **Ensures continuity:** Unlike the Lok Sabha, it is a permanent body. One-third of its members retire every two years, so it always remains in operation.
- **Check on Populism:** Rajya Sabha members are not directly elected by the people, so they are less influenced by populist pressures. This helps in balanced and long-term policymaking.
- **Expertise and Experience:** Eminent personalities from various fields can be nominated to the Rajya Sabha. Their knowledge and experience add depth to discussions and decisions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the composition of the Rajya Sabha:

1. The maximum strength of the Rajya Sabha is 250 members.
2. The Members of Rajya Sabha are elected by the elected members of the Legislative Assemblies of States and Union Territories.
3. The President of India can nominate 12 members to the Rajya Sabha.

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

Answer: (d)

SPECIAL INTENSIVE REVISION (SIR) AND ORDINARY RESIDENT

Why in News: The Election Commission of India (EC) has initiated a Special Intensive Revision (SIR) of the electoral rolls in Bihar.

Special Intensive Revision (SIR)

- This initiative has sparked a discussion around the definition of 'ordinarily resident' for the purpose of being included in a constituency's electoral rolls.
- Special Intensive Revision (SIR) is a **targeted, time-bound door-to-door verification exercise carried out by Booth Level Officers (BLOs)** to update the electoral rolls ahead of key elections.
- It aims to ensure the accuracy and inclusiveness of the voter list by enabling additions, deletions, and corrections.

Ordinary Resident

- The concept of 'ordinarily resident' is central to the preparation of electoral rolls by the Election Commission of India (ECI), as mandated by the provisions of the **Representation of the People Act, 1950 (RP Act)**.
- **Definition and Legal Basis**
 - For a person to be included in the electoral roll of a constituency, **Section 19 of the Representation of the People Act, 1950 (RP Act)** requires them to be 'ordinarily resident' in that constituency.
 - A person is **not considered 'ordinarily resident'** solely based on owning or possessing a dwelling house in a constituency.
 - However, an individual who is temporarily absent from their place of residence shall continue to be 'ordinarily resident' there.
 - Specific categories of people, along with their spouses, are considered 'ordinarily resident' in their original constituency even if they are posted elsewhere.
- **Purpose of the Requirement**
 - The requirement for being 'ordinarily resident' aims to ensure that the **voter maintains real ties with the constituency**, which helps to preserve representative accountability.
 - It is also designed to **prevent fraudulent registrations**.

Issues with 'Ordinary Resident' Requirement

- The term 'ordinarily resident' ensures voters have genuine ties to a constituency, preventing fraud. The **Gauhati High Court (1999) ruled it implies a permanent, habitual residence with intent to stay**.
- This poses challenges for migrant labourers, **about 15 crore people, who move for work but retain deep connections** with their home regions. Many live temporarily near work sites but return home regularly and vote where their families reside.

Conclusion

The RP Act **allows service voters, declared office holders, and NRIs to retain their vote** despite not residing permanently in a constituency. Similarly, migrant labourers, who move for work but maintain strong ties to their home regions, should be allowed to retain their original voter registration.

Amendments to the RP Act or electoral rules could preserve their voting rights. Duplicate registrations can be addressed through Aadhaar linkage.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements best describes the term 'ordinarily resident' under the Representation of the People Act, 1950?
- (a) A person who owns a house in a constituency is always considered ordinarily resident.
 - (b) A person temporarily away from their usual place of residence ceases to be an ordinarily resident.
 - (c) A person habitually residing in a constituency, even if temporarily absent, is considered ordinarily resident.
 - (d) Any citizen can choose any constituency for registration, irrespective of residency.

(c) :Answer

POLITICAL PARTIES IN INDIA

Why in News: The Election Commission of India (ECI) has begun the process for delisting 345 Registered Unrecognised Political Parties (RUPPs), which have failed to fulfil the essential condition of contesting even a single election for the last six years since 2019 and whose offices could not be physically located anywhere.

Key Details

- Of the over 2,800 RUPPs, currently registered with ECI, **many have failed to fulfil the essential conditions that are required to continue as an RUPP.** Thus, a nationwide exercise was conducted by the Commission to identify such RUPPs and 345 of them have already been identified.
- In order to ensure that no party is unduly delisted, the **Chief Electoral Officers (CEOs) of the respective States/UTs have been directed to issue show-cause notices** to such RUPPs following which, these parties will be given an opportunity through a hearing by the concerned CEOs.
- The final decision **regarding the delisting of any RUPP shall be taken by the Election Commission of India.**

Registration of Political Parties in India

- The registration of political parties in India is governed by the provisions of Section 29A of the **Representation of the People Act, 1951.** It is not mandatory for an association to register with the ECI to contest elections, but registration offers significant advantages.
- Once registered, a political party can then work towards fulfilling the criteria to gain **recognition as a State or National Party**, thereby unlocking further benefits and a more prominent role in the Indian electoral landscape.

Recognised and Unrecognised Political Party

- Political parties in India are broadly categorised into recognised and unrecognised based on criteria set by the Election Commission of India.
- **Privileges of Recognised Political Parties**
 - **Reserved Party Symbol:** A unique symbol reserved exclusively for the party's candidates across the country (for national parties) or within a specific state (for state parties).
 - **Free Broadcast Time:** Access to state-run television (Doordarshan) and radio (Akashvani) for political broadcasts during general elections.
 - **Consultation in Election Dates and Rules:** The ECI consults with recognised parties when setting election dates and electoral rules.
 - **Star Campaigners:** Recognised parties can nominate a higher number of "star campaigners" (40 for recognised parties vs. 20 for unrecognised parties), whose travel expenses are not accounted for in the candidates' election expenditure.
 - **Access to Electoral Rolls:** Entitlement to two sets of electoral rolls free of cost.
 - **Subsidised Land:** Potential for subsidised land for party offices.
 - **One Proposer for Nomination:** Only one proposer is needed for filing nomination papers for their candidates.
- **Criteria for Recognition:** The ECI sets specific criteria for a registered party to be recognised as a National or State party under the **Election Symbols (Reservation and Allotment) Order, 1968.**
 - For a **National Party**, a party must fulfil any one of the following three conditions:
 - ◆ Its candidates have secured **at least 6% of the total valid votes polled in at least four states in the latest Lok Sabha or Assembly elections**, and the party has at least 4 Members of Parliament (MPs) in the last Lok Sabha polls.
 - ◆ It has **won at least 2% of the total seats** in the Lok Sabha from at least three different states.
 - ◆ It is **recognised as a State Party in at least four states.**
 - For a **State Party**, a party must fulfil any one of the following conditions:
 - ◆ It secures **at least 6% of the total valid votes** polled in an election to the State Legislative Assembly and **wins at least two seats in that State Assembly.**
 - ◆ It secures **at least 6% of the total valid votes** polled in a Lok Sabha General Election from that state and **wins at least one Lok Sabha seat** from that state.

PROTECTION OF CIVIL RIGHTS ACT (PCR ACT), 1955

Why in News: The number of criminal cases registered under the Protection of Civil Rights Act (PCR Act), 1955, for offences related to “untouchability” has seen a decline, with pendency in courts remaining above 97% and nearly all disposed cases resulting in acquittals, according to the Union government’s 2022 annual report on the implementation of the law.

2022 Annual Report on the Implementation of the Protection of Civil Rights Act (PCR Act), 1955

- **Case Registration**
 - A total of 13 cases were registered under the PCR Act across the country in 2022.
 - This represents a decline from 24 cases in 2021 and 25 cases in 2020.
 - The number of cases registered under this law started declining after 1989, when the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989, was enacted.
- **Police Pendency and Chargesheets**
 - As of 2022, 51 cases were pending with police, including those from previous years.
 - Chargesheets were filed in only 12 of these cases.
 - Notably, none of the States or Union Territories that submitted data declared any area within their jurisdiction as “untouchability prone”.
- **Court Pendency and Disposals**
 - A total of 1,242 cases were pending trial under the Act at the court level.
 - Out of 31 cases disposed of by courts in 2022:
 - ◆ 30 cases ended in acquittals.
 - ◆ Only one case resulted in a conviction.
 - Review of previous annual reports showed that all 37 PCR Act cases disposed of by courts between 2019 and 2021 also ended in acquittals.
- **Inter-Caste Marriage Incentives**
 - The 2022 report documented that 18,936 inter-caste marriage couples were given financial incentives of ₹2.5 lakh each under the PCR Act across 21 States and Union Territories.
 - The States with the highest number of beneficiaries were:
 - ◆ Maharashtra (4,100)
 - ◆ Karnataka (3,519)
 - ◆ Tamil Nadu (2,217)
 - Several States did not provide data regarding inter-caste marriage incentives, including Bihar, Punjab, Uttar Pradesh, and Jharkhand.

- ◆ It wins **at least 3% of the total seats in the State Legislative Assembly**, or at least 3 seats, whichever is more, in a General Election to the State Legislative Assembly.
- ◆ It wins **at least 1 out of every 25 Lok Sabha seats** allotted to that state in a Lok Sabha General Election.
- ◆ It secures **at least 8% of the total valid votes** polled in a General Election to the Lok Sabha or the Legislative Assembly from the state
- **Unrecognised Political Parties**
 - Unrecognised political parties are those that are registered with the Election Commission of India but have **not secured enough votes or seats in assembly or general elections** to be recognised as a National or State party.
 - They include newly registered parties or those that have not contested elections since their registration.
 - While registered, **unrecognised parties do not enjoy all the benefits extended to recognised parties**. For instance, their candidates have to choose from a list of ‘free symbols’ offered by the ECI, which are not exclusive. They can nominate a maximum of 20 “Star Campaigners.”

Recommendations for De-registration of Inactive Political Parties

- The **Law Commission in its 255th report (2015)** had recommended amendments for de-registration of a political party if it fails to contest elections for 10 consecutive years.
- The **ECI in its memorandum for electoral reforms (2016)** had also suggested an amendment to the RP Act that would empower it to de-register a party. Apart from the exercise of de-listing RUPPs, these recommendations can also be implemented.

Conclusion

The delisting of non-functional Registered Unrecognised Political Parties (RUPPs) is a vital step towards ensuring transparency, accountability, and integrity in the electoral process. Strengthening the legal framework for de-registration, as recommended by the Law Commission and ECI, will help curb misuse of party registration and uphold the sanctity of democratic institutions.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the significance of de-registration of inactive political parties in the context of electoral reforms in India. What further steps can be taken to strengthen transparency and accountability in the party system? [250 Words] [15 Marks]

Protection of Civil Rights Act (PCR Act), 1955

- The Protection of Civil Rights Act (PCR Act), 1955, **formerly known as the Untouchability (Offences) Act**, was enacted to prescribe punishment for the preaching and practice of “untouchability” and for the enforcement of any disability arising therefrom.
- It **defines various manifestations of untouchability**, including in social and religious spheres, and outlines penalties for related offences.
- The Act applies to the whole of India. It also **mandates an annual review report with inputs from States and Union Territories regarding its implementation**.

Key Provisions of the PCR Act

- **Purpose and Scope**
 - The Act’s primary purpose is to define various manifestations of “untouchability” and prescribe penalties for offences related to it.
 - Civil rights are defined as any right accruing to a person by reason of the abolition of “untouchability” by Article 17 of the Constitution.
- **Prohibited Acts and Punishments**
 - **Enforcing religious disabilities:** Preventing a person from entering any public place of worship, or from worshipping or performing religious service, or using sacred tanks/wells/rivers/lakes, in the same manner as others of the same religion.
 - **Enforcing social disabilities:** This includes restrictions regarding:
 - ◆ Access to any shop, public restaurant, hotel, or place of public entertainment.
 - ◆ Use of utensils or articles in public places like restaurants, hotels, and dharamshalas.
 - ◆ Practice of any profession, trade, business, or employment.
 - ◆ Use of or access to public water sources (river, stream, well, tank, etc.), burial/cremation grounds, sanitary conveniences, roads, or any other public resort.
 - ◆ Use of or access to places maintained partly or wholly out of State funds or dedicated to public use.
 - **Other offences arising out of “untouchability”:**
 - ◆ Preventing the exercise of any civil right arising from the abolition of untouchability.
 - ◆ Molesting, injuring, annoying, obstructing, or boycotting any person for exercising such rights.
 - ◆ Inciting or encouraging the practice of “untouchability” by words, signs, or visible representations. This includes preaching or justifying untouchability on historical, philosophical, religious, or caste system grounds.
 - ◆ Insulting or attempting to insult a member of a Scheduled Caste.

- ◆ Committing any offence against the person or property as reprisal or revenge for exercising rights, punishable with imprisonment of not less than two years and also with fine if the offence exceeds two years imprisonment.
- ◆ Denying any right or privilege within a community or excommunicating a person for refusing to practice untouchability or for acting in furtherance of the Act’s objects.
- ◆ Unlawful compulsory labour: Compelling any person on the ground of “untouchability” to perform scavenging, sweeping, carcass removal, flaying animals, or similar jobs. This is punishable with imprisonment of not less than three months and not more than six months, and a fine. Compulsion includes a threat of social or economic boycott.

Way Forward for Enhanced Implementation

- **Strengthen Legal and Judicial Mechanisms**
 - Proactively establish and utilise special courts for the trial of offences under the Act, as mandated by the law.
 - Ensure the provision of adequate legal aid and facilities to persons subjected to disabilities arising out of “untouchability” to enable them to pursue their rights effectively.
 - Appoint and empower officers **specifically for initiating and supervising prosecutions** to improve charge-sheet filing and conviction rates.
- **Proactive Identification and Intervention:**
 - Actively identify and declare areas where persons are under any disability arising out of “untouchability” (“untouchability prone areas”) and adopt targeted measures for the removal of such disabilities.
 - Conduct periodic surveys of the working of the Act’s provisions to identify shortcomings and suggest measures for better implementation.
- **Improve Data Collection and Reporting:**
 - Ensure complete and timely submission of data from all States and Union Territories regarding all aspects of the Act’s implementation, including case registration, pendency, disposals, and inter-caste marriage incentives.
 - The Central Government should strengthen coordination efforts with State Governments to address data gaps and ensure consistent reporting.
- **Public Awareness and Sensitisation:**
 - Increase public awareness about the PCR Act and the civil rights it protects, ensuring that affected individuals are aware of their rights and avenues for redressal.
 - Promote and document the positive impact of inter-caste marriage incentives, ensuring that the benefits reach all eligible couples across the country.

Conclusion

Strengthening institutional mechanisms, enhancing legal awareness, improving data reporting, and ensuring active state participation are essential for upholding the civil rights enshrined under **Article 17 of the Constitution**.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Despite legal safeguards like the Protection of Civil Rights Act, 1955, untouchability continues in various forms in India. Critically examine the challenges in the implementation of the Act and suggest measures to ensure its effective enforcement. [250 Words] [15 Marks]

LAW ON PHONE TAPPING

Why in News: Recently, the Delhi High Court upheld the admissibility of phone-tapping evidence collected by the CBI in a corruption case, while the Madras High Court quashed a 2011 interception order by the Ministry of Home Affairs in another bribery case.

Key Details: The Delhi High Court Case

- The case related to the accused allegedly seeking to **secure a sub-contract for the redevelopment of the India Trade Promotion Organisation (ITPO) complex into an Integrated Exhibition-Cum-Convention Centre (IECC) through corrupt means.**
- In 2017, the **Ministry of Home Affairs (MHA) had authorised interception of his phone on the suspicion that he was attempting to bribe a public official.**
- Justice Amit Mahajan stated in his order that given the contract was for Rs 2,149.93 crore, “the economic scale of the offence, in the opinion of this Court, satisfies the threshold of public safety.”
- “**The threat posed by corruption cannot be understated.** Corruption has a pervasive impact on a nation’s economy and the same can impact anything from infrastructural development to resource allocation. Corruption by a public servant has far-reaching consequences as it serves to not only erode public trust and cast aspersions on the integrity of public institutions, but also renders the public at large susceptible and vulnerable by threatening the economic safety of the country,” the High Court said.

About the Madras High Court Case

- Justice Anand Venkatesh in his order stated that a “public emergency” must be construed narrowly. In the petitioner’s case, the MHA’s objective to deal with tax evasion would not qualify as a “public emergency” under **Section 5(2) of the Indian Telegraph Act, 1885**, the court said.
- The court also flagged in its order a press note that was released by the Press Information Bureau in April 2011, four months before the MHA order, saying that the law

does not allow the monitoring of conversations through phone-tapping “to merely detect tax evasion”.

- Additionally, **the court said that the phone-tap was unlawful since it did not comply with the procedural standards set by the Supreme Court in a 1997 ruling.**
- Once a phone-tap order is declared unlawful, any information gathered through the phone tapping cannot be treated as evidence in a court of law.

The law on phone tapping

The government’s powers to intercept communication is laid down in and circumscribed by three pieces of legislation.

- The **Indian Post Office Act, 1898** allows for the interception of communication through post;
- The **Indian Telegraph Act, 1885** is used for tapping voice calls; and
- The **Information Technology Act, 2000** governs the interception of WhatsApp messages, emails, etc.

The 140-year-old Telegraph Act was originally meant for intercepting telegrams, but over the years it has been expanded to include telephonic conversations. Section 5(2) of the Act states that both state and central governments can, “on the occurrence of any public emergency, or in the interest of the public safety”, authorise interception.

Note: The **Indian Telegraph Act, 1885** has been **repealed** and **Telecommunications Act, 2023** has been **enacted**.

Constitutional and Legal Grounds for Phone Surveillance in India

- In India, surveillance through phone-tapping must conform to the constitutional framework that protects fundamental rights such as the right to free speech (Article 19) and the right to privacy (Article 21). Any intrusion on these rights is permitted only under narrow constitutional grounds, as **outlined in Article 19(2). These include:**
 - Sovereignty and integrity of India
 - Security of the state
 - Friendly relations with foreign states
 - Public order
 - Preventing incitement to commit an offence
- **Section 5(2) of the Indian Telegraph Act, 1885** echoes these restrictions by allowing interception only during a public emergency or in the interest of public safety, and only when one of the above constitutional grounds is met. Courts have reiterated that such grounds must be interpreted strictly to prevent arbitrary surveillance and uphold citizens’ fundamental rights.

Supreme Court Guidelines and Legal Framework

- In its **landmark 1997 judgment in People’s Union for Civil Liberties vs Union of India**, the Supreme Court upheld the constitutional validity of Section 5(2) of the Indian Telegraph Act, 1885, but laid down strict

procedural safeguards for its application to prevent misuse of surveillance powers.

- **Key safeguards include:**
 - **Authorization:** An interception order can be issued only by the Home Secretary of the Central or State Government. This authority cannot be delegated to officers below the rank of Joint Secretary.
 - **Necessity Test:** The authorising authority must evaluate whether the required information could reasonably be acquired by other means, making interception a last resort.
 - **Review Mechanism:** A high-level review committee must assess the order within two months of issuance:
 - ◆ **At the central level:** Cabinet Secretary, Law Secretary, and Telecom Secretary.
 - ◆ **At the state level:** Chief Secretary, Law Secretary, and one other member (excluding the Home Secretary).
- These safeguards have also been **incorporated into Rule 419A(17) of the Indian Telegraph Rules**, reinforcing the need for procedural compliance and accountability in surveillance practices.
- This framework is crucial for **balancing national security interests with the protection of fundamental rights**, especially the right to privacy.

Conclusion

The contrasting judgments by the Delhi and Madras High Courts underline the need for clarity and consistency in how phone tapping laws are applied. While surveillance can be justified in certain cases, it must strictly follow constitutional limits and procedural safeguards to protect citizens' rights and maintain public trust.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the constitutional and legal framework governing phone tapping in India. In light of recent contrasting High Court judgments, critically examine the need for stronger safeguards to prevent misuse of surveillance powers. [250 Words] [15 Marks]

STRENGTHENING CRIMINAL JUSTICE THROUGH DNA EVIDENCE: SUPREME COURT GUIDELINES

Why in News: Recently, the Supreme Court laid down a set of procedural guidelines to standardise the management of DNA evidence.

Key Details

- These guidelines **aim to eliminate inconsistencies in procedures** involving one of the most sensitive forms of forensic evidence in criminal law.

- The development came after the **apex court acquitted a man**, who was on the death row for the murder of two individuals and the rape of one victim in Tamil Nadu in 2011.
- The SC set aside the conviction of the man, **citing that the prosecution's case was built entirely on DNA evidence, which was unreliable due to procedural deficiencies**. For instance, the post-mortem was conducted in the open, and key DNA samples lacked proper documentation records.
- The SC has also said the **absence of a uniform procedure in the collection and use of DNA evidence**, despite existing protocols, may have critically affected the investigation.

How does DNA evidence help in criminal investigations?

- DNA sampling is a key forensic tool used by investigation agencies **to identify individuals based on their unique genetic characteristics**. In criminal investigations, it helps link suspects to **biological evidence found at crime scenes** such as blood, semen, saliva, or hair.
- A DNA sample from the crime scene is compared with a reference sample taken from a suspect or victim. If **there is a match across sufficient genetic markers**, the evidence can be presented in court and plays a crucial role in securing convictions, ensuring justice, and preventing wrongful arrests.
- In the context of India's criminal justice system, the **use of DNA evidence is increasingly significant in improving investigation quality, upholding due process, and enhancing the accuracy of trials**.

About the Criminal Justice System

- Criminal justice is a **system of policies and organizations used by national and local governments to maintain social control, prevent and regulate crime**, and penalize those who break the law.
- Law enforcement like- **police and prosecutors, courts, defense attorneys, and local jails** and prisons are the central agencies charged with these duties, which oversee the procedures for arrest, charging, adjudication, and punishment of those found guilty.
- The need for **criminal justice administration arose from the state's decision to impose the high standard of human conduct** required to protect people and communities. It seeks to fulfill its protection goal through enforcement by reducing crime risk and apprehending, prosecuting, convicting, and sentencing those who violate rules and laws promulgated by society.

Supreme Court Guidelines on DNA Evidence Handling

The Supreme Court has issued guidelines to ensure uniformity and reliability in the collection, preservation, and processing of DNA and other biological materials across the country:

- **Collection:** Biological samples must be collected by trained personnel using protective gear. Samples should be sealed in tamper-proof containers and clearly labelled with essential case details.

- **Documentation:** Proper documentation, including signatures from the medical professional, investigating officer, and an independent witness, is mandatory to maintain transparency.
- **Transport and Storage:** Samples must be transported to forensic labs within 48 hours and stored under conditions that prevent degradation.
- **Access Control:** Samples cannot be opened, altered, or resealed without trial court approval before proceedings begin.
- **Chain of Custody:** A detailed log of every stage of handling and transfer must be maintained to ensure the integrity and admissibility of evidence in court.

Significance of the Supreme Court Guidelines on DNA Evidence

- The Supreme Court's guidelines are crucial for **ensuring a scientifically sound and tamper-proof process in the handling of DNA evidence**. They emphasize that the entire chain from collection to testing must be robust, eliminating risks of contamination, degradation, or tampering.
- By **standardising procedures across the country, the guidelines aim to bring uniformity in forensic practices, reduce inconsistencies in analysis and reporting, and enhance the credibility and admissibility of DNA evidence in criminal investigations and trials**. This marks a significant step toward strengthening the integrity of the criminal justice system.

Conclusion

The Supreme Court's guidelines on DNA evidence mark a **vital reform in India's criminal justice system**. By ensuring standardised, transparent, and scientifically sound procedures, these measures aim to improve the reliability of forensic evidence, prevent miscarriages of justice, and uphold the principles of due process and fair trial.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. In light of recent Supreme Court guidelines on DNA evidence, critically examine the role of forensic evidence in ensuring fair trials and strengthening India's criminal justice system. What challenges remain in its effective implementation? [250 Words] [15 Marks]

DIGITAL COLONIALISM

Why in News: Recently, the former Vice-President of India expressed concerns over the rising risk of digital colonialism.

Digital Colonialism

- "Digital colonialism" refers to the ways in which **wealthy nations and corporations use economic leverage, data extraction, and technological domination to exert control over less developed countries**.

- This digital hegemony is reminiscent of past imperialist tactics, despite being wrapped in the rhetoric of innovation and connectedness.

Colonialism is a system where a **powerful country controls and exploits a weaker territory, often through settlement, economic dominance, and cultural imposition**. It involves political rule, resource extraction, and suppression of local institutions, typically benefiting the coloniser at the colonised's expense.

Impact of Digital Colonialism

- **External dependency:** Countries give up control over data as they embrace foreign hardware, software, and cloud infrastructure. For instance, a **lot of developing countries depend on cloud services** from Global North-based businesses like Microsoft Azure, Google Cloud, and Amazon Web Services (AWS).
- **Killing local industries and innovation:** Dependency on outside sources **stifles local creativity**. For instance, **cab service platforms have taken over sizable portions of urban markets**, generating substantial commission fees while displacing local cab drivers.
- **Data privacy:** Instead of stealing minerals, today's digital colonists are stealing data. Foreign companies violate privacy and civil rights by **gathering vast amounts of behavioural and personal data without local regulation or profit-sharing**. One such instance is China's use of facial recognition technology in nations like Zimbabwe, where millions of photos are utilised to improve Chinese AI systems without the user's knowledge or consent.
- **Absence of Digital Sovereignty:** **Host states frequently find it difficult to obtain information about their own citizens** since important services are housed outside of national borders. For instance, treaties with the United States are necessary for countries to have lawful access to user data from websites such as Facebook and Google.
- **Cultural imperialism:** It is the practice of marginalising local cultures and promoting the worldview of developed nations **via social media and search engines**.
- **Foreign Control of Communication Infrastructure:** From mobile networks to underwater internet cables, nations frequently rely on foreign businesses to construct and maintain vital communication infrastructure. For instance, more than 70% of Africa's 4G networks have been constructed by the Chinese telecom behemoth Huawei.

Way Forward

- **Encourage domestic innovation and lessen reliance on imports:** Supporting local tech ecosystems and investing in digital infrastructure should be top priorities for developing countries. This entails supporting locally owned cloud services and data centres, encouraging the production of local content, and arguing for unrestricted internet access. For example, India Stack and ONDC (Open Network for Digital Commerce).
- **Promote Open-Source Solutions:** The dominance of

proprietary systems run by large corporations can be significantly diminished by open-source technology. In addition to ensuring that local organisations have complete control over the technology they use without the need for expensive licenses, this supports digital sovereignty.

- **Promote Robust Data Sovereignty Legislation:** Countries can stop exploitation, stop sensitive data from leaving the country, and assist countries in maintaining control over their digital resources by supporting policy initiatives that safeguard data sovereignty. For example, adoption of the Digital Personal Data Protection (DPDP) Act, 2023, which protects personal data.
- **Engage in Capacity Building and Skills Transfer:** Countries can lessen their dependency on foreign knowledge and technology by fostering local talent through digital literacy and assisting communities in creating self-sufficient and sustainable digital ecosystems.

Conclusion

Digital colonialism is a silent yet powerful threat to national sovereignty, innovation, and cultural identity. To counter it, nations must assert control over their digital spaces by fostering local technologies, **enforcing strong data laws, and building inclusive, ethical digital ecosystems that serve their people**

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the impact of digital colonialism on data privacy, national security, and local innovation. Suggest a roadmap for achieving digital sovereignty in the Global South. [250 Words] [15 Marks]

50 YEARS OF THE OFFICIAL LANGUAGE DEPARTMENT

Why in News: Recently, the Department of Official Languages celebrated its golden jubilee.

Key Details

- The Department of Official Language is in charge of **carrying out the Official Languages Act of 1963's provisions** as well as the **Constitution's provisions pertaining to official languages**.
- It was established as an **independent department in the Ministry of Home Affairs** department in June 1975.
- The department is **led by the Minister of Home Affairs**. There are **four main offices within the department**.
 - Central Hindi Training Institutes
 - Central Translation Bureau
 - Regional Implementation Offices
 - Committee of Parliament on Official Language
- **Bharatiya Bhasha Anubhag platform:** Introduced by the

Department of Official Language on June 6, 2025, to make it easier to translate between Hindi and various regional languages.

Institutional Measures for Promotion and Implementation of Hindi

- The Department of Official Language **sets annual goals for the volume of correspondence conducted in Hindi**.
- Established in 1976, the **Parliament Committee on Official Language reports to the President** on the advancements made in Hindi usage.
- A **Town Official Language Implementation Committee** is set up in each city with more than ten central government offices, and government workers who write books in Hindi are given cash prizes.
- To implement Hindi in their offices, **all PSUs and Central Government offices must set up Hindi Cells**.
- To promote Hindi, the **department organises a number of events all year long**.

Hindi Diwas

- Every year on **September 14**, Hindi Diwas is observed to commemorate the official designation of Hindi as the official language of the Indian Union government.
- **Hindi became India's official language on September 14, 1949**.

The term "**official language**" denotes the language(s) employed by the government for administration, communication, and official records.

Constitutional Provisions Relating to Language in India

- **Article 120: Business in Parliament** shall be transacted in **Hindi or in English**; however, the chairperson of the house may permit any member who cannot adequately express himself in Hindi or in English to **address the House in his mother tongue**.
- **Article 210: Business in the legislature** shall be transacted in **Hindi or in English**; however, the chairperson of the house may permit any member who cannot adequately express himself in Hindi or in English to **address the house in his mother tongue**.
- **Article 343: The official language of the Union shall be Hindi in Devnagari script.** The form of numerals to be used for the official purposes of the Union shall be the international form of Indian numerals.
- **Article 346:** If two or more states agree that the Hindi language should be the official language for communication between such states, that language may be used for such communication.
- **Article 348:** The **Governor of a State may, with the previous consent of the President, authorise the use of the Hindi language or any other language used for any official purposes of the State in proceedings in the High Court having its principal seat in that State:**
- **Article 350:** Every person shall be entitled to **submit a representation for the redress of any grievance to any officer**

or authority of the Union or a State in any of the languages used in the Union or in the State, as the case may be.

- **Article 350A:** It shall be the endeavour of every state and of every local authority within the state to provide adequate facilities for instruction in the mother tongue at the primary stage of education to children belonging to linguistic minority groups.
- **Article 350B:** It shall be the duty of the Special Officer to investigate all matters relating to the safeguards provided for linguistic minorities under this Constitution.
- **Article 351:** It shall be the duty of the Union to promote the spread of the Hindi language and to develop it so that it may serve as a medium of expression for all the elements of the composite culture of India.
- **Eighth Schedule of the Indian Constitution:** The Eighth Schedule of the Indian Constitution recognizes 22 official languages. These languages are: Assamese, Bengali, Bodo, Dogri, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Maithili, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Santhali, Sindhi, Tamil, Telugu, and Urdu.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the Department of Official language:

1. It is administered by Ministry of Home Affairs
2. Recently, Bharatiya Bhasha Anubhag platform was established in Department of Official language

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)

PUBLIC GAMBLING ACT, 1867

Why in News: The Enforcement Directorate (ED) has registered an Enforcement Case Information Report (ECIR) against 29 individuals, including actors, television hosts, social media influencers, and YouTubers, for allegedly promoting illegal betting applications in breach of the Public Gambling Act, 1867.

Key Details

- **Action Initiated:** The ED has registered an Enforcement Case Information Report (ECIR) against 29 individuals, including actors, television hosts, social media influencers, and YouTubers. This action falls under the Prevention of Money Laundering Act (PMLA).
- **Origin of the Case:** The probe stems from at least five separate **First Information Reports (FIRs) filed by state**

police in Telangana and Andhra Pradesh. These FIRs were registered in Panjagutta, Miyapur, Cyberabad, Suryapet, and Visakhapatnam.

- **Core Allegation:** The case revolves around **alleged paid promotions for platforms suspected of large-scale money laundering.** The ED believes these individuals received significant financial compensation to endorse applications that masqueraded as skill-based games but allegedly facilitated gambling.
- **Investigation Scope:** Investigators will focus on **tracing the proceeds of crime and understanding how much money may have been laundered** through these promotional deals.
 - The ED is also collecting additional complaints and FIRs to expand the scope of the investigation. They are expected to assess each individual's level of knowledge and intent before drawing conclusions about potential criminal liability.

PUBLIC GAMBLING ACT, 1867

- **Enactment Date:** The Act was enacted on January 25, 1867.
- **Original Application:** It was originally intended for territories such as the United Provinces, East Punjab, Delhi, and the Central Provinces.
- **Extension Power:** Sections 13 and 17 of the Act extend to the whole of the "said States," and state governments have the authority to extend other sections to specific cities, towns, suburbs, railway stations, houses, and places within a three-mile radius of such a station, by official notification.
- **Common gaming-house:** Defined as any house, walled enclosure, room, or place where cards, dice, tables, or other instruments of gaming are kept or used for the profit or gain of the person owning, occupying, using, or keeping it. This profit can be from a charge for using the instruments or the place itself, or otherwise.
- **Prohibited Acts:** This applies to owners or occupiers who open, keep, or use any premises as a common gaming-house, or knowingly permit it to be used as such by others. It also covers those who manage, assist in conducting business, or advance money for gaming in such places.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding the Public Gambling Act, 1867 is correct?

- (a) It legalises all forms of gambling across India.
(b) It prohibits the operation of public gambling houses and penalises the offenders.
(c) It is applicable uniformly across all Indian states without exception.
(d) The Act was enacted to promote online gaming and casinos.

Answer: (b)

MULTIPOLAR WORLD ORDER

Why in News: India will play an increasingly important role globally as the world inexorably transitions into multipolarity, Singaporean Foreign Minister Vivian Balakrishnan said after holding talks with External Affairs Minister S Jaishankar.

Key Details

- Singapore is a key partner in **India's Act East Policy**. During External Affairs Minister S. Jaishankar's meeting with his Singaporean counterpart Vivian Balakrishnan, both sides **reaffirmed their Comprehensive Strategic Partnership**, established during PM Modi's visit in September 2024.
- Discussions focused on **strengthening cooperation in investments, industrial parks, semiconductors, infrastructure, skill development, and connectivity**.
- The two nations will hold the third India-Singapore Ministerial Roundtable in New Delhi soon.
- Both sides also exchanged views on ASEAN, the Indo-Pacific, and global developments.

Note: Detailed coverage of India-Singapore relations is available in the January issue of the magazine.

<https://chahalacademy.com/assets/pdf/jan-2025-current-affairs-magazine.pdf>

Polarity in International Relations

- **Unipolarity:** A single state holds preponderant power and faces no credible rival.
- **Bipolarity:** Two roughly equal great powers dominate, structuring alliances and spheres of influence.
- **Multipolarity:** Three or more centres of significant power coexist, each capable of shaping global outcomes.

Rise of a Multipolar Global System

- **Historical Evolution:** The post-Cold War era saw a unipolar moment under U.S. hegemony, and since the early 21st century, power has gradually diffused.
 - In 2025, emerging markets accounted for roughly 41% of global GDP, while BRICS nations alone contributed approximately 23% of global trade and 43% of global oil production, according to World Economics and EY India.
 - **Technological competitiveness:** China's advances in

5G and AI, India's IT prowess, and Europe's green technologies have diversified innovation hubs.

- **Institutional diversification:** New forums such as BRICS+, the Asian Infrastructure Investment Bank, and expanded G20 membership reflect broader decision-making.
- **Key Drivers of Multipolarity:**
 - **Emerging Powers:**
 - ◆ **China:** Second-largest economy by both nominal GDP and GDP (PPP), Belt and Road global footprint.
 - ◆ **India:** Rapid growth, digital services leader, demographic dividend.
 - ◆ **Brazil & Russia:** Regional heavyweights with resource leverage.
 - **Regional Organizations:**
 - ◆ ASEAN's centrality in Southeast Asia.
 - ◆ African Union's growing economic integration.
 - **Global South Assertion:**
 - ◆ Growing demand for structural reforms in the IMF, World Bank, and UN Security Council.
 - ◆ Emphasis on sovereign equality and development agendas.
- **Challenges and Trajectories:**
 - **Fragmentation Risks:** Multiple "orders" may impede collective responses to crises.
 - **Power Competition:** U.S.-China rivalry and Russia's Eurasian ambitions fuel regional tensions.
 - **Opportunities for Resilience:** Issue-based coalitions (e.g., climate pacts, health security) can bridge poles.

India's Role in a Multipolar World Order

- **Strategic Autonomy and Multi-Alignment:**
 - **Non-Alignment to Multi-Alignment:** From NAM leadership during the Cold War to pragmatic engagements across blocs.
 - **Issue-Based Partnerships:**
 - ◆ QUAD (Australia, India, Japan, U.S.) for Indo-Pacific security.
 - ◆ BRICS+ and G20 for economic governance reform.
 - **Soft Power Outreach:** Vaccine diplomacy, tech exports, cultural initiatives in Africa and Latin America.

- **Key Domains of Engagement:**
 - **Security and Defence:**
 - ◆ India has deepened U.S. defence ties without formal alliances.
 - ◆ Joint exercises with Russia, France, and Japan.
 - **Economic Diplomacy:**
 - ◆ India provides leadership in the G20 on debt relief and sustainable finance.
 - ◆ Act East Policy: partnerships with ASEAN and regional supply-chain diversification.
 - **Global Governance Reform:**
 - ◆ Campaign for a UN Security Council permanent seat.
 - ◆ Advocacy for inclusive climate finance and debt restructuring for the Global South.
- **India as a Voice of the Global South:**
 - Champions debt relief, equitable vaccine access, and climate justice at multilateral fora.
 - Balances economic interdependence with China against security imperatives along the LAC.
 - Leverages G20 and SCO presidencies (2023) to showcase development partnerships.

Conclusion

The transition to a multipolar world order reflects the **diffusion of power** from traditional Western hegemony to a wider set of actors, driven by economic growth in emerging markets, technological diversification, and institutional pluralism. While multipolarity offers opportunities for more representative and balanced global governance, it also poses risks of fragmentation and intensified rivalry. For India, this **shift provides strategic space to pursue multi-alignment, champion Global South priorities,** and enhance its role in shaping a more equitable international system.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. What are the primary drivers and key characteristics of the emerging multipolar world order? How does multipolarity reshape global power dynamics and international relations more broadly? [250 words] [15 marks]

17TH BRICS SUMMIT

Why in News: Recently, Prime Minister Shri Narendra Modi participated in the 17th BRICS Summit in Rio de Janeiro, Brazil.

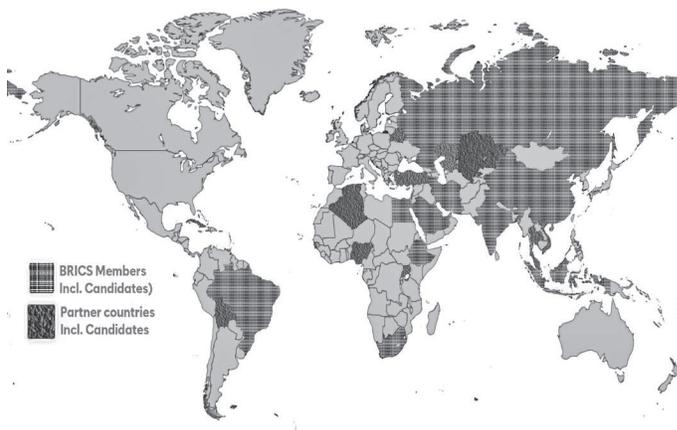
Key Highlights of the 17th BRICS Summit Joint Declaration

- **Joint Declaration on Global South Cooperation:** The Joint Declaration of the 17th BRICS Summit was signed by

the participating nations in Rio de Janeiro. The document, titled **“Strengthening Global South Cooperation for More Inclusive and Sustainable Governance,”** reaffirms the group’s dedication to upholding international law, promoting multilateralism, and working towards a more just world order.

- **Multilateralism:** The member nations of the BRICS reaffirmed their dedication to **uphold international laws**, including the goals and **tenets of the UN Charter**, as well as to multilateralism. Additionally, the document urges developing nations—especially those in Africa, Latin America, and the Caribbean—to participate more actively in international decision-making processes and institutions.
- **Finance:** The 11 nations underlined the necessity of **raising World Bank and IMF shareholdings of emerging and developing nations** in the financial sphere.
- **Artificial Intelligence:** The nations acknowledge in their joint declaration that artificial intelligence (AI) offers a singular chance to propel advancements towards a more prosperous future.
- **Climate change:** The countries acknowledged the **Tropical Forest Forever Fund (TFFF)** as a novel way to raise long-term funding for the conservation of tropical forests in advance of COP30, and they encouraged ambitious contributions from possible partners.
- **Promoting Peace and International Security:** The current trend of rapidly increasing military spending worldwide at the expense of sufficient funding for emerging nations’ development worries the leaders.
- **Health:** Bolstering international solidarity and collaboration in order to strengthen global health governance.

BRICS



- The **eleven largest emerging economies** in the world, collectively known as BRICS, account for about **23% of global trade, 36.7% of global GDP (in PPP terms), and 45.2% of the world's population.**
- In 2009, the first BRIC Summit took place in **Yekaterinburg, Russia.**

- At the **2010 BRIC Foreign Ministers’** meeting in New York, it was decided to turn BRIC into BRICS by **adding South Africa**.
- **Egypt, Ethiopia, Iran, and the United Arab Emirates** became **full members of BRICS on January 1, 2024**, marking a further expansion of the organisation.
- **Indonesia became a full member of the BRICS in January 2025**, while Belarus, Bolivia, Kazakhstan, Cuba, Malaysia, Nigeria, Thailand, Uganda, and Uzbekistan were admitted as partners.
- The two ways that BRICS cooperation works are through **meetings between leaders and ministers to consult on topics of shared interest** and through **meetings between senior officials in a variety of fields**, such as trade, finance, health, education, science and technology, agriculture, environment, energy, labour, disaster management, anti-corruption, anti-drugs, etc.

EXPECTED QUESTION FOR UPSC CSE

Prelim MCQ

Q. Consider the following statements:

1. Indonesia became latest member to join BRICS
2. The 17th BRICS summit was held in Brazil
3. BRICS consists of 11 member countries

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

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

Answer: (c)

KALADAN MULTI-MODAL TRANSIT TRANSPORT PROJECT (KMMTTP)

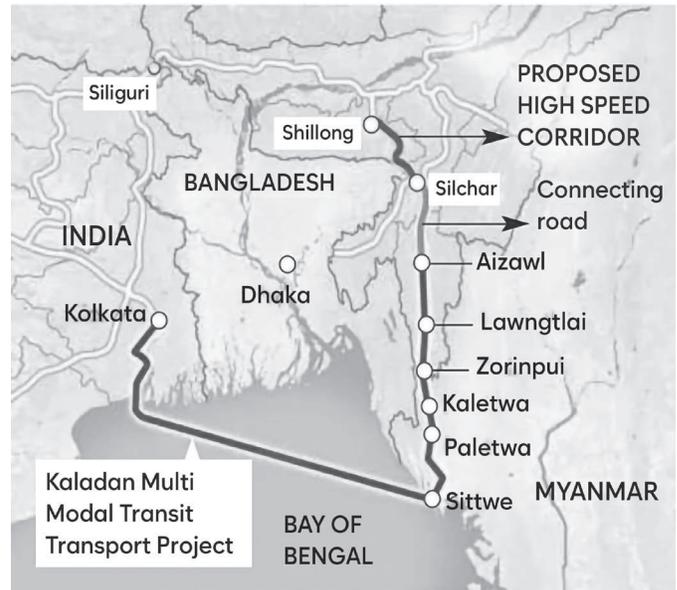
Why in News: According to the Union Minister of Shipping, the ambitious Kaladan project between India and Myanmar, which is aimed at reducing the Northeast’s distance from the rest of the country, will be operational by 2027.

About the Project

- The Kaladan Multi-Modal Transit Transport Project (KMMTTP) is a **significant joint initiative between India and Myanmar**.
- It was designed to establish a **multi-modal transport route** for shipping cargo from India’s eastern ports to Myanmar and then to the North-Eastern part of India through Myanmar.
- **Components**
 - **Sea Route (Kolkata to Sittwe):** This 539-kilometre stretch connects Kolkata seaport in India to Sittwe Port in Myanmar via the Bay of Bengal. This part of the project has been completed and is operational.
 - **Inland Waterway (Sittwe to Paletwa):** This

158-kilometre section navigates the Kaladan River from Sittwe to Paletwa in Myanmar’s Chin state. It involves dredging the river and constructing jetty facilities at Paletwa to handle 300-tonne barges. This river component has also been completed.

- **Roadway (Paletwa to India-Myanmar Border):** This involves the construction of a road from Paletwa to Zorinpui, located on the India-Myanmar border in Mizoram.



Importance of the Project for India

- **Alternate Access to Northeast:** The project provides a crucial alternate access route to India’s North-Eastern region. This is vital as the region’s current primary access is through the narrow Siliguri Corridor, which poses significant economic and strategic challenges and could be vulnerable to destabilisation.
- **Economic Development and Integration:** It is expected to significantly contribute to the economic development of the North-Eastern States by opening up a sea route for products. The project will promote economic, commercial, and strategic links between India and Myanmar.
- **Reduced Distance and Travel Time:** The project is anticipated to shorten the distance between Aizawl and Kolkata by 700 km.
- **Strategic Autonomy and Reduced Dependency on Bangladesh:** The project has gained increased importance, particularly amid a downturn in India’s relationship with Bangladesh.
 - It allows **cargo to reach the Northeast from Vizag and Kolkata** without relying on transit through Bangladesh, which is crucial as previous plans to use Bangladeshi routes have stalled due to a change in the Bangladeshi government.
 - The project ensures India’s continued connectivity to its Northeast, bypassing potential geo-strategic challenges in the region.

in Uganda, Entrepreneurship Development Centres in Rwanda, and various IT and training centres demonstrate India's commitment to education and capacity-building, aligning with AU's focus on educating Africans for the 21st century.

- **Health Initiatives:** India provided around **150 tonnes of medical aid to 32 African countries during the COVID-19 pandemic** and was a major beneficiary of India's 'Vaccine Maitri' initiative. India also provides medical equipment and cancer treatment machines.
- **Infrastructure Development:** India has completed 206 projects in 43 African countries, with 65 more underway and 81 in preparation stages, covering drinking water, irrigation, power plants, and railway infrastructure.
- **Security and Maritime Cooperation:** Defence relations are strong, with African Defence Ministers meeting in India and India contributing to setting up Defence Academies in **Nigeria, Ethiopia, and Tanzania**. factually fifth, but remove this statement as it has no clarity. India also works with African nations to keep oceans open and free for the benefit of all nations.
- **Global Governance and Multilateralism:** India advocates for greater African representation in global institutions, including the **UN Security Council**, in line with the **Ezulwini Consensus**. During its G20 Presidency, India supported granting full membership to the African Union.

Emerging Challenges in the Relationship

- **Inadequate Transport Infrastructure:** Colonial legacies have resulted in transport networks that primarily connect resource-rich regions to ports, creating stronger links with other continents than within Africa, hindering a unified market across the continent.
- **Food Security Challenges:** Despite agriculture constituting 20% of Africa's GDP and employing more than half of its population, **Africa struggles with food security, spending US\$27 billion on cereal imports**. Most food production comes from smallholder farmers.
- **Broader African Difficulties:** Africa continues to deal with challenges such as debt, internal strife, political instability, and combating the effects of climate change.
- **Global Health Inequities:** The COVID-19 pandemic highlighted issues like vaccine apartheid and travel restrictions that disproportionately affected Africa, underscoring the need for stronger global partnerships.
- **Low Intra-African Trade:** Despite the launch of the **African Continental Free Trade Area (AfCFTA) in 2021**,

intra-African trade was merely 13.2% in 2022, 14.9% in 2023 and 15.5% in 2024. The agreement aims to boost this significantly but faces implementation hurdles.

Way Forward

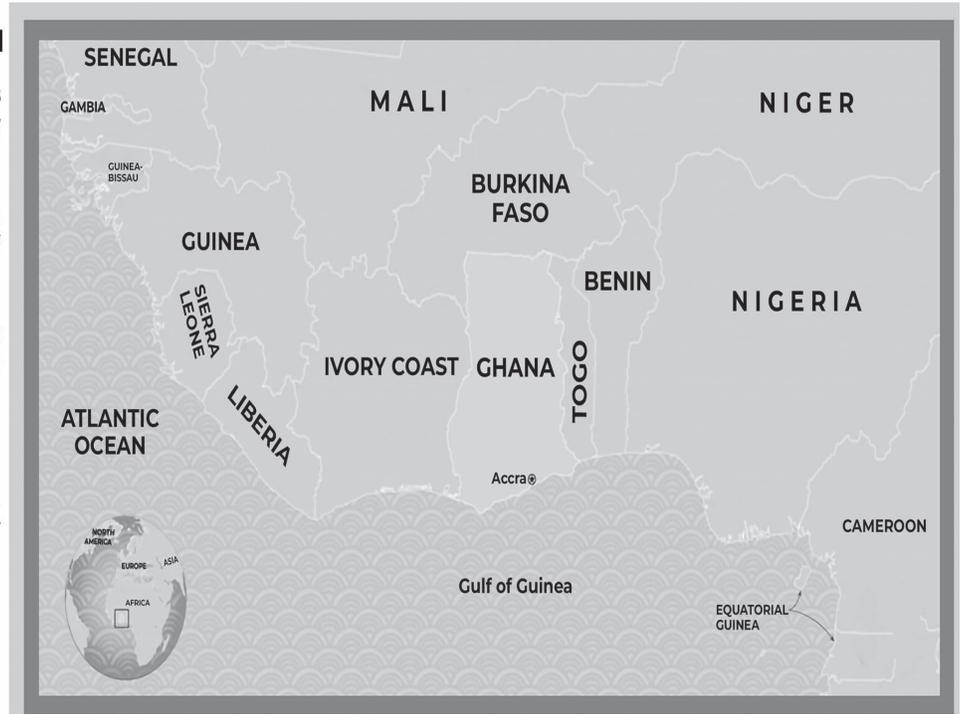
- **Supporting AfCFTA Implementation:** India is well-equipped to assist African nations in implementing and improving the AfCFTA, given its experience with similar challenges in **boosting trade and economic growth**. This includes boosting intra-African trade by eliminating trade barriers.
- **Investment in Transport Infrastructure:** India and AfCFTA signatories could work together to boost investment in transport infrastructure to overcome colonial legacies and facilitate a unified market.
- **Advocating Agri-Tech Initiatives:** India can leverage its vast experience to advocate for agri-tech initiatives for African smallholder farmers, promoting modern technologies like drones and AI for production, yield prediction, and tracking soil and crop health.
- **Digital Public Goods and Unified Markets:** India can assist Africa in implementing initiatives like the Indian National Agriculture Market Scheme (e-NAM) to create a unified continental agricultural market. Services like India's DigiLocker could help streamline trading documents.
- **Green Growth and Sustainable Development:** India and Africa are pursuing a "Clean & Green" partnership, particularly through the International Solar Alliance and focusing on the Blue Economy.
- **Regional Connectivity:** Initiatives like the Africa Asia Growth Corridor (AAGC), involving India and Japan, aim to promote regional connectivity and integration, aligning with Africa's Agenda 2063.
- **Continued Diplomatic Expansion and People-to-People Ties:** India is expanding its diplomatic presence, with 46 missions in Africa. People-to-people relations are a crucial dimension, with India extending e-Visa facilities to 33 African countries and over 23000 in 2021 and around 40,000 in 2024 African students studying in India.

Conclusion

India-Africa relations, grounded in shared history and solidarity, are evolving into a **comprehensive partnership covering trade, infrastructure, agri-tech, digital innovations, green energy, and people-to-people ties**. By enhancing connectivity, supporting the AfCFTA, and promoting sustainable development, the partnership can accelerate Africa's economic integration while ensuring inclusive and resilient growth for both regions.

Country in News: Ghana

- Ghana is located in West Africa and is sandwiched between Cote d'Ivoire (Ivory Coast) and Togo.
- The northern border is the country Burkina Faso and the southern border is the Gulf of Guinea.
- The landscape consists mainly of plains and low plateaus covered by rain forests in the west and Lake Volta in the east.
- **Official Name:** Republic of Ghana
- **Form of Government:** Constitutional Democracy
- **Capital:** Accra
- **Currency:** Cedi



EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. What are the core elements of India's strategy for strengthening Africa's economic integration? What specific areas will benefit most from enhanced India-Africa collaboration? [250 words] [15 marks]

INDIA-ARGENTINA RELATIONS

Why in News: Recently, India and Argentina agreed to deepen cooperation in critical minerals, shale gas, defence manufacturing, space, telemedicine, digital health, and information technology following high-level talks between Prime Minister Narendra Modi and President Javier Milei.

Key Highlights

- **Strengthening Trade and Economic Ties:** Both nations recently agreed to diversify the India-Argentina trade basket, aiming to expand bilateral trade beyond traditional sectors and strengthen overall economic cooperation. Argentina is currently undergoing major economic reforms, creating opportunities for economic synergy with India.
- **Energy and Critical Minerals Cooperation:** Argentina holds the world's second-largest shale gas and fourth-largest shale oil reserves, making it a potential long-term energy partner for India. Argentina's rich reserves of critical minerals like lithium, copper, and rare earths are significant for India's clean energy transition and industrial growth. India's public sector JV, KABIL, has

already secured concessions in Argentina for mineral exploration.

- **Defence and Space Sector Collaboration:** India offered its expertise in defence manufacturing and space technology, including satellite development, launch services, and capacity building. Both countries aim to explore cooperation in security, disaster management, and defence production.
- **Healthcare and Digital Cooperation:** India proposed collaboration in telemedicine, digital health solutions, and cost-effective healthcare delivery, leveraging its experience in Digital Public Infrastructure (DPI). Indian digital solutions and IT expertise can help Argentina improve service delivery and inclusion.
- **Broader Strategic Engagement:** The leaders reiterated commitment to shared democratic values, forming a basis for strategic alignment.

Significance for India

- Strengthening ties with Argentina supports **India's energy security, mineral supply chains, and strategic presence in Latin America.**
- The partnership complements India's efforts to **diversify global partnerships** amid shifting geopolitical dynamics.
- Engagement with Argentina also opens avenues for **India's technology exports, health diplomacy, and infrastructure collaborations** in a rapidly reforming economy.

India-Argentina Relations

- India-Argentina diplomatic relations were elevated to the level of Strategic Partnership during the State Visit to India of the then President of Argentina, in February 2019. Both countries completed 75 years of their diplomatic relationship on 3 February 2024. Several events were organised during 2024 to commemorate the 75 years of establishment of bilateral relations.
- **Economic Relations:** India-Argentina bilateral trade more than doubled in three years from 2019 to 2022, peaking at USD 6.4 billion in 2022. In both 2021 and 2022, India was Argentina’s fourth-largest trading partner. In 2024, with improved weather conditions and a much more stable economy under the new government, trade regained its momentum, rising by 33% to USD 5.2 billion.
- **Technical and Development Cooperation:** India offers 40–45

ITEC scholarships annually to Argentina for capacity-building programs, with over 300 ITEC alumni to date. Argentina has also participated in India’s space training initiatives, including ISRO’s UNNATI programme and space technology courses conducted by IIT Kanpur.

- **Cultural Relations:** The admiration for and impact of Indian culture, yoga, meditation, philosophy, spiritualism, dance and music is very visible. Indian organizations such as Art of Living, Brahmakumari, Rama Krishna Mission, Shri Sathya Sai Baba, Bhakti Marga, Sivananda Yoga and ISKCON among others have extraordinary followings.
- **Indian Community:** There are around 2600 NRIs / PIOs in Argentina. Majority of these live in the capital city of Buenos Aires, including professionals working with Indian companies and multinational corporations such as Cognizant Technologies, IBM, JP Morgan, etc.

ABOUT ARGENTINA

- Argentina is a country in South America, covering most of the continent’s southern portion.
- It is the eighth-largest country in the world by area.
- Its land area is larger than Mexico and the U.S. state of Texas combined.
- **Boundaries:**
 - ▷ **West** - bordered by Chile
 - ▷ **North** - shares borders with Bolivia, Paraguay, Brazil, and Uruguay
 - ▷ **East** - has a maritime boundary with the Atlantic Ocean
- Cerro Aconcagua is the highest peak in South America.
- Major rivers include the Río de la Plata and the Paraná river mouth.
- Argentina claims a portion of Antarctica.
- It also claims several islands in the South Atlantic, including the Falkland Islands (Islas Malvinas), which are currently British-ruled.



EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. India’s partnership with Argentina offers a strategic opportunity for deeper engagement in sectors like energy security, digital cooperation, and critical minerals. Discuss the significance of India-Argentina relations in the context of India’s broader foreign policy objectives. [250 Words] [15 Marks]

INDIA-BHUTAN REVIEW PARTNERSHIP DEVELOPMENT

Why in News: Recently, India and Bhutan carried out a “full spectrum” review of projects being implemented with New Delhi’s support of ₹10,000 crore for 2024-2029.

Indo-Bhutan Relationship

- **Beginning of Relationship:** The 1949 Treaty of Friendship and Cooperation, which was updated in February 2007, serves as the fundamental foundation for India-Bhutan relations.
- **Partnership for Development:** India and Bhutan have worked closely together to advance socioeconomic development in accordance with the goals of the Bhutanese government and people since the country’s first Five Year Plan in 1971.
- **Commerce and Trade:** As a source of imports and a destination for exports, India has continuously been Bhutan’s top trading partner. In fiscal year 2024-25, India and Bhutan’s total trade volume was approximately \$1777.44 million, according to the Embassy of India in Thimphu. The India-Bhutan Agreement on Trade,

Commerce, and Transit grants Bhutan duty-free transit of goods to and from third countries and creates a free trade regime between the two nations.

- **Investments:** India continues to be the **top source of foreign direct investment (FDI) in Bhutan**, accounting for more than half of all FDI.
- **Currency Swap Facility:** In November 2022, the RBI and the Royal Monetary Authority (RMA) signed a **US\$ 200 million INR equivalent agreement under the SAARC currency swap arrangement**. Bhutan has benefited from INR 1500 Cr under the new Framework on Currency Swap Arrangement (FCSA) 2024–2027 for SAARC countries, which the RBI launched.
- **Fintech:** The **RuPay Card** was introduced in Bhutan in two stages. Phase I began in 2019 and allowed payments to be made in Bhutan with RuPay cards that were issued by Indian banks. In 2020, Phase II was introduced to allow RuPay cards issued by Bhutanese banks to be accepted as payment methods in India. To encourage cashless transactions between the two countries, India's **Bharat Interface for Money (BHIM) app was introduced in Bhutan in 2021**.
- **Collaboration in energy:** In the field of hydropower, the two nations have a long history of mutually beneficial cooperation. The Indian government has so far built four large **hydroelectric projects (HEPs) in Bhutan, totalling 2136 MW**.
- **Space sector:** The first satellite jointly developed by India and Bhutan, the **India-Bhutan SAT**, was developed by the two countries and launched on November 26, 2022, from ISRO's Satish Dhawan Space Centre in Sriharikota.
- **Cross-border connectivity:** An **Immigration Check Post was established at Darranga** to make it easier for people, including citizens of third countries, to travel between India and Bhutan.
- **Education and Capacity Building:** The **Ambassador's Scholarship is given to over 1000 Bhutanese students** enrolled in Indian universities and institutions each year.
- **India-Bhutan Cultural Connect Foundation:** Through initiatives in the fields of education, culture, science, and technology, the Foundation fosters better communication between the people of India and Bhutan.
- **Pilgrimage:** Many Bhutanese pilgrims **visit Buddhist sites in India**, including Bodhi Gaya, Rajgir, Nalanda, Sikkim, Udayagiri, and Sarnath.

Bhutan' Significance for India

- **Geostrategic significance:** Bhutan is vital to India's national security due to its advantageous location, which **shares borders with both China and India**. Bhutan also **offers the northeastern states of India security guarantees**.
- **Environmental cooperation:** Because both countries **share the Himalayan ecosystem**, they can collaborate

on conservation, disaster relief, and climate change adaptation.

- **Cultural Ties:** India and Bhutan share a strong cultural bond. India's culture has a significant influence on Bhutan's religion, language, and customs.
- **Hydropower cooperation:** The foundation of bilateral economic cooperation is mutually beneficial hydropower cooperation with Bhutan, which **offers clean power to India and economic prosperity to Bhutan**.
- **Monsoon Impact & Flood Management:** In order to safeguard Assam and Bengal during monsoon seasons, **Bhutan gives India real-time river flow data and early flood warnings**.
- **Anti-Insurgency Shield:** To combat Northeast insurgents who sought refuge in Bhutan, India and Bhutan have carried out cooperative operations, such as **Operation All Clear in 2003**.

Conclusion

India-Bhutan ties exemplify **trust, development, and shared strategic interests**. Deepening cooperation in emerging sectors will strengthen regional stability and uphold India's 'Neighbourhood First' policy.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. "India-Bhutan relations represent a successful model of regional cooperation rooted in trust, mutual benefit, and strategic convergence." Examine the evolving contours of this relationship with reference to development partnership and geostrategic significance. [250 words] [15 Marks]

INTERNATIONAL MARITIME ORGANISATION (IMO)

Why in News: Recently, India participated in the 134th season of the Council of International Maritime Organisation (IMO).

Key Details

- India urged the International Maritime Organisation (IMO) to **conduct a thorough investigation and global review of all maritime incidents involving foreign-flagged container ships operating in Indian waters**.
- **Significant safety concerns have been raised by the recent maritime incidents**, which are the result of undeclared hazardous cargoes as well as structural and stability problems.
- India emphasised the necessity of strengthening international regulations pertaining to **lithium-ion battery packaging, declaration, storage, and monitoring, as well as International Maritime Dangerous Goods (IMDGs)**.
- In order to promote the development of international

military strikes on Pakistan and Pakistan-occupied Jammu & Kashmir.

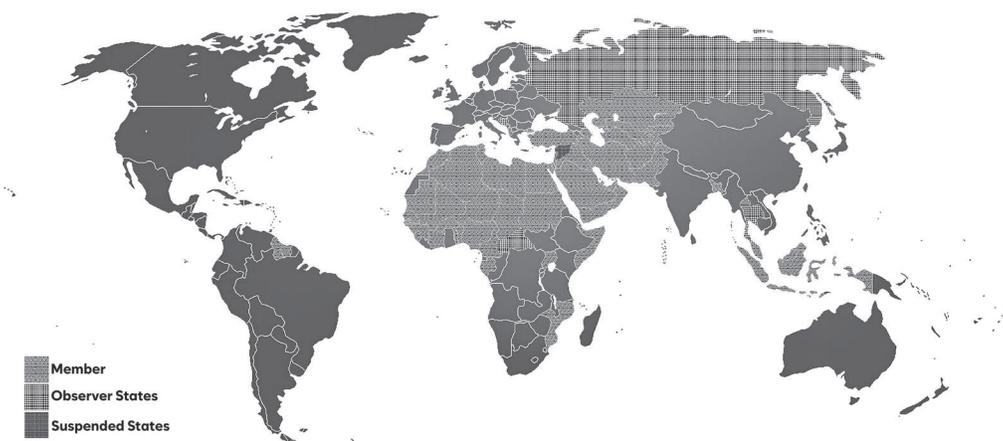
- The OIC urged all sides to exercise restraint and emphasised the necessity of respecting existing treaties, including the Indus Waters Treaty (IWT) between India and Pakistan.

Organisation of Islamic Cooperation (OIC)

- The Organisation of Islamic Cooperation (OIC) presents itself as “The Collective Voice of The Muslim World”.
- It is notable as the second largest organisation after the United Nations, **boasting a membership of 57 states spread over four continents.**
- The headquarters of the **Organisation of Islamic Cooperation (OIC) is located in Jeddah, Saudi Arabia.**
- **Overview and Mission:** The OIC endeavors to safeguard and protect the interests of the Muslim world. Its mission also includes promoting international peace and harmony among various people of the world.

Founding and Evolution

- **Establishment:** The OIC was established upon a decision made at a historical summit in Rabat, Kingdom of Morocco, on 25 September 1969.
- **Catalyst:** This establishment followed the arson of Al-Aqsa Mosque in Jerusalem.
- **Secretariat:** In 1970, the first meeting of the Islamic Conference of Foreign Ministers (ICFM) in Jeddah led to the decision to establish a permanent secretariat in Jeddah, headed by the organisation’s Secretary General.
- **Charter:** The first OIC Charter was adopted by the 3rd ICFM Session in 1972. This Charter laid down the organisation’s objectives and principles, aiming to strengthen solidarity and cooperation among Member States.
 - The present Charter of the OIC was adopted by the **Eleventh Islamic Summit held in Dakar on 13-14 March 2008**, serving as the pillar for the OIC’s future Islamic action in line with 21st-century requirements.
- India is neither a member nor an Observer state.



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INDIAN FINTECH SECTOR

Why in News: The Union Finance Minister has called on India's fintech companies to view the country's agriculture sector and rural areas as more than just a social responsibility, saying they were an opportunity to "create new markets".

Key Details

- At the **Digital Payments Awards 2025**, organised by the Ministry of Finance's Department of Financial Services, the Finance Minister highlighted the **revival and sustained growth of rural demand**, emphasising the need for increased engagement by stakeholders in these areas.
- The Finance Minister urged fintech companies to expand their role in providing credit access to **Micro, Small, and Medium Enterprises (MSMEs)**, a crucial sector for employment and economic growth.
- The Minister also underscored **India's global leadership in digital payments innovation**, noting that several advanced economies lag behind in adoption speed and are seeking collaboration with India.
 - This reflects the country's growing role as a benchmark for **fintech-driven financial inclusion and digital infrastructure development**, aligning with broader goals of rural economic revitalisation and MSME empowerment.

About the FinTech Sector

- Fintech refers to **technology-driven financial innovations** that create new business models, applications, processes, products, or services that significantly impact financial markets, institutions, and service delivery.
- India has emerged as a **global leader in the FinTech sector** and ranks third globally in the number of fintech unicorns (Roughly 10,200 as of 2024, grown fivefold in three years) and leading globally in digital payment volumes.

Key Enablers in the Growth of the FinTech Sector

- Technological advancements like the development of **IndiaStack** (including Aadhaar, UPI, DigiLocker), low-cost internet, AI, Machine Learning, big data, cloud computing, and user-friendly interfaces.
- Government initiatives and regulatory support, such as the **Pradhan Mantri Jan Dhan Yojana (PMJDY)**, **Digital India**, and the **Unified Payments Interface (UPI)**, which have promoted financial inclusion and digitalisation.

Role of FinTech in Rural Areas

- **Connecting Farmers to Markets:** Innovations are needed to link farmers with markets better. AgriTech solutions, for example, can enhance farm advisory, agri inputs, and market linkages, leading to increased crop yields and reduced input costs.
- **Providing Credit to Underserved Segments:** FinTechs are essential in providing credit to Micro, Small, and Medium Enterprises (MSMEs), which often face a credit gap due to a lack of formal credit history or collateral.
- **Expanding Digital Payments:** The adoption of digital payments in rural and semi-urban India has seen significant growth. In 2025, UPI transactions in rural and semi-urban areas continue to surge, with 38% of transactions originating from these regions. Over 55% of rural India now uses UPI for digital payments, showcasing significant penetration. FinTechs are leveraging digital banking correspondents (BCs) by partnering with local kirana stores and small merchants to extend financial services like digital payments and loans to rural areas.
- **Supporting Government Initiatives:** FinTechs play a complementary role in government initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) and India Stack, which have been instrumental in driving financial inclusion.

Challenges Faced by FinTechs in Rural Areas

- **Digital Divide and Infrastructure:** While rural India has a large number of internet users, access to FinTech services remains underserved due to lower average income, less developed digital infrastructure, and lower digital and financial literacy compared to urban areas. Smartphone penetration in rural areas is low, and affordability is a key challenge.
- **Low Financial Literacy:** A significant portion of the Indian population, particularly in rural areas, lacks widespread financial literacy. In 2023, only 27% of Indian adults and 16.7% of students had a basic understanding of finance which is far below than global average of 42%, creating a barrier to adoption as users may be sceptical or unaware of the benefits and risks.
- **Cybersecurity Concerns:** The increasing digitisation of financial services has led to a corresponding rise in cyber fraud and cybercrimes.
- **Lack of Unified Strategy and Regulatory Mechanism:** FinTech hubs are relatively new, leading to a lack of

coherent pan-India and state-wise strategies, defined targets, and uniform regulatory mechanisms. This can result in regulatory uncertainties and hinder efficient support across the nation.

- **Human and Institutional Capacities:** There are disparities in the presence of robust digital and physical infrastructure, skilled human resources, growth capital, and linkages for demand creation, leading to localised growth spurts rather than uniform development.
- **Informal Credit Behavior and Lack of Collateral:** A large portion of MSMEs still rely on informal credit practices due to a lack of formal credit history or collateral, making it risky for traditional lenders and challenging for FinTechs to formalize their lending.
- **Preference for Offline Channels:** Many customers, especially in rural areas, still prefer offline channels for services like insurance due to the need for hand-holding for complex products and concerns about security and privacy in digital transactions.

Way Forward

- **Policy and Regulatory Support**
 - **Unified Strategy:** State governments should publish white papers outlining FinTech strengths and capabilities, followed by detailed, time-bound targets within a state FinTech policy, drawing upon a central framework.
 - **Streamlining Regulations:** Government and regulatory bodies should streamline regulations, offer infrastructural support, and foster innovation-friendly policies to enable FinTechs to thrive while ensuring consumer protection.
- **Enhancing Financial Inclusion and Literacy**
 - **Digital Onboarding and Products:** Design suitable financial products tailored to the needs of the financially excluded, focusing on digital onboarding and boosting investments. This includes microloans, byte-sized insurance, and sachet SIPs.
 - **Multi-lingual Financial Literacy:** Promote multi-lingual financial literacy and establish robust grievance redressal mechanisms to address inter-regional disparities. FinTechs can play a major role in spreading awareness through innovative means like educational blogs, videos on streaming platforms, and digital pocket money apps.
- **Strengthening Digital Infrastructure and Cybersecurity**
 - **Digital Public Infrastructure (DPI):** Continued leveraging of DPIs (like Aadhaar, UPI, Account Aggregator) for secure, paperless, cashless, and presence-less transactions, which also reduces customer onboarding costs.
 - **Cybersecurity Measures:** Government, in partnership with FinTech companies, should routinely assess

cybersecurity measures and implement sufficient controls within the FinTech cyber landscape.

- **Robust Technology Architecture:** Build a robust technological architecture to prevent external threats like data breaches and cyberattacks.
- **Fostering Innovation and Market Expansion**
 - **New Markets:** FinTechs should proactively pursue opportunities in agriculture and rural areas as new markets, recognising the reviving and sustaining demand there.
 - **Alternative Credit Assessment:** Develop and utilise alternative credit assessment methodologies for underserved segments like gig-workers, small farmers, and women-led businesses, who often lack traditional credit history or collateral.
 - **Ecosystem Collaboration:** Foster increased collaboration between banks, financial institutions, FinTechs, and BigTechs to fast-track financial access to the underserved. The Reserve Bank of India (RBI) encourages banks to explore new alliances with FinTech firms to accelerate financial inclusion.
 - **Global Expansion:** India's FinTech innovations have the potential to become global public goods, benefiting other emerging and developing economies and opening new markets for Indian firms. Indian players should aim to export their successful models abroad.

Conclusion

India's FinTech sector is experiencing robust growth, positioning the country as a global leader in digital payments and financial innovation, vital for widespread financial inclusion, particularly in rural and underserved areas. Despite challenges such as cybersecurity threats, the digital divide, and low financial literacy, continued collaboration between FinTechs, the government, and regulators, along with strategic policy support and infrastructure development, is crucial. This will **enable the sector to overcome obstacles, foster innovation, and contribute significantly to the Viksit Bharat @ 2047 vision.**

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. How are technological innovations and government initiatives collectively shaping India's FinTech growth and financial inclusion? [150 words] [10 marks]

PRIORITY LENDING NORMS FOR SFBs

Why in News: Recently, the RBI eased priority sector lending norms for Small Finance Banks (SFBs), enabling the reallocation of ₹41,000 crore towards low-risk segments.

INDIA'S RISING EXTERNAL DEBT

Why in News: Recently, India's external debt rose to \$736 billion, or 19.1% of GDP at the end of March 2025 from \$668.8 billion, or 18.5 per cent of GDP, a year ago.

Key Details

- **Impact of rising dollar prices:** According to the Reserve Bank of India (RBI), the value impact of the US dollar's increase relative to the Indian rupee and other currencies was \$5.3 billion. If the valuation effect had not been taken into account, external debt would have grown by \$72.9 billion by the end of March 2025 as opposed to \$67.5 billion at the end of March 2024.
- **Long term debt:** At the end of March 2025, the total amount of long-term debt (defined as debt having an original maturity of more than a year) was \$601.9 billion, which was \$60.6 billion more than it was at the end of March 2024.
- **Short term debt:** The proportion of short-term debt (originally with a one-year maturity) in total foreign debt decreased from 19.1% at the end of March 2024 to 18.3% at the end of March 2025.
- **Currency wise distribution:** The largest portion of India's external debt—54.2%—was still pegged in US dollars. Debt expressed in the Indian rupee (31.1%), yen (6.2%), Special Drawing Rights (4.6%), and euro (3.2%) came next.
- **Category wise distribution:** At 34% of total foreign debt, loans continued to be the largest component, followed by currency and deposits (22.8%), trade credit and advances (17.8%), and debt securities (17.7%).

External Debt

- It refers to the funds borrowed from foreign sources by the Central Government or corporations (including External Commercial Borrowings), generally in currencies such as the US Dollar or SDR.
- The Sources may include foreign commercial banks, international financial institutions like the IMF and World Bank, or foreign governments.

Issues Associated with Rising Debt

- **Foreign Exchange Reserves:** Repayments of such debt are made in foreign currencies, affecting India's foreign exchange reserves, especially if earning from exports reduces.
- **Global uncertainty:** Global threat of stagflation may lower the demand for India's exports affecting the debt service ratio.
- **Economic Stability:** Currency depreciation, a decline in investor confidence, and economic instability can all result from excessive debt, which could lead to a sovereign debt crisis.
- **Rising Inflation in India:** Prolonged inflation further

increases the interest rates, slowing down growth, resulting in a higher external debt to GDP ratio.

Solutions for Effective External Debt Management

- **Policy Coordination:** Set up a **National Debt Coordination Committee** with representatives from the Ministry of Finance, RBI, NITI Aayog, and PSUs to ensure alignment of external borrowing with national development goals and macroeconomic stability.
- **Regulatory Framework:** Simplify and centralize approval mechanisms for external commercial borrowings (ECB), ensuring transparency and efficiency. **Regularly update ECB and FPI regulations to match global financial trends.**
- **Operational Strategy:** Diversify borrowing through sovereign green bonds, diaspora bonds, and multilateral sources. Ensure proper currency and interest rate risk management to reduce repayment shocks.
- **Accounting and Transparency:** Create a comprehensive external debt register capturing loan-wise data across central government, PSUs, and state borrowings to clearly define contingent liabilities
- **Statistical Monitoring:** Use AI-based tools to assess vulnerabilities arising from global financial shifts.

Conclusion

India's external debt, though currently within sustainable limits, **requires prudent management through diversified borrowing, stronger policy coordination, enhanced transparency, and effective risk mitigation** to protect macroeconomic stability and resilience against global shocks.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. India's rising external debt poses both macroeconomic challenges and policy imperatives. Discuss the causes, associated risks, and suggest a comprehensive strategy for sustainable external debt management in India. [250 Words] [15 Words]

GLOBAL CAPABILITY CENTERS (GCCs)

Why in News: The Indian government is working on comprehensive policy interventions to further accelerate the growth of **Global Capability Centers (GCCs)** in the country, with over 1,800 such centres currently operational.

Global Capability Centers (GCCs)

- Global Capability Centers (GCCs) are strategic units that **support an organisation's global operations through technology, talent, and innovation.**
- They are **fully owned and integrated hubs**, typically established in talent-rich locations, to build significant

value and intellectual property (IP) using collaborative, distributed teams.

- GCCs are also known as **Captive Centers, Global In-House Centers (GICs), Global Teams, or Global Technology Centers.**
- They have evolved from being mere cost centres or sources of cost arbitrage and back-office support to strategic entities that significantly contribute to business growth, agility, and value creation.

Status of Global Capability Centers (GCCs) in India

- Evolution and Strategic Importance GCCs in India have undergone a significant transformation, **moving from secondary support roles to becoming influential players in the Indian tech sector** and major tech hubs.
 - They are now **deeply integrated with their parent organisations**, serving as strategic assets that provide extensive access to digital talent.
 - This evolution has seen them **transform** from single-function, labour arbitrage, and cost-saving centres to multi-function, regional ability, and globally integrated centres of excellence.
 - Today's GCCs are operating at **various maturity levels**, from basic back-end support to driving cutting-edge technological innovations and steering comprehensive portfolios as Centres of Excellence (CoEs).
- **Revenue:** GCCs are projected to **generate \$121 billion in revenue by 2030**, contributing approximately 3.5% of India's current GDP, with \$102 billion expected from exports.
- **Employment:** Between 2018-19 and 2023-24, GCCs **created over 600,000 new jobs**, bringing the total employment to more than 1.6 million.

Challenges in the Development of Global Capability Centers (GCCs) in India

- **Workforce and Market Dynamics**
 - **Workforce Agility and Resilience:** A key challenge is staying ahead of the need for an agile and resilient workforce capable of adapting quickly to new changes and challenges.
 - **Intensified Market Competition:** As market competition intensifies, GCCs must continuously innovate and improve to stay ahead.
 - **Evolving Customer Expectations:** GCCs need to adapt their strategies to meet the evolving demands of customers effectively.
 - **Specialised Skills Development:** Moving beyond traditional business functions to engineering R&D, AI, and emerging technologies requires continuous development of specialised skills.
- **Internal and Financial Hurdles**
 - **Rallying Internal Organisational Support:** Gaining internal organisational support for the creation of a GCC that enables talent, technology, and innovation strategies can be a challenge.

- **Digital Enterprise Transformation:** The shift towards digital enterprise transformation necessitates the integration of digital processes and technologies across operations, adding complexity.
- **Increased Financial Complexities:** Volatile markets can drive increased financial complexities, impacting operational efficiency and growth.
- **Managing Increasing Costs:** While focusing on value-adding niche capabilities, GCCs are also dealing with increasing overall costs.
- **Government Engagement and Geographic Concentration**
 - **Limited Engagement in National Programs:** There has been limited engagement of GCCs in national programs, such as the PM Internship Scheme, indicating a need for faster decision-making processes to leverage these "win-win" opportunities.
 - **Concentration in Major Centres:** The concentration of GCCs in only 3-4 major centres limits their geographic spread and the full utilisation of talent in other regions.
 - **Outreach Strategies:** With GCC expansion beyond US companies to other countries, India needs enhanced outreach strategies to attract a broader range of global players.

Way Forward

- **Strategic Evolution and Innovation**
 - **Continuous Reinvention:** GCCs must continuously reinvent their strategies to maximise operations' value and unlock growth potential.
 - **Moving Up the Value Chain:** Enterprises should focus on moving GCCs further up the value chain, creating opportunities for future leadership and enhancing their overall impact.
 - **Leveraging Partner Ecosystems:** GCCs can boost innovation by collaborating with external ecosystems and strategic partnerships.
- **Talent Development and Retention**
 - **Nurturing Advanced Skills:** Focus on nurturing advanced skills in areas like product development and management, AI, cyber engineering, edge computing, and synthetic biology.
 - **Talent Lifecycle Management:** Utilise AI-enabled tools to streamline HR processes, enhance employee engagement, and drive efficiency throughout the employee journey.
- **Operational Excellence and Digital Transformation**
 - **Data-Driven Insights:** Empower organisations with data-driven insights and strategic growth by unlocking the full potential of data.
 - **ESG Capabilities:** Proactively develop ESG (Environmental, Social, and Governance) capabilities

to contribute to the global ESG agenda, as it is becoming a strategic business priority.

- **Technology Integration:** Integrate advanced technologies such as AI, machine learning, and analytics to optimise processes, enhance decision-making, and drive innovation.

Conclusion

India's GCCs are key drivers of **innovation and global competitiveness**. Addressing skill gaps, geographic concentration, and operational challenges through policy support and digital transformation can help position India as a global leader in high-value capability centers.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. What are the primary challenges hindering the sustained evolution and expansion of Indian global capability center (GCCs)? How can India best leverage its GCCs for future global leadership and value creation? [250 words] [15 marks]

STARTUP ECOSYSTEM IN INDIA

Why in News: India's start-up ecosystem has witnessed exponential growth over the last decade, with a surge in early-stage funding, digital penetration, and consumer affluence across both metros and non-metro regions, according to a report released by Meta.

Startups in India

- India has rapidly ascended to become the **world's third-largest startup ecosystem**, with over 1,61,150 Department for Promotion of Industry and Internal Trade (DPIIT)-recognised startups as of 31 January 2025.
- The ecosystem spans metro hubs such as **Bengaluru, Mumbai, and Delhi-NCR**, and increasingly thrives in **Tier II and III cities** like Jaipur, Indore, and Ahmedabad, reflecting its deepening reach and maturity.

Why India's Startup Sector Is Booming

- **Explosive Growth Trajectory**
 - Recognised startups roughly increase by 403 times in less than a decade in 2015–16 to end of January 2025.
 - Unicorn count surpassed 118, with over 50% backed by private equity and venture capital.
- **Enabling Digital Public Infrastructure**
 - Aadhaar, Unified Payments Interface (UPI), and DigiLocker have lowered friction in identity, payments, and documentation, powering fintech and digital services.
 - Widespread smartphone and broadband penetration, reaching over 800 million users, has expanded market access for app-based startups.

Robust Funding Ecosystem

- PE/VC funding grew from \$19.7 billion in 2015 to a peak of \$77.07 billion in 2021; in early 2024 alone, startups raised \$49.54 billion.
- **Fund of Funds for Startups (FFS):** ₹11,688 crore committed, catalysing a total pool of ₹81,000 crore through 151 Alternative Investment Funds.

Thriving Talent Pool and Academia-Industry Linkages

- Premier institutes (IITs, IIMs, IIITs) annually produce 24,000+ PhD graduates, fueling deep-tech ventures in AI, quantum computing, and space.
- Incubators and accelerators (1,200+ nationwide) provide mentorship, networking, and prototyping support.

Favourable Demographics and Market

- A young, tech-savvy population (median age 28) and a growing middle class drive demand for innovative products in fintech, edtech, health-tech, and e-commerce.
- Tier II/III cities account for 50% of startups, unlocking new consumer segments and reducing geographical concentration.

Challenges to the Growth of Startups in India

Limited Access to Patient Capital

- Deep-tech ventures require long-term funding; domestic funds often focus on quick exits.
- **75% of startup funding in 2024 was from international sources**, underscoring reliance on foreign capital.

Regulatory and Compliance Complexities

- Navigating varied state-level regulations, licensing, and tax regimes increases time and cost to market.
- Environmental and labour law self-certification initiatives exist, but awareness and compliance remain uneven.

Talent Acquisition and Retention

- High demand for skilled professionals in AI/ML, data science, and product development leads to talent shortages.
- Competition with established tech giants for experienced hires drives up compensation costs.

Inadequate Infrastructure in Emerging Hubs:

Startup clusters outside metros often lack co-working spaces, R&D facilities, and reliable power or logistics networks.

Governance and Ethical Conduct:

Recent corporate failures (Byju's, BharatPe) highlight the need for stronger self-regulation, transparency, and professional boards.

Government Initiatives

Startup India Initiative (2016)

- **Simplification & Handholding:** SPICe+ single-window company incorporation; fast-track patent examination; self-certification under labour/environment laws.

➤ Funding Support & Incentives

- ◆ Fund of Funds (₹10,000 cr corpus) managed by SIDBI to co-invest in SEBI-registered AIFs.
- ◆ **Tax exemptions:** 3-year profit tax holiday (Section 80-IAC); capital gains tax relief for investments in AIFs.

➤ **Industry-Academia Partnerships:** Atal Innovation Mission (AIM) with Atal Tinkering Labs and Incubation Centres to nurture grassroots innovation.

• Fund of Funds for Startups (FFS)

- **Objective:** Catalyse early-stage funding via AIFs, requiring them to invest at least twice the FFS contribution in recognised startups.
- **Impact:** ₹11,688 cr committed through 151 AIFs, supporting 1,173 startups and mobilising ₹81,000 cr total capital.

• **Startup India Seed Fund Scheme (SISFS) (2021):** Grants up to ₹20 lakh for proof of concept and prototype development; convertible debentures up to ₹50 lakh.

• **Atal Innovation Mission (AIM) (2016):** Establishes Atal Tinkering Labs in schools to foster early STEM skills; funds Atal Incubation Centres to incubate startups with seed capital and mentorship.

• **SAMRIDH Scheme (2021):** Co-investment of up to ₹40 lakh per startup with VCs/angels; access to corporate accelerators and deep-tech networks.

• **Support for International Patent Protection in Electronics & IT (SIP-EIT) (2014):** Reimbursement up to ₹15 lakh per patent application to secure global IP rights.

• **Government e-Marketplace (GeM):** Priority access and waived tender norms for DPIIT-recognised startups to sell products/services to government buyers.

• **SPICe+ Simplified Company Incorporation (2020):** Single form for incorporation along with PAN, TAN, GST, EPFO, and bank account registration to accelerate launch.

• **Credit Guarantee Scheme for Startups (CGSS):** Collateral-free loans through a guarantee trust, covering term loans and working capital up to ₹2 crore to encourage bank lending.

Conclusion

India's startup ecosystem has emerged as a global leader, powered by digital infrastructure, funding growth, and a young talent base. Addressing gaps in capital access, regulations, talent, and infrastructure will be vital to sustain momentum and enhance global competitiveness.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Examine the factors that have contributed to the rapid rise of India's startup ecosystem since 2015. Discuss the key challenges faced by Indian startups today and evaluate the effectiveness of major government initiatives. [250 words] [15 marks]

DIGITAL PAYMENT INTELLIGENCE PLATFORM (DPIP)

Why in News: In a bid to rein in the increasing incidence of digital payment frauds, major public and private sector banks have been roped in to develop the Digital Payment Intelligence Platform (DPIP) as a Digital Public Infrastructure (DPI) under the supervision and guidance of the RBI.

Digital Payment Intelligence Platform (DPIP)

- The Digital Payment Intelligence Platform (DPIP) is an **upcoming real-time, AI-enabled Digital Public Infrastructure (DPI)** designed to combat the alarming surge in digital payment frauds.
- This platform is being **developed by the Reserve Bank of India (RBI)** in close collaboration with major public and private sector banks in India.
- The initiative is considered a top regulatory and industry priority and is expected to go live in the coming months.

Need for DPIP

- The development of DPIP comes in response to a significant and alarming increase in digital payment fraud and cybercrimes in India.
- **Soaring Fraud Figures:** Total frauds reported by Indian banks nearly tripled in FY25, surging to Rs 36,014 crore from Rs 12,230 crore in FY24.
- **High Cybercrime Complaints and Losses:** In just the first nine months of 2024, India reported over 1.7 million cybercrime complaints, leading to losses exceeding Rs 11,000 crore.
- **Evolving Threat Landscape and Systemic Weaknesses**
 - **OTT messaging platforms were identified as fraud's weakest link** due to insufficient oversight, emphasising the need for their regulation.
 - India's rapid **digital financial adoption necessitates equal strides** in cybersecurity to prevent fraudsters from exploiting systemic loopholes.

Purpose and Core Functions of DPIP

The primary purpose of the DPIP is to bolster fraud risk management and prevent fraudulent digital transactions by enabling real-time intelligence sharing and data analysis.

- **Real-time Detection and Blocking:** It will enable the real-time detection and blocking of fraudulent transactions as they occur.
- **Cross-Institutional Data Sharing:** The platform will facilitate cross-bank data sharing on various scam trends, mule accounts, and rogue domains. This allows for a collective defence against fraudsters.
- **Integration with Existing Tools:** DPIP will integrate with existing fraud detection tools like MuleHunter.ai and domain blacklists to enhance their effectiveness.

- **Livestock sector:** The GVO of livestock products is one of the sectors of agriculture and related activities that is expanding the fastest, rising from ₹488 thousand crore in 2011–12 to ₹919 thousand crore in 2023–24.

Although its share dropped from 67.2% in 2011–12 to 65.9% in 2023–24, milk continued to hold a dominant position in this industry.

- **Forestry and Logging:** The “Forestry and Logging” sector grew moderately but steadily, from ₹149 thousand crore in 2011–12 to ₹227 thousand crore in 2023–24.
- **Fishing and Aquaculture:** With a substantial increase in its contribution from 4.2% in 2011–12 to 7.0% in 2023–24, the “Fishing and aquaculture” sub-sector is becoming more and more significant in India’s agricultural GVO.
- Between 2011–12 and 2023–24, the **proportion of inland fish fell from 57.7% to 50.2%**, while the **proportion of marine fish rose from 42.3% to 49.8%**.

Importance of Agriculture in the Indian Economy

- **GDP Contribution:** Agriculture and related industries made up roughly 17–18% of India’s GDP as of 2025 and are still essential to the country’s economic stability, particularly in rural areas.
- **Employment Creation:** Agriculture and related industries like forestry, fishing, and animal husbandry employ more than half of India’s labour force.
- **Food Security:** India is self-sufficient in producing staple crops such as rice, wheat, and pulses. The Public Distribution System (PDS) guarantees a consistent supply of food for domestic consumption and shields the nation from fluctuations in the world food supply.
- **Raw Material Source:** Many industries, especially agro-based ones rely on agriculture for their raw materials such as **Textiles** (Jute and cotton), **Sugar** (Sugarcane), **Food Processing** (Cereals, fruits, and vegetables).
- **Export Earnings:** India is one of the **biggest exporters of spices and rice worldwide**. Exports of agricultural products **enhance India’s trade balance in addition to adding to foreign exchange reserves**
- **Social and Cultural Importance:** Festivals honouring agricultural activities including “Makar Sankranti,” “Baisakhi,” and “Onam” are influenced by farming methods.

Way Forward

- Fragmented landholdings and declining productivity.
- Dependence on monsoons, making it vulnerable to climate change.
- Lack of access to modern technology and credit.

However, with initiatives like Digital Agriculture, Soil Health Card Scheme, and Pradhan Mantri Fasal Bima Yojana. These schemes hold tremendous potential for growth and sustainability.

Conclusion

Agriculture remains a cornerstone of India’s economy, not only in terms of GDP contribution but also as a primary source of livelihood, food security, and raw materials for industries. Its role in rural development, poverty alleviation, and export promotion makes it indispensable for the nation’s socio-economic progress. While modernization and diversification are necessary, retaining its cultural and social essence is equally vital to ensure balanced Development.

EXPECTED QUESTION FOR UPSC CSE

Mains Question

- Q. With reference to the recent NSO report, critically examine the shift in composition of the agricultural sector, especially in terms of crops, horticulture, livestock, and aquaculture. [250 Words] [15 Marks]

MOBILISING PRIVATE CAPITAL FOR SUSTAINABLE DEVELOPMENT

Why in News: The Finance Minister of India proposed a seven-point strategy to mobilise private capital at the 4th International Conference on Financing for Development (FfD4) organised by the United Nations in Seville, Spain.

Key Details

- Mobilising private capital is a **development imperative**, the Finance Minister of India, proposing a seven-point strategy to achieve this goal, including improved international credit rating methodologies that reflect the structural strengths and long-term resilience of emerging economies like India.
- “Private investment is a **catalytic force—unlocking capital, boosting productivity, fostering innovation, and introducing technological rigor**—all essential for inclusive, sustainable economic growth,” said the Finance Minister in the keynote address.
- In recent years, there has been **encouraging growth in private investment, supported by the rise of innovative financial instruments** alongside traditional sources.
- However, private capital mobilisation remains significantly below what is required, with low- and middle-income countries receiving a disproportionately small share.
- This underscores the **urgent need for targeted efforts to overcome investment barriers** and better align financial flows with development priorities.

Seven-Point Strategy for Financing Sustainable Development in Emerging Economies

- **Strengthening Domestic Financial Markets:** Strong domestic financial markets are the foundation of investment. India has invested in strengthening its

banking system and deepening capital markets to finance infrastructure and industry at scale. Regulatory frameworks have evolved with market needs balancing investor protection with innovation and flexibility creating a conducive environment for long-term investment.

- **Institutional Reforms to Reduce Risk Perception:** Addressing perceived risks through institutional reforms is crucial. Emerging economies often face high risk perceptions, raising financing costs and deterring investment. India has addressed this by establishing independent regulators, implementing transparent bidding processes, standardising contracts, and improving ease of doing business.
- **Scaling Up Investment Opportunities:** Creating scale in investment opportunities is essential. The presence of well-prepared, de-risked, and investment-ready project pipelines is critical. India's renewable energy transformation from 2.8 GW of installed solar capacity in 2014 to over 119.02 GW as of July 31, 2025 was enabled by clear national targets, streamlined procurement, and government-backed risk mitigation.
- **Leveraging Blended Finance for Priority Sectors:** Blended finance must be scaled up. By leveraging public and concessional finance to de-risk private investment, tools such as sovereign green bonds, thematic bonds and impact investment instruments address market failures and channel commercial capital into sectors like climate, health, education, and gender equality. These models must be transparent, measurable and tailored to local contexts.
- **Enhanced Role of MDBs and DFIs:** Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs) must assume a stronger enabling role. Many sustainable development projects lack initial commercial viability, deterring early-stage private investment. MDBs and DFIs can bridge this gap through concessional finance, guarantees, credit enhancements, and project preparation support—improving risk-return profiles and attracting private capital.
- **Reforming International Credit Rating Methodologies:** Credit rating methodologies must evolve to better reflect the structural strengths and long-term resilience of Emerging Markets and Developing Economies (EMDEs). Current sovereign ratings often understate key fundamentals. For instance, India's sovereign rating does not fully reflect its macroeconomic stability.
- **Empowering MSMEs for Inclusive Growth:** Unlocking capital at the grassroots level requires support for micro, small and medium enterprises (MSMEs). These engines of inclusive growth need access to credit, technology, and capacity-building, along with simplified compliance frameworks. India's initiatives ranging from credit guarantees and stress-period financing to E-Commerce Export Hubs have improved MSME creditworthiness and integration into global value chains.

Conclusion

India's seven-point strategy outlined at the UN FFD4 Conference underscores the country's proactive approach to mobilising private capital for inclusive and sustainable development. By addressing structural barriers, enhancing domestic and global financial mechanisms, and empowering MSMEs, the strategy aims to align private investments with developmental priorities especially crucial for emerging economies facing financing gaps in achieving SDGs.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Examine the role of private investment as a catalyst for inclusive and sustainable economic growth in developing economies. [150 Words] [10 Marks]

INTERNATIONALIZATION OF UPI

Why in News: Recently, Namibia decided to roll out a digital payments system based on India's UPI.

Unified Payment Interface (UPI)

- The **National Payments Corporation of India (NPCI)** created the Unified Payment Interface (UPI), a platform for a payments system.
- A customer can **access and store all of their accounts** with various banks here, as well as conduct transactions using them.
- Using a payment identifier, such as a virtual address or a combination of an account number and IFS Code, **UPI enables money transfers between any two parties** using a smartphone.
- Through **scheduled payment requests**, this system gives users flexibility while facilitating smooth peer-to-peer transactions, merchant payments, and fund transfers.

What Makes UPI Unique?

- **24/7 Accessibility:** Provides instantaneous money transfers via a mobile device around the clock, every day of the year.
- **Unified Banking:** Users can access several bank accounts with a single mobile **application** thanks to unified banking access.
- **Secure and Easy Payments:** Provides One-Click 2-Factor Authentication, guaranteeing safe, one-click transactions and regulatory compliance.
- **Enhanced Privacy:** Transactions are conducted using a virtual address, which removes the need to divulge private information like account numbers or IFSC codes.
- **QR Code Integration:** Enables quick and secure transactions by making payments simple through the scanning of QR codes.
- **Various Payment Options:** Includes scan-and-pay

principal if a qualifying catastrophe occurs, and the sponsor may take money out of the SPV to settle insurance claims.

Does India need a CAT bond?

- **As the intensity of cyclones and forest fires increases,** it is becoming more and more clear that **disaster risk can make it unprofitable for insurers and reinsurers in these climate change times.**
- As a result, demand declines and premiums increase, which ratchets up the risk for the stressed-out disaster victim.
- India is now more vulnerable to disaster risk due to the unpredictable and rising frequency of extreme weather events in South Asia, such as cyclones, floods, forest fires, and devastating earthquakes.
- **For post-disaster reconstruction, India must ring-fence its public funds.**

Advantages of CAT bonds

- **Diversification:** Risk-seeking investors find the disaster risk curve to be the most appealing for diversification because geological or climate hazards are mutually exclusive and unrelated to the financial risk curve.
- **For insurance firms:** In contrast to traditional annual reinsurance contracts, **CAT bonds offer a fully collateralised** (i.e., backed by easily accessible funds) **and usually multiyear alternative source of reinsurance coverage** (insurance for insurance companies). Additionally, **they assist insurers in transferring particular risks** that may be challenging to reinsure using traditional methods.
- **For investors:** Because CAT bonds' returns generally have little correlation with those of traditional financial markets, they provide **appealing yields**. For instance, **CAT bonds fared better than other fixed-income investments during the 2008 financial crisis.**

Disadvantages of CAT bonds

- **Narrow criteria:** Even in the event of a major catastrophe, a **poorly designed CAT bond could result in no payout**. For instance, if a 6.5M event occurs and causes significant damage, an earthquake cat bond intended for a 6.6M magnitude threshold for a particular grid may fail.
- **Losing principal:** The possibility of losing principal in the event of a triggering event is the main risk for investors.
- **Risk of climate change:** Natural disasters are becoming more frequent and severe affecting its attractiveness among investors.
- **Risk to liquidity:** For CAT bonds, the secondary market may be comparatively illiquid.

Way Forward

- **Policy and Regulatory Assistance:** SEBI and IRDAI can work together to develop an Indian regulatory framework for CAT bonds.
- **Pilot Projects:** Launching pilot CAT bon programs in

high-risk areas (such as coastal Andhra, Uttarakhand, and Northeast India).

- **Public-Private Partnerships (PPPs):** For pooled risk management, involve both public and private insurers.
- **Integration with ESG Investments:** Highlight CAT bonds as a component of green investment and sustainable finance portfolios.
- **Capacity Building:** Provide catastrophe modelling and risk structuring training to Indian investors, regulators, and insurers.

Conclusion

CAT bonds present a timely solution to manage rising disaster risks, offering financial protection, diversification, and resilience. With the right policy push and structural safeguards, they can play a crucial role in India's climate-risk management strategy.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q1. What is the primary purpose of issuing a Catastrophe Bond (CAT Bond)?
- To transfer catastrophic risk from insurers to investors
 - International CAT Alliance funding initiative
 - To hedge against interest rate fluctuations
 - None of the above

(a) Answer

Descriptive Question

- Q. Critically examine the relevance, benefits, and limitations of catastrophe bonds in India's disaster management strategy. Suggest policy measures to enable their effective adoption. [250 Words] [15 Marks]

SAGARMALA FINANCE CORPORATION LIMITED (SMFCL)

Why in News: The Union Minister of Ports, Shipping & Waterways MoPSW) inaugurated Sagarmala Finance Corporation Limited (SMFCL), India's first Non-Banking Financial Company (NBFC) in the maritime sector.

Establishment and Transformation of Sagarmala Finance Corporation Limited (SMFCL)

- **Conversion from Sagarmala Development Company Ltd (SDCL):** SMFCL was formed through the conversion of the dormant Sagarmala Development Company Ltd (SDCL) into a full-fledged NBFC.
- The Board of SDCL approved the name change in May, shareholders followed suit, and the Reserve Bank of India (RBI) issued the Certificate of Registration on June 19, 2025.

- **Status:** SMFCL is a Mini Ratna, Category-I, Central Public Sector Enterprise.

Rationale and Addressing Financial Gaps

- The creation of SMFCL is a direct response to the long-standing financial challenges within India’s maritime sector, which has been characterised as capital-intensive, slow-yielding, fragmented, and exposed to commercial and regulatory risks, making it unattractive to traditional lenders.
- **Bridging Financing Gaps:** SMFCL’s primary mandate is to bridge crucial financing gaps where commercial banks and investors hesitate. The maritime sector, despite contributing nearly 95% of India’s trade by volume, receives less than 2% of infrastructure finance.
- **Anchor Financier:** It is designed to act as an anchor financier, de-risking investments and standardising a maritime-specific financing architecture.
- **Lessons from Other DFIs:** Its function is compared to successful Development Finance Institutions (DFIs) like the Indian Railway Finance Corporation (IRFC) for railways and REC Limited and PFC (Power Finance Corporation Ltd) for power, which enabled their respective sectors to scale without solely relying on budgetary support. This move is part of a wider government trend to build a new generation of DFIs for high-impact sectors, recognising the limitations of market finance in long-gestation projects and the risk-aversion of public banks.

Key Features and Financial Mechanisms

- SMFCL is envisioned as a strategic financier with significant flexibility in its operations.
- **Funding Long-Term Projects:** It aims to fund long-term port, coastal, and blue economy projects.
- **Financial Instruments:** The NBFC can issue both rupee and foreign currency bonds, structure green or blue finance instruments, and offer blended finance arrangements combining equity windows, subordinated debt, and guarantees. This includes proposals for a maritime-specific infrastructure investment trust (InvIT) and a Blue Bond targeting global ESG (environmental, social, and governance)-focused investors.
- **Diverse Lending Scope:** SMFCL can lend to a wide range of stakeholders, including:
 - Public agencies and Special Purpose Vehicles (SPVs).
 - Private players and PPP (public-private partnership) consortia.
 - Maritime start-ups and port-linked infrastructure developers.
 - Shipping companies, MSMEs, and maritime educational institutions.
 - Waterway and fishing vessel operators.
- **Loan Tenures:** It will offer short-term (up to one year), medium-term (1-3 years), and long-term (3-15 years) loans.

- **Initial Capital and Fundraise:** Its initial authorised capital is set at Rs 1,000 crore, with the option to scale up through bond issuances and third-party equity participation. SMFCL plans to complete its first tranche of fundraising, to the tune of ₹4,000 crore, over the next six months, through market borrowings like bonds and Non-Convertible Debentures (NCDs), from banks.
- **Early-Stage Proposals:** Projects under review include a **cold storage logistics park near Tuticorin, green retrofits for vessels in Kochi, and capex support for inland ferry operators along the Brahmaputra and Ganga waterways.** It also plans to fund shipyard expansion projects, coastal and inland waterway development, dredging, and industrial developers within coastal economic zones (CEZ).

Strategic Importance and Vision

- SMFCL is positioned as a key instrument in India’s broader maritime ambitions and national development goals.
- **Alignment with National Visions:** It is in perfect alignment with the Maritime Amrit Kaal Vision 2047 and the goal of making India a leading global maritime power and Viksit Bharat (developed India).
- **Support for Strategic Sectors:** Beyond general infrastructure, SMFCL will support strategic sectors such as shipbuilding, renewable energy, cruise tourism, and maritime education, further reinforcing India’s vision.
- **Integrated Maritime Development:** The establishment of SMFCL signals a shift from fragmented port policy to integrated maritime development, placing capital architecture at the centre of this vision.
- **National Logistics Efficiency:** It will enable projects that contribute to sustainable development, innovation, and national logistics efficiency.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding Sagarmala Finance Corporation Limited (SMFCL):
1. SMFCL is India’s first maritime-sector dedicated Non-Banking Financial Company (NBFC).
 2. It was registered as an NBFC with the Reserve Bank of India (RBI) in June 2025.
 3. SMFCL is a Mini Ratna, Category-I, Central Public Sector Enterprise under the Ministry of Ports, Shipping & Waterways.

How many of the above statements is/are correct?

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

(c) Answer.

INDIA'S NATURAL GAS TARIFF REFORMS

Why in News: In a decisive move aimed at strengthening India's transition towards a cleaner, more efficient energy landscape, the Petroleum and Natural Gas Regulatory Board (PNGRB) has approved the Second Amendment to the Natural Gas Pipeline Tariff Regulations, 2025.

Pivotal Reforms in Natural Gas Pipeline Tariff Regulations

- **Simplification of Unified Tariff Zones**
 - PNGRB has reduced the number of Unified Tariff Zones from three to two, which simplifies the natural gas transportation system across the country.
 - This initiative is designed to ensure a more equitable tariff structure and improve access to natural gas, particularly in previously underserved regions.
- **Extension of Unified Zonal Tariff Benefit**
 - In a move focused on consumers, the benefit of the Unified Zonal Tariff of Zone 1 has been extended nationwide to Compressed Natural Gas (CNG) and Piped Natural Gas (PNG) Domestic segments.
 - This is expected to make natural gas more affordable for urban households and transport networks, thereby supporting wider adoption of clean energy.
- **Mandate for Long-Term Gas Procurement**
 - To stabilise tariffs and ensure efficiency in supply, PNGRB has mandated pipeline operators to procure at least 75% of their annual system-use gas through long-term contracts (with a minimum tenure of three years).
 - This measure aims to lower procurement risks, reduce transaction costs, and ultimately lead to more predictable and affordable tariffs for both consumers and investors.
- **Introduction of Pipeline Development Reserve**
 - PNGRB has introduced a dedicated Pipeline Development Reserve, which utilises earnings from pipeline entities that exceed 75% utilisation benchmarks to fund future expansion.
 - 50% of these net-of-tax earnings will be reinvested into infrastructure development, while the remaining 50% will be passed on to consumers through tariff adjustments. This creates a performance-linked, self-sustaining model for growth.

Petroleum and Natural Gas Regulatory Board (PNGRB)

- The Petroleum and Natural Gas Regulatory Board (PNGRB) was constituted under The Petroleum and Natural Gas Regulatory Board Act, 2006, (NO. 19 OF 2006) notified via Gazette Notification dated 31st March 2006.
- The Act provide for the **establishment of the Petroleum and Natural Gas Regulatory Board** to protect the interests of consumers and entities engaged in specified activities

relating to petroleum, petroleum products and natural gas and to promote competitive markets and for matters connected therewith or incidental thereto.

- Further as enshrined in the act, the board has also been mandated to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas excluding production of crude oil and natural gas so as and to ensure uninterrupted and adequate supply of petroleum, petroleum products and natural gas in all parts of the country.
- **Functions of the Board**
 - Protect the interests of consumers by fostering fair trade and competition among the entities.
 - **Register entities to:**
 - ◆ market notified petroleum and petroleum products and, subject to the contractual obligations of the Central Government, natural gas;
 - ◆ establish and operate liquefied natural gas terminals;
 - ◆ establish storage facilities for petroleum, petroleum products or natural gas exceeding such capacity as may be specified by regulations.
 - **Authorise entities to:**
 - ◆ lay, build, operate or expand a common carrier or contract carrier
 - ◆ lay, build, operate or expand city or local natural gas distribution network
 - Regulate transportation rates for common carrier or contract carrier.
 - Regulate access to the city or local natural gas distribution network so as to ensure fair trade and competition amongst entities as per the pipeline access code.
 - **Levy fees and other charges** as determined by regulations.
 - Maintain a data bank of information on activities relating to petroleum, petroleum products and natural gas.
 - Lay down, by regulations, the technical standards and specifications including safety standards in activities relating to petroleum, petroleum products and natural gas, including the construction and operation of pipeline and infrastructure projects related to downstream petroleum and natural gas sector.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is a key feature of the Second Amendment to the Natural Gas Pipeline Tariff Regulations, 2025, approved by the Petroleum and Natural Gas Regulatory Board (PNGRB)?
- (a) Introduction of a new Natural Gas Production Act
 - (b) Reduction of Unified Tariff Zones from three to two
 - (c) Extension of gas procurement from short-term contracts
 - (d) Mandatory import of natural gas from specific countries

Answer: (b)

COASTAL LIVES AND A WARMING WORLD

Why in News: Climate change is hitting coastal regions the hardest, with rising sea levels and stronger storms. For millions living along India's coasts, the crisis is no longer future tense it's unfolding now.

Climate change and coastal lives

- **Urban and Economic Centres:** Approximately 40% of people on Earth reside 100 kilometres or less from the coast. More than 70% of global production occurs on or close to seacoasts, which are home to many of the biggest cities, ports, and tourist destinations.
- **Increasing incidents:** Rising seas, saltwater intrusion, and the cumulative effects of unchecked development are uprooting communities that have historically relied on agriculture, fishing, and coastal ecosystems along the eastern and western seaboard.
- **Sea level rise:** Between 1901 and 2018, sea levels rose at an average rate of 15–25 cm, or 1-2 mm annually; during the 2013–2022 decade, this rate increased to 4.62 mm annually, endangering the livelihoods of coastal communities.
- **Forced migration:** As a result of this, displaced people are being forced into unstable urban labour markets without sufficient government assistance or legal protection.
- **Small Island Developing States:** The landmass in a large number of Small Island Developing States (SIDS) is only a few dozen centimetres above sea level. The rising ocean might engulf them, forcing their residents to flee to other nations for safety.
- **Coastal ecosystem:** Since coral bleaching and reef destruction result from water temperatures rising above a certain point, global warming poses a serious threat to coral reefs.
- **Fisheries:** Acidity may rise by 0.06 to 0.34 pH by the middle of the century. Fish productivity and diversity will suffer greatly as a result of the difficulty many marine organisms will have to adjust to the new environment.
- **Ecosystem destruction:** Wetlands, sand dunes, and mangrove forests that once protected coastal communities have been steadily cleared for infrastructure.
- **Loopholes in environmental clearances:** Numerous projects' environmental clearances have disregarded cumulative climate risks, which has resulted in a development model that exacerbates social and ecological vulnerabilities.
- **Displacement:** In urban areas, the displaced populations are increasingly being absorbed into the unorganised sector as domestic workers, brick kiln labourers, and construction workers. Systemic labour exploitation is frequently the outcome of these migration patterns.
- **Frequent Disasters:** Both natural and man-made disasters have caused more damage as a result of development projects like infrastructure improvements involving earth mining, mountain cracking, and river bridling.
- **Global Warming:** Excessive emissions of greenhouse gases combined with rapid industrialisation have contributed to global warming.

Legal lacunae on climate displacement

- **Lack of specific laws:** Although the right to life and dignity is guaranteed by Article 21 of the Constitution, the rights of those displaced by slow-onset climate disasters are not specifically addressed by any laws.
- **Exclusion of socio-economic framework:** The socioeconomic aspects of displacement are not sufficiently taken into account by existing frameworks like the Disaster Management Act of 2005, the Environment (Protection) Act of 1986, and the Coastal Regulation Zone (CRZ) Notifications. These frameworks are restricted to either environmental conservation or disaster response.
- **Absence of specific plans:** While acknowledging vulnerability, the National Action Plan on Climate Change (NAPCC) and State Action Plans do not include specific plans for rehabilitating displaced people or integrating them into the workforce.
- **Lack of implementation:** In the cases of *M.C. Mehta vs. Union of India (1987)* and *Indian Council for Environmental Action vs. Union of India (1996)*, the Supreme Court of India's environmental justice jurisprudence acknowledged the close connection between the environment and fundamental human rights. However,

Environment vs. Development

- **Industrial and Infrastructure expansion:** Ecological degradation has been exacerbated by the growth of industry and infrastructure, ranging from energy projects and commercial aquaculture to port development under various programs.

there is still a lack of translation of these ideas into strong, community-focused legal frameworks on climate displacement.

Towards a rights-based framework

- **Policy integration:** It is crucial that **national migration and urban planning policies acknowledge climate migrants**. A **rights-based strategy** is required to ensure decent housing, employment, health care, and education.
- **Labour codes:** It is imperative that labour codes be updated to specifically **provide protections for climate migrants**, particularly in industries where informality is prevalent, like construction and domestic work.
- **Coastal zone management:** In a similar vein, coastal zone management **needs to be re-examined to put community rights and ecological sustainability ahead of private interests**.
- **Employment conditions:** Addressing the new vulnerabilities brought about by climate displacement is essential to India's commitment to reaching Sustainable Development Goal Target 8.7, which calls for the **abolition of forced labour and the guarantee of decent work for all including climate refugees**.

Conclusion

Protecting coastal communities from the impacts of climate change is not just an environmental imperative. It is a test of India's commitment to justice, equity, and constitutional values

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Critically examine the impacts of climate change on coastal communities and evaluate the existing legal and policy frameworks addressing climate-induced displacement. Suggest a rights-based approach to strengthen India's climate resilience. [250 Words] [15 Marks]

ARTIFICIAL RAIN

Why in News: Recently, the Delhi government has planned to use artificial rain for the first time to reduce air pollution.

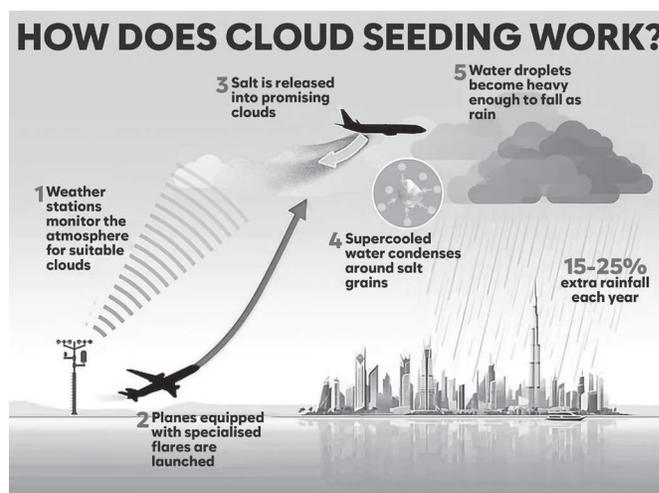
Key Details

- In the context of Delhi's first artificial rain experiment, the project is titled "Technology Demonstration and Evaluation of Cloud Seeding as an Alternative for Delhi NCR Pollution Mitigation".
- The project is spearheaded by **IIT Kanpur**.
- They have developed a special seeding formulation that **uses silver iodide nanoparticles, iodised salt, and rock salt**. This mixture is designed to catalyse rainfall by accelerating droplet formation in moisture-rich clouds.

- For the Delhi trials, modified Cessna aircraft will be used to disperse the seeding mixture via flare-based systems.
- Each aircraft sortie will last approximately 90 minutes and cover about 100 square kilometres of airspace, specifically over northwest and outer Delhi.
- The most suitable cloud type for seeding is the **nimbostratus**, which typically forms **between 500 to 6,000 meters above ground**.

Artificial Rain (Cloud Seeding)

- Artificial rain, also known as cloud seeding, is a weather modification technique designed to **stimulate artificial rainfall**.
- It works by dispersing specific chemicals, known as condensation or ice nuclei, into moisture-laden clouds.
- These nuclei provide a base for water vapour to condense or for snowflakes to form, encouraging the formation of water droplets or ice crystals that become heavy enough to fall as rain or snow.



Advantages of Artificial Rain

- **Air Pollution Dispersal:** It helps in dispersing air pollution by reducing the concentration of dust, smoke, smog, haze, and various chemicals in the atmosphere. This is a primary motivation for its consideration in Delhi.
- **Increased Water Supply:** It can significantly improve rainfall quantity in rain-deficit areas. This includes enhancing winter snowfall and increasing mountain snowpack, which supplements natural water supplies for communities. Long-term projects have shown increases of 10% or more in snowpack.
- **Agricultural Benefits:** By providing moisture, it can benefit agriculture and support crop growth.
- **Weather Control:** It can help in controlling prevailing weather conditions, not just making rain, but also regulating water vapor to prevent damages from destructive hails and storms. It's used for managing hail in agriculture and for clearing fog to improve airport visibility.

- **Wildfire Management:** Artificial rain can be used as a tool for firefighting and helping to put out wildfires.
- **Making Dry Places Livable:** It can contribute to making arid regions more habitable. For example, the United Arab Emirates actively uses this technique to expand agricultural capabilities and combat extreme heat.
- **Hydroelectric Power:** Hydroelectric companies can use cloud seeding to boost spring runoff.
- **Drought Mitigation:** It is a potential solution to droughts, with countries like the USA, China, and Australia applying it to maximise water utilisation during rainfall for drought mitigation.

Concerns and Challenges

- **Meteorological Dependency:** For cloud seeding to be successful, suitable meteorological conditions are required, specifically the presence of moisture-filled clouds, which are not always available or predictable. If storm systems are absent for long periods, cloud seeding cannot occur.
- **Effectiveness and Predictability:** It is not a foolproof or guaranteed solution. Its effectiveness varies from project to project.
- **Potentially Harmful Chemicals:** The use of chemicals like silver iodide can potentially affect plants, though studies on their long-term implications are limited. Silver iodide might be toxic to terrestrial and aquatic life.
- **Iodism:** Silver iodide may cause iodism, a type of iodine poisoning in humans, with symptoms including a runny nose, headache, skin rash, anemia, and diarrhea.
- **Climatic Pattern Changes:** There are concerns that artificial rains might eventually change climatic patterns. If not regulated, cloud seeding could lead to undesirable or destructive weather conditions such as flooding, storms, or hail risks.
- **Air Pollution Contribution:** Injecting silver iodide particles into the atmosphere can increase the concentration of particulate matter and potentially trigger other pollutants, posing a health risk.
- **Contamination Risks:** Mishandling silver iodide and other chemicals could cause environmental pollution, affecting natural ecosystems and human health.
- **High Cost:** The process to generate artificial rain is very expensive.

Way Forward

- **Continued Research and Understanding:** A meticulous dive into scientific investigation and comprehensive research is crucial before widespread cloud seeding is embraced.
 - There is a need for a thorough understanding of its long-term consequences, particularly regarding air pollution, and to weigh potential benefits against associated health risks.

- **Mitigation Strategies:** It is paramount to navigate and mitigate contamination risks by implementing stringent protocols and precautionary measures in the handling and deployment of chemicals.
- **Ethical Considerations and Balance:** The debate around cloud seeding highlights the need to find a delicate balance between progress and the potential pitfalls that come with tampering with nature.
 - Governments and private companies must weigh the pros and cons carefully, with some countries embracing it while others proceed cautiously.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Cloud Seeding:

1. Cloud seeding involves dispersing substances like silver iodide or sodium chloride into clouds to induce rainfall.
2. It is effective only on cumulonimbus clouds during the monsoon season.

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)

GHARIAL AND SLOTH BEAR IN THE SPECIES RECOVERY PROGRAMME

Why in News: The Standing Committee of National Board for Wildlife (SCNBWL) has recommended the inclusion of gharial and sloth bear in the Centre’s Species Recovery Programme aimed at conserving critically endangered species and habitats.

About Gharial

- **Scientific Name:** Gavialis gangeticus
- **Length:** 3-6 meters (Male), 2.5-4 meters (Female)
- **Weight:** 150-250 Kg
- **Population:** Approximately 800
- **Conservation Status**
 - **Schedule I** of the Wildlife (Protection) Act, 1972
 - **Critically Endangered** on the IUCN Red List
- **Habitat & Distribution**
 - Gharial prefers deep fast fast-flowing rivers; however, adult gharial have also been observed in still water branches (jheel) of rivers and in comparatively velocity-free aquatic environments of deep holes (kunds) at river bends and confluences.

- The rock material is crushed to speed up the process, which resembles natural weathering but is far quicker.
- As ERW can store carbon in the soil for hundreds of years, it is a useful technique to reduce atmospheric CO₂ levels and mitigate the severity of climate change.

Benefits of ERW technology

- **Removal of CO₂:** According to a US study, over a four-year period, applying 50 tonnes of basalt annually to one hectare of land could remove up to 10.5 tonnes of carbon dioxide per hectare.
- **Soil fertility:** ERW can help improve soil quality by decreasing the risk of drought, soil erosion, and desertification while also improving soil water retention, and making the soil more fertile.
- **Chemical free farming:** ERW can help balance the acidity of the soil by distributing finely ground rocks and minerals on fields, which increases crop yields without using synthetic fertilisers..
- **Ocean pH levels:** It can also boost coastal productivity by increasing ocean pH levels, which help counteract the negative effects of CO₂ on marine life.
- **Cost effective:** The process is less expensive because basalt is both naturally occurring and frequently available as a byproduct of quarrying.

Challenges

- **Impact of variables:** The size and type of rocks, the climate’s humidity and temperature, the type of soil, and land management all affect rates.
- **Funding:** More funding is needed to conduct basic research in order to determine the precise amount of carbon dioxide that is removed.
- **Heavy metals:** Certain rocks that weather quickly contain high concentrations of potentially harmful heavy metals.
- **Accuracy of impact:** The inaccurate measurements result in an overestimation of captured carbon. A business may release more carbon dioxide into the atmosphere overall if it purchases an ERW credit to “offset” its emissions but the process captures less than anticipated.

Conclusion

To sum up, enhanced rock weathering is a promising technology that has the potential to reduce the effects of climate change, greatly reduce atmospheric CO₂ levels, and increase soil fertility. Although scaling up this process is still costly, the benefits of ERW are clear.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q1. With reference to Enhanced Rock Weathering (ERW), consider the following statements:

1. ERW technology involves spreading crushed carbonate rocks on soil to capture carbon dioxide.

2. ERW leads to the formation of bicarbonate, which helps in reducing ocean acidification.
3. Basalt, used in ERW, is often a byproduct of quarrying.

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

(b) :Answer

Descriptive Question

Q. Discuss the significance of Enhanced Rock Weathering (ERW) technology in the context of climate change mitigation and sustainable agriculture in India. [250 words] [15 mark]

50 YEARS OF CITES

Why in News: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) marks 50 years on 1st July 2025 since it entered into force.

About CITES

- **Context**
 - The post-World War II period saw a dramatic increase in international trade in exotic animals, plants, and their derivatives.
 - This unregulated trade posed a serious threat to many species, pushing them to the brink of extinction.
 - The IUCN proposed the multilateral treaty which was signed in 1973 and entered into force in 1975.
 - Today, CITES has 184 Parties, making it one of the largest and most successful conservation agreements in the world.



Objectives and Mechanism

- CITES aims to ensure that international trade in specimens of wild animals and plants **does not threaten their survival**. It operates through a system of permits and certificates that are required for trade in species listed under three appendices:
 - **Appendix I:** Species threatened with extinction. Trade is permitted only in exceptional circumstances.

- Secondary pollutants are concerning as they can be formed from many different compounds. The **phenomena of photochemical smog are a result of the interactions of primary pollutants with other molecules in the air** such as molecular oxygen, water, and hydrocarbons.
- These combine to form yellow clouds that are harmful to humans. Photochemical smog is made up of various secondary pollutants like **ozone, peroxyacyl nitrates (PANs), and nitric acid.**
- **Different types of secondary pollutants include:**
 - Ozone (O₃)
 - Sulfuric acid and nitric acid (component of acid rain)
 - Particulate matter
 - Nitrogen dioxide (NO₂)
 - Peroxyacyl nitrates (PANs)

Primary Pollutants

- Primary pollutants are any type of pollutant directly into the environment. They differ from secondary pollutants because secondary pollutants must form in the atmosphere, whereas primary pollutants do not.
- Primary pollutants can be emitted from many sources including cars, coal-fired power plants, natural gas power plants, biomass burning, natural forest fires, volcanoes, and many more.
- The effects of primary pollutants are of concern as they can be **harmful to humans, animals and plants.**
- Their **contribution to the formation of secondary pollutants is also concerning**, as this is what causes harmful ground level ozone to form, along with different smogs, especially in densely populated cities such as New Delhi.
- **Types of primary pollutants include:**
 - Nitrogen oxides (NO_x)
 - Carbon monoxide (CO)
 - Volatile organic compounds (VOCs)
 - Sulfur oxides (SO_x)
 - Particulate matter (PM)
 - Mercury

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following are secondary air pollutants?

1. Ozone (O₃)
2. Sulfuric acid (H₂SO₄)
3. Carbon monoxide (CO)
4. Peroxyacyl nitrates (PANs)

Select the correct answer using the code below:

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

Answer: (b)

ASIATIC WILD DHOLE

Why in News: The dhole, or Asiatic wild dog (*Cuon alpinus*), believed to have been locally exterminated, has made a confirmed return to Assam's Kaziranga-Karbi Anglong Landscape (KKAL), according to a new study by scientists from the Wildlife Institute of India (WII).

Key Details

- A recent study in the **Journal of Threatened Taxa** has confirmed the presence of dholes (Asiatic wild dogs) in a wildlife corridor where they were previously thought extinct. This rediscovery underscores the ecological significance of forest corridors in supporting threatened species.
- India's wildlife faces growing threats from **habitat loss, deforestation, and climate change.** Experts from the Wildlife Institute of India emphasize that dholes, like tigers and elephants, require large, undisturbed habitats, and their presence reflects the health and connectivity of these landscapes.
- The finding highlights the **urgent need to conserve and restore wildlife corridors**, aligning with national priorities under the Wildlife Action Plan and Biodiversity Targets, especially for lesser-known carnivores often overlooked in mainstream conservation efforts.

About Asiatic Wild Dhole

- Asiatic wild dogs, also called 'dholes', are wild members of the dog family, found in the **forests of South and Southeast Asia.**
- They have a **distinctive rusty-red coat** and a bushy tail with a black tip.
- Living in **matriarchal packs**, they are highly coordinated hunters and play a crucial role in controlling prey populations, helping maintain ecological balance in forest ecosystems.
- With only 1000–2000 adult, mature individuals (capable of reproducing) remaining in the world, they are listed as '**Endangered**' by the **International Union for Conservation of Nature (IUCN).** Dholes are very social and live-in families or 'packs' of 2–24 individuals.
- They are also **highly vocal animals**, and use sounds to communicate while interacting with each other and during their hunts. They are known for their unique



whistling sound, which has also earned them the term ‘whistling dogs’.

- Dholes are **habitat-sensitive and are usually found in protected forests**. They are also very shy and elusive, and avoid areas with high human disturbance.
- Found across **South, Central, and Southeast Asia, dholes are present in India’s Western Ghats**, Eastern Ghats, central regions, and parts of the northeast.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the Asiatic Wild Dhole (*Cuon alpinus*):

1. The dhole is classified as Vulnerable by the IUCN and prefers open grassland habitats.
2. In India, it is found in regions such as the Western Ghats, Eastern Ghats, central India, and parts of the northeast.

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)

C-FLOOD

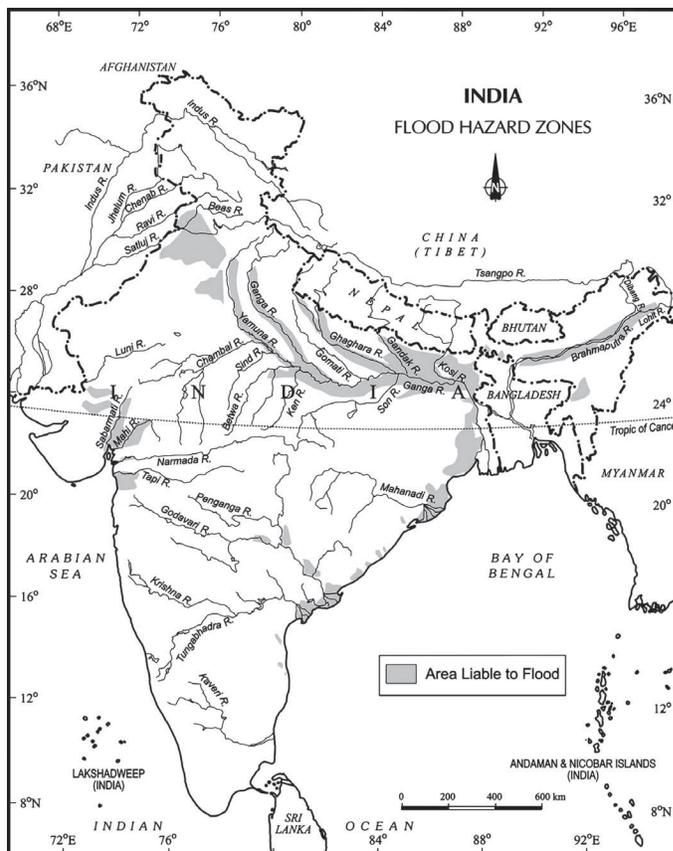
Why in News: Recently, the Union Minister of Jal Shakti inaugurated C-FLOOD, a Unified Inundation Forecasting System.

Key Details

- A web-based tool called C-FLOOD offers **water level predictions and flood inundation maps with two days’ advance inundation of impending flooding up to the village level**.
- The project marks a transformative step towards **strengthening India’s flood management and disaster response framework**.
- This project is **executed under the National Supercomputing Mission (NSM)** and was **overseen by the Ministry of Electronics and Information Technology (MeitY) and the Department of Science and Technology (DST)**.
- It was **jointly developed by** the Central Water Commission (CWC), Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD & GR), Ministry of Jal Shakti, and the Centre for Development of Advanced Computing (C-DAC), Pune.
- The platform will serve as a unified system that **integrates flood modelling results from regional and**

national organisations, providing disaster management authorities with a thorough decision-support tool.

- The C-FLOOD platform simulates flood situations using **sophisticated 2-D hydrodynamic modelling**.
- The simulations for the Mahanadi Basin are **carried out on High Performance Computing (HPC) infrastructure** under NSM at C-DAC Pune, integrating the findings for the Godavari and Tapi Basins, which were developed by the National Remote Sensing Centre (NRSC) as part of the National Hydrology Project (NHP).
- The **National Disaster Management Emergency Response Portal (NDEM)** will incorporate forecasts for future use.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding C-FLOOD system:

1. The C-FLOOD platform simulates flood situations using sophisticated 3-D hydrodynamic modelling.
2. C-FLOOD offers water level predictions and flood inundation maps with 3 days’ advance.

How many of the above given statements are correct?

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

Answer: (d)

CHINESE DAM ON BRAHMAPUTRA

Why in News: China formally started the construction of the \$167.8 billion dam over the Brahmaputra river in Tibet, closer to the Indian border in Arunachal Pradesh.

About the Dam

- **Location:** The dam is being built on the lower reaches of the Brahmaputra River at Nyingchi City in southeastern Tibet, specifically at the dam site of Nyingchi's Mainling hydropower station.
 - It is also referred to as the **Motuo Hydropower Station** and is planned for the Great Bend region of the Medog county in the Tibetan Autonomous Region (TAR).
 - The site is described as being in a **massive canyon, the world's deepest and longest on land**, where the Yarlung Tsangpo makes a sharp U-turn around the Namcha Barwa mountain, causing a significant drop in elevation.
- **Approval and Commencement:** The project was approved on December 25, 2024, and was included in China's 14th Five-Year Plan. Construction formally began on a Saturday in July 2025, with Chinese Premier Li Qiang attending the groundbreaking ceremony.
- It is regarded as the world's biggest infrastructure project and is expected to dwarf the record-breaking Three Gorges Dam on the Yangtze River.

Concerns for India

- **Potential Impact on Downstream Populations:**
 - The dam could have a potentially serious impact on millions of people downstream in India and Bangladesh.
 - Communities living along the river system may find their traditional knowledge about the river system is no longer meaningful due to magnified disaster occurrences.
 - The dam poses an **"existential threat"** to tribes and their livelihoods in areas like Arunachal Pradesh, affecting agrarian communities.
- **Water Flow Control and Diversion**
 - Experts and officials are concerned that the new dam would empower China to control or divert the trans-border Yarlung Tsangpo.
 - Control over these rivers in the Tibetan Plateau effectively gives China a chokehold on India's economy.
- **Impact on Water Levels and Monsoon Patterns**
 - There are fears that the Siang and Brahmaputra rivers could **"dry up considerably"** once the dam is completed.
 - The blocking of the perennial flow to maintain headwaters for such a mega-hydropower dam will

have catastrophic consequences on surface water levels, overall monsoon patterns, and groundwater systems of the river basin.

- **Increased Disaster Risk**
 - The pace and occurrence of disasters have magnified with mega-hydropower dam interventions.
 - There's a **risk of Glacial Lake Outburst Floods (GLOFs)**, which have increased in the Himalayas due to climate change
- **Environmental and Ecological Concerns**
 - Environmentalists have warned about the irreversible impact of such mega-projects in the **ecologically sensitive Tibetan plateau**.
 - The dam could negatively affect the sensitive ecology of the overall Himalayan bioregion/ecoregion, leading to the flooding of Tibetan valleys renowned for their biodiversity.
- **Lack of Transparency and Cooperation**
 - India has repeatedly raised concerns with China about the project and urged Beijing to ensure that the interests of the downstream states are not harmed.
 - India has emphasised the **"need for transparency and consultation with downstream countries"**.
 - Neither India nor China have signed the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses of 2014, meaning first-user rights on river systems are non-enforceable.
- **Geopolitical and Strategic Implications**
 - The project is part of an intense geopolitical power projection and a **"face-off"** between China and India in the Brahmaputra river basin.
 - Mega-dams are seen as important sovereignty markers and symbols of nation-state control.
 - The outstanding land boundary dispute between China and India is woven into the intense securitisation of the Brahmaputra river basin, making it an active site for strategic posturing.

Conclusion

India plans to build its own largest dam project at Upper Siang to act as a buffer against sudden water releases from China's dam and prevent flooding. However, a "dam for a dam" approach could turn the entire Himalayan riparian/climatic systems into a disaster-scape.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

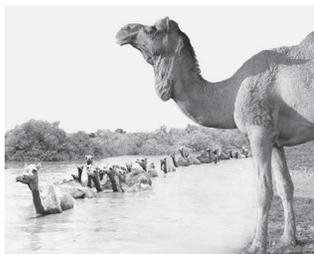
Q. What are the geopolitical and environmental implications of China's mega dam construction on the Brahmaputra? How will this massive hydropower project affect downstream nations and regional stability? [250 words] [15 marks]

KHARAI CAMEL

Why in News: A herd of 33 rare Kharai camels caught in a sea tide rescued off the Gujarat coast.

About Kharai Camel

- The Kharai camel is a remarkable breed indigenous to Gujarat, India, known for its **exceptional adaptability to both desert and coastal ecosystems**.
- Its name, “**Khara**,” meaning saline in the local language, reflects its ability to thrive in harsh saline desert environments and highly saline coastal waters.
- This unique adaptation has earned it the title “**Swimming Camel**,” due to its extraordinary capability to traverse long distances across water to graze on mangroves.
- Gujarat is currently the exclusive habitat for Kharai camels.



Ecological Adaptations and Habitat

- **Unique Adaptation:** The Kharai camel has uniquely adapted to the harsh conditions of the Rann of Kutch and the region’s shallow, highly saline coastal waters. It needs brackish water, tidal flows, and wild estuarine ecosystems to thrive.
- **Distribution:** According to the most recent census, Gujarat is home to approximately 6,200 Kharai camels. Around 2,200 of these are primarily located in the Kutch areas, including Lakhpat, Abdasa, Mundra, and Bhachau, while the rest are mainly found in South Gujarat, particularly near Aliya Bet.
- **Reliance on Mangroves:** A crucial aspect of their survival and diet is their ability to swim across salty waters to access mangrove forests. These forests are vital for protecting the coastline from erosion and supporting biodiversity. **Mangroves also act as crucial carbon sinks and serve as primary fodder for the camels.**

Cultural Significance and Livelihoods

- **Traditional Conservation:** The Kharai camel has been historically conserved by the **Rabari and Fakirani Jat tribes of Gujarat for over 400 years**, who have maintained its genetic purity. The Maldhari community, a traditional pastoralist group, has made these camels a crucial part of their livelihood, relying on them for milk, meat, and transportation.
- **Diminished Economic Value (Traditional):** While traditionally relied upon for milk and transportation,

modern transport methods have diminished their traditional economic value.

- **Ecological Custodians:** The traditional knowledge and practices of these camel pastoralists are equally important in conserving these ecosystems. They are seen as **ecological custodians of the mangroves** and creeks, knowing the best migratory routes for the animals.

Scientific Recognition and Genetic Uniqueness

- **Distinct Breed Recognition:** In 2015, the Indian Council of Agricultural Research (ICAR) recognised the Kharai camel as a distinct breed, acknowledging its unique characteristics and adaptability, which differentiate it from other camel breeds like the Kutchi camel.
- **Official Certification:** The National Bureau of Animal Genetic Resources (NBAGR) in Karnal, Haryana, officially certified the **Kharai camel as India’s ninth camel breed**. This underscores the significance of preserving its genetic diversity and vital ecological role.
- **Genetic Studies:** Recent scientific studies have revealed significant genetic diversity among camel breeds in Gujarat, identifying distinct genetic groups for the Kharai breed and highlighting its unique genetic traits that allow it to survive in saline and arid environments.

Economic Value and Products

- **Nutritional and Therapeutic Milk:** Kharai camel milk is **not only rich in nutrients but also possesses therapeutic properties**. It is being researched for its potential to treat conditions like diabetes, allergies, and autism. It contains antibodies similar to human milk, making it easily digestible and beneficial for boosting the immune system. The milk is valued for being rich in iron, vitamin C, and having insulin-like properties, which benefits people with diabetes.
- **Growing Dairy Industry Importance:** Kharai camels are gaining recognition in the dairy industry, particularly for their milk’s high nutritional value. It is beneficial for people with lactose intolerance or dairy allergies.

Threats: Habitat Loss and Environmental Degradation

- **Industrial Activities:** Mangrove habitats are under threat from industrial activities, particularly the expansion of salt pans and ports. These activities lead to mangrove deforestation and shrinking natural grazing areas.
- **Illegal Operations:** Despite court orders, illegal salt production and encroachment of creeks continue unabated. Bulldozers, fire, and illegal embankments have wiped out vast stretches of mangroves, disrupting tidal flow and killing marine life.
- **Climate Change:** Rising sea levels and changing weather patterns further endanger their delicate ecosystem.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. What is/are unique about 'Kharai camel' a breed found in India? [UPSC 2016]

1. It is capable of swimming up to three kilometres in seawater.
2. It survives by grazing on mangroves.
3. It lives in the wild and cannot be domesticated.

Select the correct answer using the code given below.

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

Answer: (a)

DOUBLING MAIZE PRODUCTION

Why in News: India is aiming to double its maize production from the current 42.3 million tonnes to 86 million tonnes by 2047.

Key Details:

- India's average maize productivity stands at 3.7 tonnes per hectare.
- States such as **West Bengal and Bihar perform above the national average.**
- Maize cultivation is attributed to economic benefits, minimal water requirements, and high nutritional value.
- Maize is referred to as the "**Queen of Grains**" because of its abundant nutritional value, which encompasses carbohydrates, proteins, vitamins, and minerals.

Reasons for Doubling maize production:

- Maize is a commodity of **high economic significance** in India.
- Its demand and production is increasing more rapidly as compared to other major commodities.
- 11th Maize Summit organised by Federation of Indian Chambers of Commerce & Industry (FICCI) emphasised the need for high-yielding, non-genetically modified seed varieties.

NOTE: In a previous estimate, India would require 50 million metric tonnes (MMT) of maize grain (32 MMT in feed sector + 15 MMT in industrial sector + 2 MMT as food + 1 MMT for seed) by 2025.

Challenges

- Prevalence of yield.
- Lower adoption of modern production technologies.

Need of the hour

- **Technological advancement:** Strong technological and policy interventions like, cultivar development and diversification, strengthening of post-harvest handling infrastructure, price stabilization mechanism, streamlining of extension system, augmenting hybrid seed delivery mechanisms, appropriate policy on genetically modified seeds.
- **Modern techniques:** Adoption of modern cultivation and protection practices including conservation agriculture technologies, incorporation of stress resilience in the germplasm, accelerating the breeding process through new tools.

Measures:

- The Indian Council of Agricultural Research (ICAR) has developed 265 maize varieties (77 hybrids and 35 bio-fortified).
- Encouraged states like **Punjab and Haryana** to shift from **water-intensive paddy cultivation to maize.**
- Likely to increase maize prices somewhere around the Minimum Support Price (MSP).
- Quick maize development programme (QMDP).
- Collaborative efforts are being made to bridge the growing demand-supply gap.

Way Forward

- **India's Viksit Krishi Sankalp Abhiyan** has engaged more than eleven thousand scientists to assist villagers in enhancing the linkage between laboratories and farms, thereby supporting maize producers.
- The maize strategy further encompasses the increased utilization for ethanol blending (E30), poultry feed, biodegradable plastics, and the transformation of paddy-growing areas in northern states such as Punjab, Uttar Pradesh, and Bihar for sustainable maize cultivation.

AI'S ROLE IN INDIA'S ENERGY TRANSITION

Why in News: According to the International Energy Agency (IEA), keeping pace with a growing economy and rapidly expanding urban landscape, India's energy demand is on the rise, with consumption expected to double by 2030.

Key Details

- Artificial Intelligence (AI) is emerging as a **critical tool for India's sustainable energy transition**, aiming to meet rising energy demand sustainably, reduce dependency on fossil fuels, increase energy security, and address air quality.
- India's energy consumption is projected to double by 2030, with a target of 500 GW of non-fossil fuel capacity by 2030 and net-zero by 2070.

Role of AI in the Energy Transition

- **Optimising Energy Management:** AI is crucial for predictive maintenance and grid balancing. It helps in **real-time forecasting, fault detection, and output optimisation for solar and wind assets.**
- **Enhancing Grid Stability and Efficiency:** Machine learning models predict renewable generation and demand fluctuations, allowing grid operators to balance energy supply and prevent shortages. AI-driven smart grids optimise energy flow by detecting faults and reducing transmission and distribution (T&D) losses, which currently stand at 20%-30% of total electricity generated in India.
- **Consumer-Facing Applications:** AI extends to real-time monitoring of energy consumption and adjusting demand response, which significantly reduces wastage and costs. By analysing consumption patterns, AI encourages energy-efficient behaviours, reducing peak-hour strain and promoting off-peak usage, a crucial capability for India given its high demand fluctuations and peak loads.
- **Predictive Analytics and Optimisation:** AI algorithms enhance efficiency by dynamically adjusting elements like turbine blade angles and solar panel orientations, leading to cost reduction and performance improvement. It also optimises energy production via predictive analytics for demand, supply, and pricing forecasts.
- **Advanced Materials and Design:** AI-driven advancements contribute to the discovery of efficient

materials for solar panels, batteries, and wind turbine components. Generative AI (GenAI) further enables advanced wind turbine design, supply chain management, optimal solar panel arrangement, and innovative energy storage solutions, accelerating R&D in renewable energy.

- **Complex Problem Solving:** The combination of GenAI, Quantum Computing (QC), and High-Performance Computing (HPC) can solve highly complex energy sector problems that were previously intractable, offering scale, speed, and accuracy.
- **Integrating Critical Technologies:** AI serves as the **"nervous system"** of modern energy infrastructure, integrating with Battery Energy Storage Systems (BESS) and hybrid renewable architectures to ensure reliability, scalability, and affordability in the energy system.

Social Dimension of AI's Role in Transition

- **Addressing Inequalities:** The transition towards integrating AI risks widening inequalities, particularly in underserved regions. For AI to be effective beyond urban centres, it must address unique rural challenges such as unreliable energy supplies and insufficient technological support.
- **Ethical Concerns:** Addressing ethical concerns such as fairness and job impacts is essential. AI advancements should be accompanied by job impact assessments and retraining programs for workers affected by automation, as seen in the United Kingdom.
- **Community Engagement and Workforce Reskilling:** Community engagement and workforce reskilling are crucial for a just energy transition across India. A collaborative effort involving government support, private investment, and community engagement is key to ensuring that AI's benefits are sustainable and accessible across urban and rural areas.

Challenges

- **Data Quality and Infrastructure:** Challenges include data quality and limited AI infrastructure. Fragmented data systems hinder the use of AI in energy forecasting and grid optimisation. Most state grids in India are outdated, with limited real-time visibility and poor forecasting ability.
- **Financial Barriers:** Smaller utilities struggle with high upfront costs and limited government support for AI adoption.

- **Policy and Regulatory Frameworks:** A lack of supportive policy frameworks and guidelines dampens investments in AI technologies. Regulatory frameworks for responsible AI deployment are essential but often lag behind technological progress, requiring precise directives for AI applications. Inconsistent policies across states, especially concerning open access, banking, and land allocation, add uncertainty for investors.
- **Skill Shortages:** There is a shortage of AI and data analytics experts, limiting the sector's ability to leverage AI solutions. The rapid growth in demand for AI specialists creates a recruitment bottleneck, with a significant shortage of skilled professionals in the energy sector, including integration engineers, AI specialists, and storage planners.
- **Cybersecurity Risks:** Growing cybersecurity risks highlight the need for robust protections. AI systems are prone to adversarial attacks that can disrupt the reliability of energy systems.

Way Forward

- **Technological Advancements and Infrastructure**
 - Implementing smart grids and smart meters, along with AI-driven software and robust cloud platforms for data storage, is essential for enhancing energy management and real-time data collection.
 - Investing in Battery Energy Storage Systems (BESS) and hybrid renewable architectures is foundational. India needs integrated policy frameworks, stable regulations, and viable business models that treat storage as a strategic grid asset.
 - Effective hybridisation requires advanced forecasting tools, time-of-day tariff structures, and regulatory frameworks that reward firm, dispatchable renewable power.
- **Human Expertise and Capacity Building**
 - Developing a skilled workforce is vital, through initiatives such as Germany's specialised training programs for machine-learning expertise among energy professionals.
 - Job impact assessments and retraining programs for workers affected by automation are necessary.
- **Comprehensive Policy Frameworks**
 - Establishing clear and consistent policies across states is crucial to remove investor uncertainty.
 - Governments and regulatory agencies must evolve and establish precise directives for deploying AI applications.
 - Support for research and development (R&D) in AI applications, exemplified by Singapore's investments, will drive innovation.
- **Cybersecurity and Data Protection:** Implementing robust cybersecurity protocols is necessary to safeguard sensitive data against potential threats.

- **System-Level Integration:** India needs to shift from siloed thinking to system-level integration.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. What are the primary benefits and existing barriers to AI adoption in India's energy sector? What strategies can ensure an equitable and sustainable AI-driven energy transition for India? [250 words] [15 marks]

LENACAPAVIR DRUG

Why in News: US FDA approves HIV prevention drug Lenacapavir.

About Lenacapavir (Yeztugo/Sunlenca)

- **Lenacapavir** is a novel **capsid inhibitor** developed by Gilead Sciences, initially approved for the treatment of multi-drug resistant HIV in December 2022 under the name Sunlenca in the U.S., EU and Canada World Health Organization.
- On **June 18, 2025**, the **U.S. Food and Drug Administration** approved **injectable lenacapavir** (brand name **Yeztugo**) for **pre-exposure prophylaxis (PrEP)** in adults and adolescents weighing at least 35 kg, to prevent sexually acquired HIV. This marks the first-ever **twice-yearly** PrEP option globally.
- Clinical trials (PURPOSE-1 & PURPOSE-2) showed **near-100% efficacy** approximately 96% in cisgender women and 100% in men who have sex with men and other gender-diverse populations.
- WHO issued guidelines on **July 14, 2025**, endorsing injectable lenacapavir as an additional PrEP option worldwide.

Understanding HIV & PrEP

- **HIV (Human Immunodeficiency Virus)** attacks the immune system, which, without treatment, can progress to **AIDS (Acquired Immunodeficiency Syndrome)**.
- **PrEP (Pre-Exposure Prophylaxis)** refers to preventive antiretroviral medications taken by HIV-negative individuals at high risk of infection.
- Before lenacapavir's approval, PrEP regimens included **daily oral Truvada/TDF-based pills**, **event-driven PrEP** and long-acting injections like **cabotegravir (Apretude)** given every 2 months.

Indian Context & Government Initiatives

Licensing & Generics

- In **late 2024**, **Indian pharmaceutical firms** (including Dr. Reddy's and Emcure) signed **royalty-free licensing agreements** with Gilead to produce **generic lenacapavir**, targeting distribution in **120 resource-limited countries** (pending regulatory approval).

- Estimates suggest potential Indian annual pricing could fall to ₹200–₹300 from roughly ₹24 lakh (US \$28,000) for imported branded injections.

National Programs & Law

- India's **National AIDS Control Organisation (NACO)**, under the Ministry of Health, has led HIV/AIDS policy and implementation through regional prevention and control societies since 1992.
- Although **PrEP is not yet part of NACO's public programmes**, pilot discussions and stakeholder advocacy are ongoing.
- In **2017**, the **Human Immunodeficiency Virus and AIDS (Prevention & Control) Act** was enacted, guaranteeing rights to healthcare access, counselling, and non-discrimination for those living with or affected by HIV/AIDS in India.

Public Health Initiatives

- The **Avahan initiative** (2003–2011), funded by the Bill & Melinda Gates Foundation, worked in partnership with Indian NGOs and government bodies to **reduce HIV transmission via targeted interventions** (condom promotion, STI treatment, peer education), and helped lower community-level infection rates by ~50%, possibly preventing 6,00,000 cases in targeted states Wikipedia.
- Ongoing **NACO strategies** include prevention outreach, testing camps, ART distribution, blood safety monitoring, and anti-stigma education with partners like ICMR and TeachAids.

Way Forward

- Awaiting Indian regulatory approval for generic lenacapavir and possible inclusion in national PrEP programmes.
- **Advocacy groups emphasize urgency:** price reduction, equitable rollout to vulnerable communities, and expansion of infrastructure.
- Continued efforts from initiatives like Avahan, existing NACO frameworks, legal protections, and international partnerships will be crucial to integrate lenacapavir effectively.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following best describes Lenacapavir?

- (a) A protease inhibitor used to treat influenza
- (b) A capsid inhibitor used for HIV prevention and treatment
- (c) A vaccine candidate for tuberculosis
- (d) A monoclonal antibody for COVID-19

Answer: (b)

SMALL SATELLITE LAUNCH VEHICLE (SSLV)

Why in News: The Hindustan Aeronautics Limited has bagged a Transfer of Technology (ToT) deal, from the Indian Space Research Organisation, to build and operate Small Satellite Launch Vehicles (SSLVs).

Small Satellite Launch Vehicle (SSLV)

- Small Satellite Launch Vehicle (SSLV) is a 3 stage Launch Vehicle configured with three Solid Propulsion Stages and a liquid propulsion-based **Velocity Trimming Module (VTM)** as a terminal stage.
- SSLV is 2m in diameter and 34m in length, with a lift-off weight of ~120 tonnes.
- SSLV is capable of launching a ~500kg satellite in 500km planar orbit from the Satish Dhawan Space Centre.
- The key features of SSLV are Low cost, with low turnaround time, flexibility in accommodating multiple satellites, Launch on demand feasibility, minimal launch infrastructure requirements, etc.

Steps by the Government to Promote Private Players in the Space Sector

- The space sector has been liberalised and the private sector is allowed to carry out end-to-end space activities.
- **Indian National Space Promotion and Authorization Centre (IN-SPACe)** was created in Department of Space for promoting, authorising and overseeing the activities of Non-Government Entities (NGEs) in Space Sector.
- The Indian Space Policy, 2023 has been formulated by the Government to provide regulatory certainty to space activities by various stakeholders, in order to create a thriving space ecosystem.
- Various schemes to encourage and hand hold private sector also announced and implemented by IN-SPACe, i.e., **Seed fund Scheme, Pricing Support Policy, Mentorship support, Technical Centre, Design Lab for NGEs, Skill Development in Space Sector, ISRO facility utilisation support, Technology Transfer to NGEs**, creation of IN-SPACe Digital Platform to connect with all the stakeholders of space ecosystem etc.
- The number of Space Start-Ups have gone up, from just 1 in 2014 to around 266 as on date.
- Decadal vision and strategy for Indian space economy is also announced by IN-SPACe, which shall increase the share of India in overall space economy.
- The Union Cabinet has approved the establishment of a Rs.1,000 crore Venture Capital (VC) Fund dedicated to supporting India's space sector.
- **IN-SPACe has signed around 71 MoUs with Non-Government Entities (NGEs)** to provide necessary support for the realisation of space systems and applications envisaged by such NGEs, which is expected to increase the industry participation in manufacturing of launch vehicles and satellites.

- In order to ease access to foreign capital by Indian NGEs, the Central Government has brought out revised FDI policy for Space Sector.
- IN-SPACe has initiated the Establishment of Earth Observation (EO) System under Public Private Partnership (PPP). The Expression of Interest (EOI) is invited from Non-Government Entities (NGEs).
- **Technology Transfer** of Small Satellite Launch Vehicle (SSLV) to Indian entities is under process and response to RFP is invited from shortlisted bidders.
- Announcement of Opportunity is made by IN-SPACe for making available Indian orbital resources to the NGEs.

Significance of the Private Sector in Indian Space

- **Economic Impact and Growth:** The Indian space economy, currently valued at \$8.4 billion, is estimated to grow to \$44 billion in the next ten years. This growth is projected to occur at its current level. The private sector is seen as a critical player in realising this \$44 billion target by 2033.
 - Private sector investment alone amounted to \$12.5 billion in space companies globally in 2023.
 - The increased private participation is expected to attract investments and accelerate national ambitions in space.
 - It will also bring in more Foreign Direct Investment (FDI) to India.
- **Technological Advancement and Self-Reliance**
 - Changed FDI norms allow big companies to invest freely and explore new technologies.
 - This will enable the transfer of modern technologies, moving India’s private sector towards greater self-reliance.
 - The ‘**Make in India**’ campaign, coupled with ‘**Atmanirbhar Bharat**’, promotes domestic production by adding value through more manufacturing facilities within the country.
 - The private sector brings in funds and talent, helping to address issues like “**brain drain**”.
- **Global Integration and Competitiveness**
 - Indian industries will gain a greater opportunity for integration into the global space industry, enhancing their competitiveness and market orientation.
 - The move towards private sector involvement places India in the same league as major spacefaring nations internationally.
 - It signals a powerful message of India’s growing market space and its intent to advance in crucial sectors.
- **Political and Societal Externalities**
 - Beyond technological edge, private sector companies are anticipated to change India’s political landscape both domestically and internationally.

- Domestically, more companies will cooperate and compete with global partners, leading to efficient functioning.
- Positive externalities include boosts to technology, skill development, employment generation, and entrepreneurship.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the Small Satellite Launch Vehicle (SSLV):

1. SSLV is designed by ISRO to carry payloads of up to 500 kg to Low Earth Orbit (LEO).
2. SSLV requires significantly less turnaround time and can be assembled in less than a week.

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)

3 PARENTS BABY

Why in News: Mitochondrial Replacement Treatment (MRT), a cutting-edge fertility method that combines the DNA of three people to stop the spread of inherited mitochondrial diseases, has resulted in the birth of at least eight children in the UK.

Key Details

- The technique **prevents severe and frequently fatal conditions associated with mitochondrial defects** by substituting healthy mitochondria from a donor for defective ones in a mother’s egg.
- These infants have a tiny amount of **mitochondrial DNA from a female donor in addition to nuclear DNA from their biological parents.**

Mitochondria

- The double-membrane-bound organelles known as mitochondria are **present in the cytoplasm of almost all eukaryotic cells.**
- They are commonly referred to as the “**powerhouse of the cell**” because they **generate the majority of adenosine triphosphate (ATP)**, the primary energy source for cellular events.

Mitochondrial diseases

- During sexual reproduction, the father’s mtDNA is destroyed, and **only the mother’s mtDNA is passed on to the offspring.**

- When a mother is homoplasmic for a pathogenic mutation, each and every one of her children will have the same mutation in their mtDNA.
- A heteroplasmic mother's offspring will have varying amounts of pathogenic, mutated mtDNA, with some mutated and some normal.
- Though **mtDNA diseases** can differ greatly from patient to patient due to the intricacy of mitochondrial biology, they are frequently **crippling, progressive, and early-life fatal**.
- **Muscle weakness, extreme exhaustion, seizures, developmental delays, heart issues, and gastrointestinal disorders** are typical signs of mtDNA disease.
- Because these illnesses frequently exhibit symptoms that are similar to those of other conditions, diagnosis can be challenging, and testing necessitates an integrated approach that may involve genetic, metabolic, and muscle tests.

Mitochondrial Replacement Techniques

- Mitochondrial replacement therapy (MRT) aims to **prevent the transmission of mitochondrial DNA (mtDNA) disorders from mothers**.
- In vitro fertilisation (IVF) using MRT involves **removing the intended mother's nDNA from her oocyte or zygote, which contains mutated mtDNA, and transferring it into the oocyte or zygote of a female provider, which contains nonpathogenic mtDNA**.

- There should be no personal history, family history, or genetic proof of mutated, harmful mtDNA in the woman donating the oocytes.
- By using these methods, **intended mothers might be able to have a child who shares their nuclear DNA (nDNA) without inheriting their harmful mtDNA**.
- As a result, the mother, father, and donor woman all give their DNA to the child. Nevertheless, **less than 1% of the child's genetic makeup comes from the donor**.
- As of right now, the infants born in the UK via MRT are healthy and do not exhibit any symptoms of mitochondrial disease.
- Early findings are "very promising," according to doctors, but more extensive long-term monitoring is required.

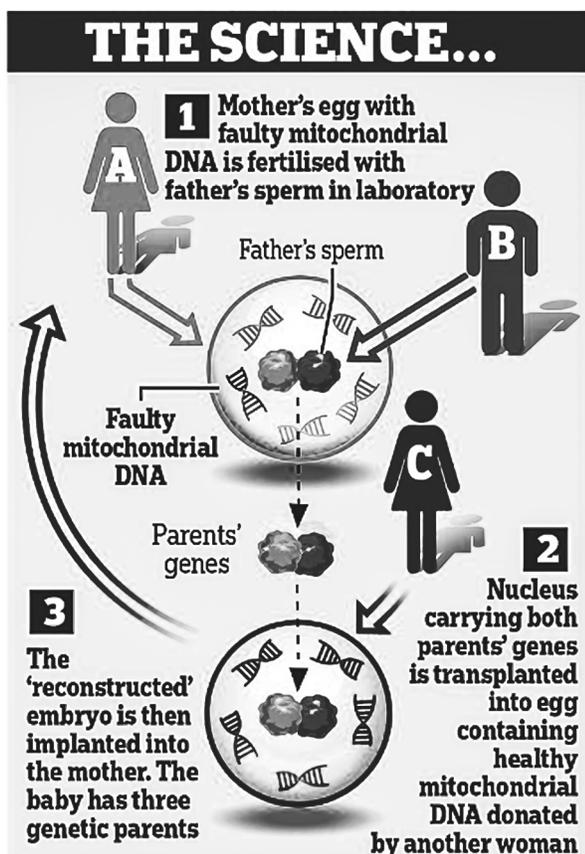
Conclusion

Mitochondrial Replacement Treatment (MRT) represents a revolutionary leap in reproductive medicine offering families a chance to prevent the transmission of deadly mitochondrial diseases. Though ethically debated, its early success in the UK under strict regulation underscores how science, when paired with oversight, can give life without passing on suffering.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Explain the process of mitochondrial replacement therapy (MRT) and its relevance in preventing maternally inherited mitochondrial diseases. [250 words] [15 marks]



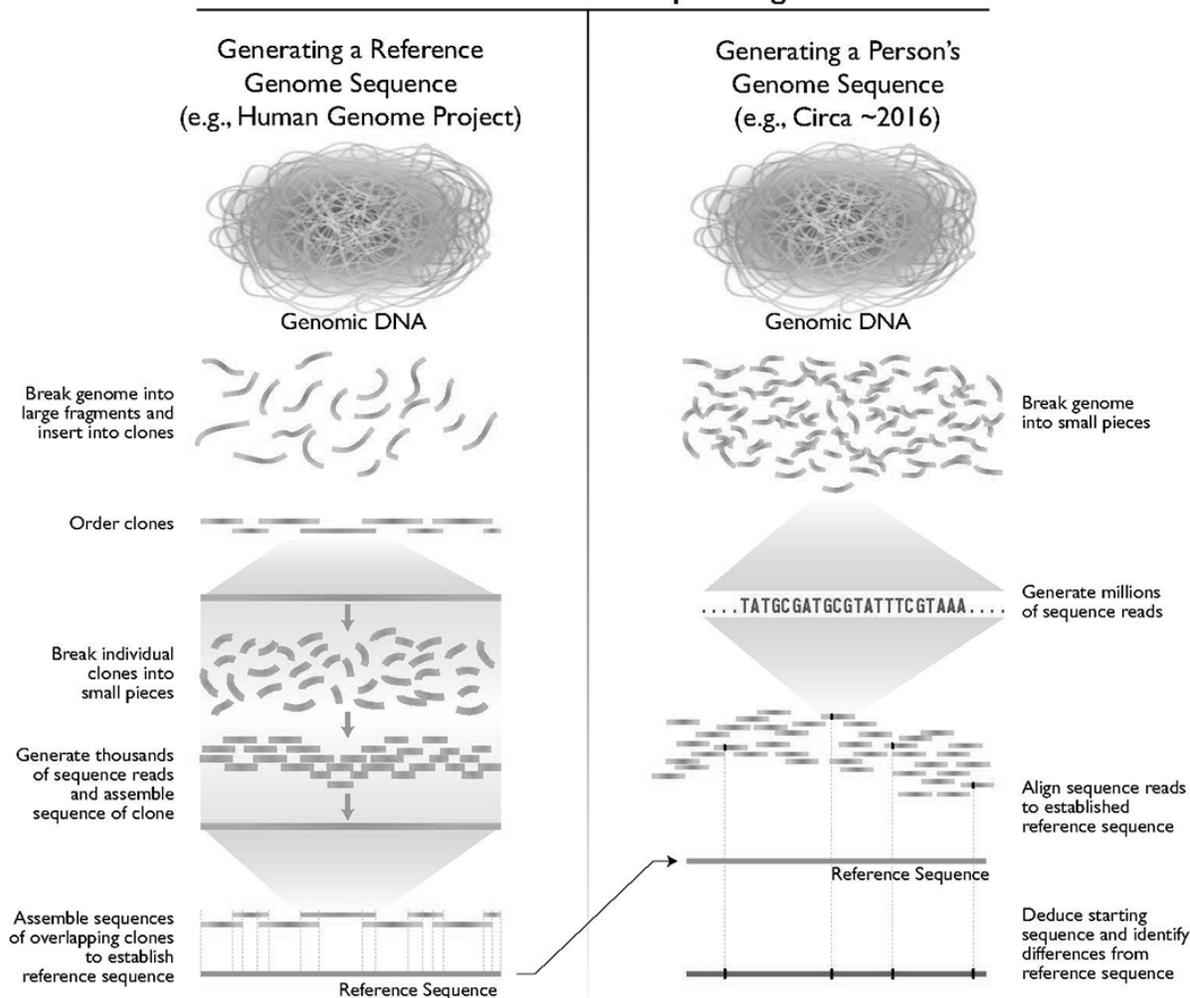
SYNTHETIC HUMAN GENOME PROJECT

Why in News: The United Kingdom has officially launched the Synthetic Human Genome Project, an ambitious initiative aimed at constructing human DNA entirely from scratch using chemical synthesis.

Key Details

- In a quiet lab in the UK, a bold scientific experiment is taking its first steps one that could fundamentally reshape how we treat disease, understand life, and even redefine what it means to be human.
- Backed by the world's largest medical charity, researchers are working to build segments of human DNA molecule by molecule, representing a significant advance in synthetic biology.
- For supporters, it holds historic promise a potential leap forward in combating incurable illnesses and

Human Genome Sequencing



Conclusion

Gujarat's Tribal Genome Project is a vital step toward improving tribal healthcare through early detection of genetic disorders and advancing personalized treatment solutions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, which Indian state launched India's first tribal genome project?

- (a) Gujarat
- (b) Chattisgarh
- (c) Jharkhand
- (d) Assam

Answer: (a)

ADFALCIVAX

Why in News: India is developing an Indigenous Multi-Stage Malaria Vaccine named AdFalcivax.

Key Details

- The Indian Council of Medical Research (ICMR) through its RMRC, Bhubaneswar, in **collaboration with NIMR and DBT NII** is developing a novel recombinant chimeric multi-stage malaria vaccine, named **AdFalcivax**.
- AdFalcivax is designed to target two critical stages of *Plasmodium falciparum* the pre-erythrocytic (liver) stage and the **sexual (transmission) stage** thus, aiming to both protect individuals and curtail community transmission.
- Promising preclinical results show high efficacy in animal models, alongside potential long-term immunity and reduced immune evasion risks.
- The vaccine uses *Lactococcus lactis* as a production platform food-grade and scalable and the formulation retains stability at room temperature for over nine months, easing logistics.

About Multi-Stage Malaria Vaccine – AdFalcivax

- Vaccine Type:** It is a chimeric recombinant vaccine, combining antigenic components from different stages of the malaria parasite to elicit a dual immune response.

- **Targets:**
 - **Pre-erythrocytic (liver) stage:** Using full-length CSP (circumsporozoite protein) to provide individual protection.
 - **Sexual (transmission) stage:** Incorporates a fusion of Pfs230 and Pfs48/45 (sometimes called Pro6C), designed to block parasite development in mosquitoes and halt transmission.
- **Platform:** It employs safe alum adjuvant and scalable *Lactococcus lactis* production—a combination that enhances stability and safety.
- **Advantages:**
 - Broader immune response and durability.
 - Thermal stability reduces cold-chain requirement.
 - Low production costs enable wider access.
 - Licensing model promotes rapid scale-up under Make in India.

PRELIMS SPECIAL

Malaria: Disease Overview

- **Cause:** Malaria is a life-threatening parasitic disease caused by *Plasmodium* species (notably *falciparum* and *vivax*), transmitted via bites from infected female *Anopheles* mosquitoes.
- **Symptoms & Severity:** Symptoms include fever, chills, headache, fatigue, nausea; severe cases may lead to seizures, organ failure, cerebral malaria, or death.
- **Global Burden:**
 - Approximately 249–263 million cases and ~600,000 deaths occurred globally in recent years, predominantly in sub-Saharan Africa, but substantial numbers also in Asia and Latin America.
- **India's Progress:**
 - Cases in India dropped sharply from 11.69 lakh (1.17 million) in 2015 to 2.27 lakh in 2023, with deaths falling similarly from ~384 to ~83.
 - India exited the WHO's High Burden to High Impact (HBHI) category in 2024, signaling significant reductions. In the South-East Asia region, India accounted for over 65% of cases, and 52% of deaths outside sub-Saharan Africa, as of 2022.
- **Elimination Strategy:**
 - India's National Framework for Malaria Elimination (2016–2030) targets a malaria-free status by 2027–2030, with intensified strategies in high-burden states like Chhattisgarh, Odisha, Jharkhand, and MP.

Summary

- AdFalcivax stands out as a promising multi-stage malaria vaccine candidate—designed to protect individuals and block transmission through safe, low-cost, and thermally stable technology.
- Supported by prestigious Indian research bodies, it's poised for commercialization and clinical trials soon.

- Meanwhile, India's strengthened elimination efforts have yielded dramatic reductions in malaria burden, bringing the goal of a malaria-free nation within reach.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding AdFalcivax:

1. It is an indigenous malaria vaccine candidate developed by ICMR in collaboration with DBT–NIH.
2. The vaccine targets both the pre-erythrocytic and transmission stages of *Plasmodium falciparum*.
3. It requires ultra-cold storage of -70 C , similar to mRNA COVID-19 vaccines.
4. The production platform for the vaccine is *Lactococcus lactis*, a food-grade bacterium.
5. The estimated cost per dose of AdFalcivax is significantly lower than that of currently available malaria vaccines like RTSS.

Which of the above statements are correct?

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

(b) Answer

ARBOVIRAL DISEASES

Why in News: The World Health Organization (WHO) has published new guidelines to support health-care providers caring for patients with suspected or confirmed arboviral diseases, such as dengue, chikungunya, Zika and yellow fever. This is the first time WHO has published global guidelines that cover all four diseases.

About Arboviral Diseases

- Arboviral diseases are infections caused by viruses transmitted to humans through the bite of arthropods, such as **mosquitoes and ticks**.
- These diseases can cause a variety of symptoms, ranging from a **mild fever and rash to severe brain inflammation and bleeding**.
- Common arboviral diseases include Chikungunya, Dengue, Yellow Fever, and Zika, which are primarily spread by *Aedes* spp. mosquitoes, particularly *Aedes aegypti* and *Aedes albopictus*.
- These diseases are prevalent worldwide, particularly in **tropical and subtropical regions**, and can lead to outbreaks and epidemics, as well as a significant public health concern.

- Prevention and control of these diseases depend on the surveillance of the viruses and their vectors, as well as protection from mosquito bites.

Dengue

- **Cause:** Infection with one of four dengue virus serotypes (Orthoflavivirus dengue 1-4), belonging to the family Flaviviridae.
- **Symptoms:** Most infected individuals are asymptomatic, but symptomatic cases typically experience an abrupt onset of high fever, body aches, arthralgia, retro-orbital headache, rash, and nausea. Symptoms usually last 2–7 days, starting with a febrile phase.
- **Treatment:** No specific antiviral treatments exist; medications are used for pain and fever management. Non-steroidal anti-inflammatory drugs (NSAIDs) are generally avoided due to bleeding risk.
- **Prevention:** Avoidance of mosquito bites and community-level mosquito vector reduction. Vaccines are available, but their use has been limited.

Chikungunya

- **Cause:** Infection with chikungunya virus (Alphavirus chikungunya), from the family Togaviridae.
- **Symptoms:** More than half of infected patients experience symptoms, typically fever and severe, sometimes incapacitating arthralgia. Onset is usually 4–8 days post-mosquito bite.
- **Treatment:** No specific antiviral treatments; medications manage pain and fever. One vaccine is approved in the USA and Europe but is not widely available for public health use.

Zika

- **Cause:** Infection with Zika virus (Orthoflavivirus zikaense), from the family, Flaviviridae.
- **Symptoms:** Most infected individuals are asymptomatic. Symptomatic cases typically exhibit rash with pruritus, conjunctivitis, fever, myalgia, arthralgia, malaise, and headache, lasting 2–7 days.
- **Transmission:** Primarily by Aedes mosquitoes, but also via mother-to-fetus transmission during pregnancy, sexual contact, and blood product transfusion.
- **Treatment:** No vaccine or antivirals are currently available.

Yellow Fever

- **Cause:** Infection with the yellow fever virus (Orthoflavivirus flavi), from the family Flaviviridae.
- **Transmission:** Through bites of infected mosquitoes, primarily Aedes, Haemagogus, and Sabethes species.
- **Symptoms:** Many are asymptomatic. Symptomatic cases usually experience fever, muscle pain (prominent backache), headache, loss of appetite, and nausea or vomiting, resolving in 3–4 days.

- **Prevention:** Vaccination is the most effective preventive measure, providing lifelong immunity.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following regarding Arboviral diseases:

1. They are caused by viruses transmitted through arthropods such as mosquitoes, ticks, and sandflies.
2. Dengue, Chikungunya, and Yellow Fever are examples of arboviral diseases.
3. Arboviruses can be transmitted directly from person to person without the involvement of a vector.

Which of the statements given above are correct?

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

Answer: (a)

NOBLE ROT PHENOMENON AND A FUNGAL CHROMOSOME MYSTERY

Why in News: Researchers from Sichuan University and the University of British Columbia have found that botrytis fungi cannot be cloned.

Noble Rot (*Botrytis cinerea*) in Winemaking

- **Definition and Function:** ‘Noble rot’ is an esteemed name for the fungus *Botrytis cinerea*. It infects grapes, penetrating their skin and causing the berries to lose water through evaporation and shrivel up. This process leads to a concentration of sugars and flavours within the grapes.
- **Harvesting and Cost:** Due to the selective infection of only a small percentage of grapes, the affected berries must be picked by hand, making the process labour-intensive and significantly increasing production costs.

Chromosome Anomaly

- **General Biological Principle:** In most animals, plants, and fungi, the nucleus of a cell typically contains one or more complete sets of all the organism’s chromosomes. This property is fundamental to processes like cloning, where a nucleus with all DNA instructions can be used to develop a new organism.
- **The Exception:** Contrary to this established principle, *Botrytis cinerea* (noble rot) and another fungus, *Sclerotinia sclerotiorum*, cannot be cloned.
- **The Recent Discovery**
 - A team of researchers from Sichuan University and the University of British Columbia made a discovery

that challenges established chromosome biology: in these fungi, **no single nucleus contains a complete set of chromosomes.**

- Instead, the chromosome set is distributed across two or more nuclei, and any one nucleus contains only a subset of the chromosomes.

Botrytis Fungi

- **Botrytis fungi**, particularly the species complex *Botrytis cinerea*, are opportunistic pathogens that **cause severe damage** in many nursery crops, especially in **cool, moist areas.**
- **Appearance:** The clusters of light grey or almost colourless spores at the end of dark brown stalks can be easily seen with a 10x hand lens. Small black resting structures called sclerotia may also be evident on dead plant tissue.
- **Host Range:** Botrytis diseases, particularly those caused by *B. cinerea*, are among the most common and widely distributed diseases affecting ornamental, fruit, and vegetable crops. It is arguably the most common disease in nursery crops.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Botrytis fungi:

1. Botrytis cinerea is a necrotrophic fungus that primarily infects plants, causing grey mold disease.
2. It thrives in warm and dry conditions, which facilitate spore germination.
3. The fungus can also play a beneficial role in viticulture by producing “noble rot” in grapes used for certain dessert wines.

Which of the statements given above is/are correct?

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

Answer: (c)

KAKRAPAR ATOMIC POWER STATION

Why in News: Atomic energy board grants operational licence to two home-built 700 MWe reactors in Gujarat.

Key Details

- The Atomic Energy Regulatory Board (AERB) has approved a five-year operational licence for Kakrapar Atomic Power Station Units 3 and 4 in Gujarat.
- Both units are indigenously developed 700 MWe Pressurised Heavy Water Reactors (PHWRs), marking a major achievement for India’s nuclear energy sector.

Details from the AERB Licence Approval

- **Units:** KAPS-3 and KAPS-4
- **Capacity:** 700 MWe each

- **Location:** Kakrapar, Gujarat
- **Developer & Operator:** Nuclear Power Corporation of India Ltd (NPCIL)
- **Technology:** Indigenous PHWR (Generation III+)
- **Significance:**
 - First time AERB has issued an operational licence to *indigenously designed and built reactors.*
 - Follows years of extensive safety reviews, regulatory scrutiny, and commissioning checks.
 - Ensures operational safety and reliability in compliance with international nuclear standards.
 - **Geopolitical Importance:**
 - ◆ Reduces reliance on imported fossil fuels.
 - ◆ Strengthens India’s energy security and indigenous technology base.

About Pressurised Heavy Water Reactors (PHWRs)

- **Design:** PHWRs use natural uranium as fuel and heavy water (D₂O) as both moderator and coolant.
- **Advantages:**
 - Can use unenriched uranium, reducing fuel costs.
 - Offers better neutron economy due to heavy water.
 - Modular and scalable – suitable for Indian infrastructure.
- **Indian Innovation:**
 - India began with small PHWRs (220 MWe), later scaled up to 540 MWe and now to 700 MWe (IPHWR-700).
 - The IPHWR-700 design includes enhanced safety features like passive decay heat removal, containment spray systems, and double containment walls.

PRELIMS SPECIAL

Overview of India’s Nuclear Energy Programme

- India’s nuclear programme follows a three-stage strategy devised by Dr. Homi Bhabha, tailored to utilize India’s vast thorium reserves and limited uranium.
 - **Stage I:** PHWRs using natural uranium

Current fleet includes 220, 540 and 700 MWe PHWRs. Produces plutonium as a byproduct.

- **Stage II:** Fast Breeder Reactors (FBRs)

Uses plutonium from Stage I. Generates more fuel than it consumes. Example: Prototype Fast Breeder Reactor (PFBR) at Kalpakkam (in commissioning phase).

- **Stage III:** Thorium-based Reactors

Uses thorium-232 to produce uranium-233. Aims for energy independence using abundant thorium.

Conclusion

- The operational licensing of KAPS-3 and KAPS-4 marks a pivotal step in India’s nuclear journey. It reaffirms India’s technical capabilities in reactor design and safety management.

- The home-grown 700 MWe PHWRs not only demonstrate self-reliance but also provide a scalable, clean energy solution as India pushes toward a carbon-neutral future.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding India's indigenous 700 MWe Pressurised Heavy Water Reactors (PHWRs):

1. The 700 MWe PHWRs at Kakrapar are the first reactors in India to be fully designed, constructed, and licensed indigenously.
2. Pressurised Heavy Water Reactors in India use enriched uranium as fuel and light water as both coolant and moderator.
3. The commissioning of Kakrapar Units 3 and 4 is a key milestone in India's first stage of the nuclear energy programme.
4. The Nuclear Power Corporation of India Limited (NPCIL) is the regulatory authority that granted the operational licence to these reactors.

Which of the statements given above are correct?

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

Answer: (a)

MVIS SYSTEM

Why in News: To improve service efficiency and automate maintenance in the rail industry, Indian Railways recently inked a Memorandum of Understanding with DFCCIL to implement an AI/ML-based inspection system.

Key Details

- The MVIS system seeks to **prevent accidents and service interruptions, decrease manual inspections, and greatly improve train operation safety.**
- An important step towards the **creation of a future-ready rail infrastructure** and the digital transformation of rail safety is the signing of this Memorandum of Understanding.

Machine Vision-Based Inspection System (MVIS)

- The machine vision-based inspection system (MVIS) **automatically detects anomalies** like hanging, loose, or missing components by **using artificial intelligence and machine learning (AI/ML) to take high-resolution pictures** of the undercarriage of moving trains.
- After that, the system **instantly notifies the appropriate authorities in real-time**, facilitating prompt action and preventative measures.
- It promises to **prevent accidents and service interruptions**, drastically increase train operation safety, and decrease manual inspections.

- Wagons, coaches, Vande Bharath, metros, EMUs, and LRTs are all covered by MVIS.

Features of MVIS System

- Trains entering and leaving the MVIS zone are detected.
- Camera and lighting systems are automatically turned on and off to collect data.
- Using a camera-based system, raw data from side and under views is collected and stored.
- Defect identification using data generated by cameras.
- Information is displayed **on the dashboard, including train details, descriptions, and images of defects.**

Benefits

- Determine flaws (alerts generated) quickly by using the position and number of the wagon.
- Supplying proof of the health of the assets.
- **Ensuring rake safety** when entering and leaving the yard.
- Wagon health is tracked in **real time using GUI** and SMS alerts.
- Delivering immediate notifications to prevent mishaps.
- A dashboard displaying an advanced management information system.

Conclusion

The MVIS system marks a significant step in modernizing railway safety through AI and automation. By enabling real-time defect detection and reducing manual inspections, it enhances operational efficiency, accident prevention, and infrastructure reliability.

BLACK HOLE MERGER

Why in News: An international network of gravitational wave observatories has reported the detection of the merger of two black holes that are the biggest that have ever been observed in this kind of event.

Overview of the Discovery

- **Nature of the Event:** Scientists have detected signals from the merger of two black holes, an event that actually occurred billions of years ago. This discovery, named GW231123, is exceptional because it involves the biggest black holes observed in this type of event.
- **Detection Method:** The detection of gravitational waves from GW231123 was made by the LVK network of observatories.
- **Signal Characteristics:** The detected signal was incredibly short, lasting just a tenth of a second, and initially presented a puzzle to scientists. However, it matched the waveform predicted for merging black holes by Einstein's general relativity.
- **The Black Holes Involved**
 - **Masses of Merging Black Holes:** The two black holes

that merged were colossal, with one being 140 times more massive than the Sun and the other 100 times bigger.

- **Resulting Black Hole:** Their merger resulted in a new black hole estimated to be about 225 times the size of the Sun.
- **Unique Characteristics:** In addition to their immense mass, these black holes were spinning incredibly fast, making the signal uniquely challenging to interpret. This characteristic suggests a potentially complex formation history.

Black Hole

- Black holes are huge concentrations of matter packed into very tiny spaces. A black hole is so dense that gravity just beneath its surface, the event horizon, is strong enough that nothing—not even light—can escape.
- The event horizon isn't a surface like Earth's or even the Sun's. It's a boundary that contains all the matter that makes up the black hole.

Types of Black Holes

- Black holes are generally classified in three categories according to their mass: stellar-mass, supermassive, and intermediate-mass.
- **Stellar**
 - When a star with more than eight times the Sun's mass runs out of fuel, its core collapses, rebounds, and explodes as a supernova.
 - What's left behind depends on the star's mass before the explosion.
 - If it was near the threshold, it creates a city-sized, superdense neutron star.

- If it had around 20 times the Sun's mass or more, the star's core collapses into a stellar-mass black hole.
- The masses of these newly born objects can range from a few to hundreds of times the Sun's mass, depending on the star's mass when the supernova began.
- Stellar-mass black holes can continue to gain mass through collisions with stars and other black holes.

- **Supermassive**

- Almost every large galaxy, including our Milky Way, has a supermassive black hole at its center.
- They have hundreds of thousands to billions of times the Sun's mass.
- While their origins are mysterious, scientists know supermassive black holes can grow by feeding on smaller objects, like their stellar-mass relatives and neutron stars. They can also merge with other supermassive black holes when galaxies collide.

- **Intermediate**

- Scientists theorize that a continuum of sizes should exist, suggesting that collisions between stellar-mass black holes over cosmic time should have created intermediate-mass black holes.
- These "missing-link" black holes are expected to range from around one hundred to hundreds of thousands of times the Sun's mass.

- **Primordial**

- Scientists theorize that primordial black holes formed during the first second after the birth of the universe. During this fleeting moment, pockets of hot material may have been dense enough to collapse into black holes.
- **No definitive proof** of the existence of primordial black holes has been found yet, 13.8 billion years after their theoretical formation.

DIGITAL ARREST

Why in News: Recently, a West Bengal court sentenced nine people to life imprisonment for their involvement in a digital arrest scam.

Key Details

- This is among the **first such convictions in India and the first in West Bengal**. The 70-year-old victim lost ₹1 crore and was digitally arrested for almost seven days. On November 6, 2024, the victim lodged a complaint at Kalyani, Ranaghat Police Station. According to the victim, he was asked to deposit money into various accounts by a **WhatsApp caller who identified himself as SI Hemraj Koli of Andheri PS, Mumbai**.
- It was found that the calls were made from Cambodia, and money was siphoned through multiple accounts whose owners were spread across the country. But later the police realised that the calls were being rerouted through Cambodia, but the origin was in India.
- All the 9 accused have been convicted under various sections of the **Indian Penal Code (IPC) and sections 66C and 66D of the Information Technology Act**.

About Digital Arrest

- Digital arrest is a scam designed to extort money from victims using fear, deceit, and intimidation. Fraudsters impersonate law enforcement officials, using threats of arrest, frozen bank accounts, and passport cancellations to coerce victims into paying a “fine” or “security deposit” to avoid legal action.

Why Does it Happen?

From phishing emails to financial fraud and ransomware attacks, cybercriminals use various tactics to steal data and money. But why do these scams keep happening? What makes them so effective? Let's explore the key reasons behind cyber scams and how we can protect ourselves from falling victim.

- **Human Psychology & Social Engineering:** One of the biggest reasons cyber scams succeed is human error. Cybercriminals use social engineering tactics to manipulate people into revealing sensitive information. Many people are unaware of common scam techniques, making them easy targets. Fraudsters also exploit emotions like fear (threatening legal action), excitement (fake lottery wins), or urgency (fake emergency fund

requests). Cybercriminals often impersonate trusted sources such as banks, government agencies, or even close friends.

- **Weak Cybersecurity Practices:** Cybercriminals often exploit poor security habits, making it easier for them to access personal or financial data. Common weaknesses include weak password and credentials use, unpatched software and system and poor security hygiene.
- **Digital Payments & Financial Fraud Risks:** With the rise of digital transactions, cybercriminals have developed sophisticated methods to exploit online payment systems like fake UPI requests & QR codes, card skimming & SIM swaps and crypto & investment scams.
- **Dark Web & Cybercrime Networks:** The dark web serves as a marketplace for stolen data, malware tools, and illegal activities. Cybercrime has become an organized industry where criminals buy and sell stolen data and identity theft, organised cyber-crime syndicates and also offer Ransomware-as-a-Service (RaaS) as well.
- **Lack of Strong Cyber Laws & Enforcement:** Despite increasing cyber threats, many scams go unpunished due to slow law enforcement response, cross border crime challenges and lack of cybercrime awareness and policies.

India's Fight Against Cyber Crime and Digital Arrest

In response to the growing menace of cybercrime, the Indian government has ramped up efforts to combat digital fraud.

Key initiatives include:

- **Indian Cyber Crime Coordination Centre (I4C):** Established by the Ministry of Home Affairs, this center coordinates national efforts to combat cybercrime and provide cybercrime prevention resources.
- **National Cyber Crime Reporting Portal:** A dedicated portal allows the public to report cybercrimes, with a focus on cases involving women and children, enabling swift action by law enforcement.
- **Financial Cyber Fraud Reporting System:** Launched in 2021, this platform has successfully saved over ₹3431 Crore across 9.94 lakh complaints by allowing immediate reporting of financial frauds.
- **Cyber Forensic Labs:** The National Cyber Forensic Laboratory in Delhi and the Evidence Lab in Hyderabad have significantly improved the ability of police to manage and analyze digital evidence.
- **Training through CyTrain:** I4C's online platform trains law enforcement and judicial officers on investigating and

prosecuting cybercrime, with over 98,000 police officers trained so far.

- **Public Awareness Campaigns:** The government has implemented awareness campaigns through SMS, social media, Cyber Dost, SancharSathi portal and app, and even digital displays in public spaces like metro stations and airports, promoting cyber safety and security.

Conclusion

The recent conviction in the West Bengal digital arrest scam **highlights the growing threat of sophisticated cyber frauds in India.** Such scams exploit fear and trust through social engineering, weak cybersecurity practices, and cross-border networks. In response, India has strengthened its cybercrime infrastructure through initiatives like **I4C, online reporting portals, cyber forensic labs, and extensive training and awareness campaigns.** However, continued vigilance, public awareness, and stronger law enforcement are essential to effectively combat such evolving digital threats.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. The increasing incidence of digital scams like 'digital arrest' reflects the evolving nature of cybercrime in India. Examine the underlying factors responsible for the success of such scams and evaluate the measures taken by the Indian government to counter them. [250 Words] [15 Marks]

INDIAN ARMY MODERNISATION DRIVE

Why in News: The Indian Army is embarking on a comprehensive modernisation drive to transform its capabilities across multiple domains, from hypersonic weapons to soldier systems, as it prepares for future warfare challenges.

Key Pillars of Modernisation

- **Ultra-Fast and Highly Manoeuvrable Weapon Systems**
 - The Army's first priority is the development of "ultra-fast and highly manoeuvrable weapon systems".
 - This includes hypersonic glide vehicles, hypersonic air-breathing engines (HEBs), and advanced fourth, fifth, and sixth-generation missiles.
 - The objective is to "change the deterrence equation".
 - India has recently test-fired a new Mach 8 hypersonic missile.
- **Precision-Guided Munitions (PGMs)**
 - There is an emphasis on transitioning from conventional "dump category" ammunition to smart, precision-guided munitions.
 - The plan specifically focuses on loitering ammunition and precision-guided munitions to reduce collateral damage and enhance the Army's surgical strike capabilities.
 - Examples of domestic manufacturing efforts include Indian startup Flying Wedge Defence and Aerospace unveiling a loitering munition with a 100-kilometre range, and the Indian Army placing a \$16-million order for mini drones from domestic manufacturer ideaForge.
- **Directed Energy Weapons (DEWs)**
 - The service is investing heavily in directed energy weapons, such as high-energy lasers and microwave systems.
 - These systems are intended for drone defence/counter-drone operations, anti-missile systems, and anti-satellite capabilities.
 - India also plans to acquire homegrown directed energy weapons to strengthen its counter-drone defence.
- **Electronic Warfare and Cyber Capabilities**
 - Recognising the evolving nature of modern warfare, the Army is prioritizing robust electronic warfare and cyber capabilities.
 - A critical need for "spectrum dominance capability" is highlighted, along with cyber systems that are both offensive and defensive in nature.
 - The military is seeking next-generation cyber defence tools, autonomous electronic warfare solutions, and resilient satellite systems to maintain absolute control over space assets.
- **Individual Soldier Enhancement**
 - A significant focus, identified as the fourth pillar of modernisation, is on individual soldier enhancement through cutting-edge technology.
 - Plans include developing exoskeletons, human augmentation systems, smart body armour, and augmented reality battlefield management systems.
 - The aim is to empower individual soldiers with enhanced agility, resilience, and endurance.
 - This will involve the integration of artificial intelligence (AI) in helmets, apparel, and real-time health monitoring systems.
 - The Army envisions providing every soldier with enhanced situational awareness through digital overlays and advanced technologies, ensuring near-perfect knowledge of their surroundings.
- **Logistics Infrastructure Transformation**
 - The service is also transforming its logistics infrastructure by adopting advanced technologies such as artificial intelligence, machine learning, blockchain, Internet of Things (IoT), and integrated platforms.

- This transformation includes a focus on green and sustainable logistics, enhanced cybersecurity mechanisms, resilient supply chains, and advanced manufacturing techniques.

Collaborative Approach and Self-Reliance (Atmanirbharta)

- **Synergy Among Stakeholders**
 - Successful modernisation requires convergence between three critical pillars: military users providing clear problem statements, policymakers enabling supportive frameworks, and industry delivering innovative solutions.
 - Industry partners are the ones who must “give shape to the desires, requirements, and needs of the Indian Army, which are absolutely operational in nature”.
- **Policymaker Support and Ecosystem Development**
 - The Army is actively seeking support from policymakers for defence technology acceleration funds, fast-tracked regulatory approvals, and simplified procurement cycles.
 - There is a call for establishing technological hubs, innovation centres, and incubation facilities to create an enabling environment for military-industry collaboration.
- **Outsourcing and Domestic Manufacturing**
 - The Army intends to focus on core military functions while outsourcing specialised aspects to industry experts and visionaries.
 - The modernisation plan aligns directly with India’s self-reliance strategy, driven by the push to shift military equipment manufacturing domestically due to regional tensions.
 - Notable domestic acquisitions include a \$7.3-billion deal to buy 156 locally made Prachand light combat helicopters.

- The Apache, which is **currently in use by the military forces of the US, UK, Israel, Egypt, and now India**, was **manufactured by the US defence giant Boeing**.
- “The most up-to-date communications, navigation, sensor, and weapon systems” are installed in Apache.
- With the help of strong engines, reinforced rotor blades, and cutting-edge survivability systems, it **blends agility with battlefield durability**.
- **Even in the harshest conditions, it is made to fly low, strike quickly, and return safely.**



Features of the Apache helicopter

- **Power and Agility:** Improved rotor and engine systems increase speed and manoeuvrability.
- **Better Targeting:** High-resolution infrared imaging is available with the **Modernised Target Acquisition Designation System** that aids pilots in locating and hitting targets during the day and at night, as well as in situations where visibility is reduced by fog, dust, or rain.
- **Fire Control Radar:** In challenging combat situations, the **Longbow radar** can identify and rank several targets without being directly exposed.
- **Networking Capability:** Apache pilots can control drones in midair thanks to **real-time data sharing** and the **ability to collaborate with UAVs**.
- **Formidable 30 mm chain gun, rocket pods** that can engage several ground targets, and Hellfire missiles that are guided by laser and radar for accurate strikes.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the primary objectives and key technologies of India’s military modernisation plan. [150 words] [10 marks]

APACHE HELICOPTER

Why in News: India is all set to receive the first three of six AH-64E Apache attack helicopters from the USA.

Key Details

- Designed to deliver devastating strikes in hostile combat zones, the AH-64E Apache is one of the most **sophisticated attack helicopters** in the world.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. India sets to import ‘Apache Helicopters’ from?

- (a) France
- (b) Russia
- (c) USA
- (d) Israel

(c) Answer

EXERCISE TALISMAN SABRE

Why in News: India, along with 18 other nations, participated in the 11th edition of Talisman Sabre, a major bilateral military drill led by Australia.

About the Exercise

- Exercise Talisman Sabre is the largest exercise conducted in Australia.
- Talisman Sabre is bilaterally designed between Australia and the United States, and is a multilaterally planned and conducted exercise.
- The exercise has been conducted **biennially** since **2005**.
- Exercise Talisman Sabre 2025 (TS25) is the 11th and largest iteration of the exercise.
- It consisted of a live fire exercise and field training exercises incorporating force preparation activities, amphibious landings, ground force manoeuvres, and air combat and maritime operations.
- **Locations:** TS25 utilised a number of locations, including both Defence and non-Defence training areas.
 - These locations provide a realistic test of how a large military force should function in a broad area of operations.
 - TS25 leveraged locations and ranges for all domains of military operations: air, land, maritime, space, and cyberspace.
- **Highlights of the Exercise**
 - The first live firing of the Australian M142 High Mobility Artillery Rocket System (HIMARS), including using the Precision Strike Missile.
 - A successful land-to-sea engagement of the United States Mid-Range Capability (MRC) using an SM-6 missile against a maritime target.
 - Participation of the United Kingdom-led Carrier Strike Group, representing the first time a non-US aircraft carrier has been involved in Talisman Sabre.
 - A long-distance Joint Force Entry Operation that deployed 335 United States Army paratroopers from the 11th Airborne Division from Alaska to Charters Towers alongside French and German paratroopers.

- Large-scale amphibious operations involving forces from Australia, France, Japan, the Republic of Korea, the United Kingdom and the United States.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the Talisman Sabre:

1. It is a biennial military exercise jointly conducted by the United States and Australia.
2. India participated in the Talisman Sabre exercise for the first time in 2023.
3. The exercise primarily focuses on maritime security and humanitarian assistance in the Indo-Pacific region.

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

(c) Answer

ADVANCEMENT IN MISSILE TECHNOLOGY

Why in News: Indigenously developed Short-Range Ballistic Missiles - Prithvi-II and Agni-I - were test-fired successfully from the Integrated Test Range in Chandipur (Odisha) under the aegis of the Strategic Forces Command.

Key Details

- The advancement follows shortly after the Indian Army conducted trials of the indigenously developed Air Defence System "Akash Prime" in Ladakh.
- The two-day trial was conducted at an altitude of over 15,000 feet in eastern Ladakh by the Army Air Defence Corps in collaboration with senior scientists from the DRDO.

Features	Prithvi II	Agni I
Type	Short range ballistic missile	Short/ Medium range ballistic missile
Range	250-350 Km	700-900 Km
Payload	500-1000 Kg	~1000 Kg
Propulsion	Liquid fuel	Solid fuel
Navigation	Advanced Inertial Navigation System	Advanced Electronic & Inertial Navigation
Payload type	Nuclear and Conventional	Nuclear and Conventional

Significance of the Tests:

- Illustrates that India's strategic missile capabilities are completely functional and reliable.
- Reinforces India's deterrent strategy in accordance with its nuclear doctrine.

- Highlights India’s focus on self-reliance and heightened readiness.
- Bolsters India’s technological and strategic advantage in the face of regional security threats.

Types of Missiles based on Speed

Subsonic Missile	Missiles that travel slower than sound.	Ex: Prithvi
Supersonic Missile	Missiles that travel faster than the speed of sound (Mach 1) but less than Mach 5.	Ex: BrahMos
Hypersonic Missile	The speed of missiles should be at least five times faster than the speed of sound (over Mach 5).	Ex: Shaurya/ Sagarika

Significance of Missiles in Defence

- **Precision Strikes:** They offer a means to strike targets at long distances with high precision and speed.
- **Deterrence:** Missiles, particularly those capable of delivering nuclear warheads, play a vital role in a country’s ability to retaliate with devastating force.
- **Counterforce capabilities:** Missiles can be used to neutralize enemy military capabilities, including command and control centers, airbases, and missile launch sites, limiting their ability to respond to an attack.
- **National Security:** Effective missile defense systems, like India’s Ballistic Missile Defence (BMD) programme, protect key assets and population centers from missile attacks, enhancing national security.

Types of Missiles based on Launch mode

Launch Mode	Description
Surface-to-Surface	Launched from land-based platforms to strike targets. Examples: Prithvi, Agni, and BrahMos
Surface-to-Air	Launched from land to intercept aerial threats like aircraft, helicopters, and drones. Examples: Akash, MRSAM
Air-to-Surface	Air launched to attack ground-based targets. Examples: Helina anti-tank missile fired from Rudra helicopter
Air-to-Air	Launched from aircraft against hostile aerial targets. Examples: Astra BVR air-to-air missile fired from Tejas
Ship-to-Ship	Naval anti-ship missiles launched from submarines/ warships. Examples: BrahMos anti-ship cruise missile fired from ships
Ship-to-Air	Naval surface-to-air missiles for fleet air defence. Examples: Barak-8 LR-SAM deployed on ships
Submarine-launched	Fired from submerged submarines. Examples: K-15 submarine-launched ballistic missile
Shoulder-fired	Man-portable missiles fired from launchers. Examples: FIM-92 stinger and Igla shoulder-fired SAMs.

Akash Prime

- It is an upgraded version of the Akash missile system.
- It incorporates a domestically developed active Radio Frequency (RF) seeker to improve precision in various terrains and weather conditions.
- Initially deployed during Operation Sindoor to counter Pakistani aerial threats.
- This system is classified as a medium-range, surface-to-air defense mechanism aimed at protecting both mobile and stationary assets.
- The Akash system is characterized by its capability to engage multiple targets simultaneously by utilizing real-time data from various sensors.
- It functions effectively at altitudes reaching up to 4,500 meters and is capable of targeting threats located 25 to 30 kilometers away.

ANCESTRAL RIGHTS OF TRIBAL WOMEN

Why in News: Supreme Court Affirms Equal Ancestral Property Rights for Tribal Women and Their Heirs.

Key Details

- In **Ram Charan & Ors. v. Sukhram & Ors. (2025 INSC 865)**, the Supreme Court addressed whether a tribal woman or her legal heirs can claim an equal share in ancestral property where neither codified law nor proven custom exists granting or denying such right.
- The dispute arose when Dhaiya, one of six children (five sons and one daughter) of a tribal man, was denied inheritance rights by male members of the family.

Lower Court Rulings

The trial court, followed by the appellate court and later the Chhattisgarh High Court, ruled against Dhaiya's claim reasoning that no customary law permitting female inheritance was established, and that the Hindu Succession Act, 1956, did not apply to Scheduled Tribes under Section 2(2).

Key Highlights of the Supreme Court Judgment

- **Burden of Proof Misplaced:** The Supreme Court observed that lower courts wrongly assumed an exclusionary custom and placed the onus on Dhaiya to disprove it. The bench noted the opposite—without proven custom for exclusion, inclusion should not be ruled out.
- **Application of Justice, Equity, and Good Conscience:** In the absence of any governing law or custom, the Court applied the principles of justice, equity, and good conscience, as embodied in Section 6 of the Central Provinces Laws Act, 1875.
- **Validity Despite Repeal:** Although the 1875 Act was repealed in 2018, the Court held that its **savings clause** protected accrued rights. Dhaiya's inheritance rights had vested approximately 30 years before the suit, and thus remained valid.
- **Violation of Constitutional Principles:** Denying inheritance based on gender, especially when custom is silent, "exacerbates gender division and discrimination." This, the Court held, violates **Article 14** (equality before the law), **Article 15(1)** (pro prohibition of discrimination on grounds of sex), as well as Articles 38 and 46 that emphasize social justice and empowerment of women.

- **Decision Outcome:** The Supreme Court set aside all previous judgments and affirmed that Dhaiya's legal heirs are entitled to an **equal share** in the ancestral property.

Significance of the Judgment

- **Landmark for Gender Justice in Tribal Communities:** The ruling rejects patriarchal assumptions in customary law, affirming that **constitutional equality applies uniformly**, even in tribal inheritance matters **without codified law**.
- **Precedent for Future Cases:** This decision establishes a jurisprudential principle: **where neither law nor custom explicitly excludes, women (and their heirs) must not be denied property rights**—a move likely to empower numerous tribal women across India.
- **Affirmation of Constitutional Morality:** The judgment reinforces that **custom cannot override fundamental rights**, especially when customs are silent, ambiguous, or discriminatory.

Summary

- The Supreme Court's ruling in Ram Charan v. Sukhram marks a watershed moment for property rights and gender equality among Scheduled Tribes.
- By applying constitutional values and equitable principles, the Court ensured that **tribal women and their heirs are not unjustly excluded from inheriting ancestral property**, even where no explicit law or custom exists to the contrary.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. With reference to the Supreme Court's 2025 ruling in Ram Charan & Ors. v. Sukhram & Ors., consider the following statements:
1. The Supreme Court held that in the absence of codified law or proven custom, principles of justice, equity, and good conscience can be applied to decide inheritance disputes among Scheduled Tribes.
 2. The Hindu Succession Act, 1956 automatically applies to all tribal communities unless they specifically opt out through a customary law resolution.
 3. The Court ruled that excluding women from inheritance when customs are silent violates Articles 14 and 15(1) of the Constitution.

4. Rights that had vested under the Central Provinces Laws Act, 1875 before its repeal in 2018 remain protected under its savings clause.

Which of the statements given above is/are correct?

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

(b) Answer

LACK OF DISABLED-FRIENDLY PRISONS

Why in News: The Supreme Court of India has ruled that denying disabled prisoners basic care in prisons is a violation of their fundamental rights.

Key Details

- This significant ruling, arising from the **L Muruganatham vs. State of Tamil Nadu** case, underscores that the right to life, as stated in Article 21, encompasses the right to dignity, humane treatment, and sufficient healthcare, even in correctional institutions.
- The court further pointed out that such denial amounts to indirect discrimination under Article 14 and violates the Rights of Persons with Disabilities Act, 2016 (RPwD Act).

Court directed prison authorities to:

- Procedural barriers:**
 - Identify prisoners with disabilities at the time of admission.
 - Provide them information about prison life in a simple and accessible format (sign language, Braille, etc).
 - Update prison manuals in tune with the Right to Persons with Disabilities Act 2016.
 - Minimal safeguard to women and transgender prisoners with specific legal or policy framework that guarantees dignity, accessibility and protection for persons with disabilities.
- Physical accessibility:**
 - Jail authorities should provide wheelchair-friendly spaces, accessible toilets, ramps and dedicated spaces for therapeutic needs of the disabled.
- Specialised Support:**
 - Prison facilities shall be accessible to individuals with mobility, sensory or cognitive impairments.
 - Trained caregivers shall be provided to help with essential daily activities such as bathing, dressing or eating.

India Justice Report 2025

- Report highlights severe overcrowding, understaffing, and inadequate funding as major issues within India's prisons, with undertrials constituting a large portion of the prison population.
- The report indicates that many prisons are operating far beyond their capacity, with some housing four times the number of inmates they are designed for, and that the focus on rehabilitation has been largely abandoned.
- Overcrowding:** The report reveals that the national average prison occupancy rate is 131%, and 176 prisons operate at 200% occupancy or more.
- Undertrial Prisoners:** A significant 76% of the prison population consists of undertrials, many of whom have been incarcerated for longer than the potential sentence for their alleged crime.
- Inadequate Funding:** The average daily expenditure per inmate is very low, indicating insufficient funding for prison operations, maintenance, and prisoner welfare.
- Staffing Shortages:** There are severe shortages of prison staff, including correctional officers, medical personnel, and other essential staff.
- Deaths in Custody:** The report notes an increase in deaths in custody, both natural and unnatural, between 2017 and 2022.
- Weak Legal Aid:** The report also points to issues with legal aid services, including low per capita spending, understaffing, and a decline in the number of paralegal volunteers.

Prison Statistics India (PSI) Report 2022

- PSI reports are compiled by the National Crime Records Bureau (NCRB).
- India's prison population stands at 573,220.
- However, the available prison capacity stands at only 4.3 lakh, with a forecast of just 5.15 lakh by 2030.
- The national occupancy rate stands at 131%, a substantial jump from 112% in 2012.
- 75% of prisoners are undertrials (awaiting trial, not convicted).
- Over 66% of prisoners belong to marginalized caste groups (SC, ST, OBC).
- No official data exists on prisoners with disabilities.

Legal and Human Rights Framework

- The RPwD Act of 2016** requires that accessibility and reasonable accommodations be provided for individuals with disabilities, including those housed in correctional facilities.
- The United Nations Convention on the Rights of Persons

with Disabilities (UNCPRD) and the Nelson Mandela Rules further stress the importance of ensuring that disabled individuals have fair access to prison facilities.

Consequences

- Disabled inmates frequently endure a double punishment, dealing with the fallout from their convictions while also grappling with poor living conditions.
- The absence of accessibility and support can result in greater reliance on others, feelings of isolation, and mental health struggles.
- Not providing reasonable accommodations can be seen as a type of cruel, inhumane, or degrading treatment.

Recommendations and Initiatives

- **The Model Prisons Act, 2023**, includes rules for prisoners with disabilities, emphasizing non-discrimination, accessibility, and proper training for staff.
- The Ministry of Home Affairs has also put out advisories and guidelines to enhance accessibility in prison facilities and guarantee humane treatment.
- The Rights of Persons with Disabilities Act, 2016, secures equal rights and benefits for individuals with disabilities, even those in prison.
- The National Action Plan for **Skill Development of Persons with Disabilities (NAP-SDP)** is designed to offer vocational training and skill development chances for persons with disabilities, including those behind bars.
- Setting up systems for regular audits and inspections by independent organizations can help maintain accountability and compliance with standards.
- States are required to meet legal responsibilities to ensure **humane and accessible conditions for prisoners with disabilities**.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. "The rights and welfare of disabled prisoners remain a neglected area within India's criminal justice system." Critically examine the adequacy of current legal and institutional frameworks in addressing the challenges faced by disabled prisoners in India. Suggest measures to ensure inclusive and humane treatment of prisoners with disabilities. [250 words] [15 marks]

HEALTH OF SENIORS IN INDIA

Why in News: India's approach to ageing and elderly care needs a fundamental reset.

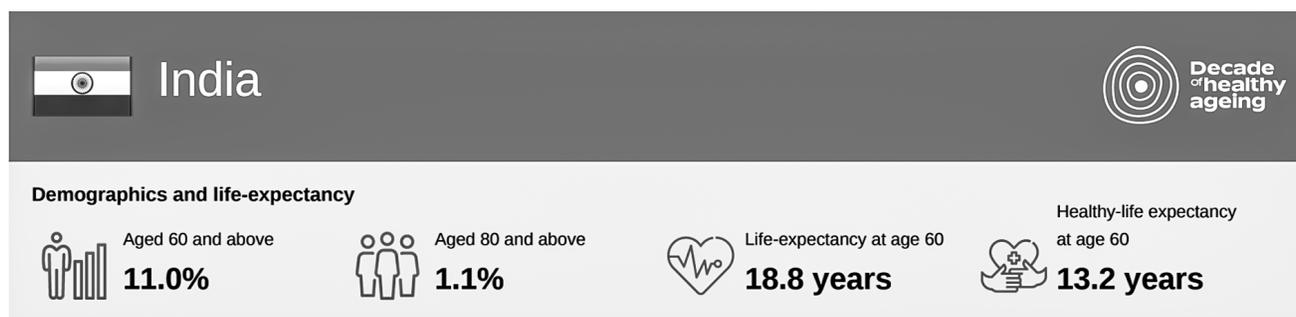
Key Details

- According to Census 2011, India has 104 million older people (60+years), constituting 8.6% of total population.
- It is expected that the country will have 193 million elderly persons, constituting about 13% of the total population by 2030.
- As per UNFPA Report 2023, the percentage of elderly population in the country is projected to double to over 20% of total population by 2050.

Definition of Elders:

An older person is defined by the United Nations as a person who is over 60 years of age. The elderly segment of the population has been divided into three main categories:

- **60-75 years of age:** Young old
- **75-85 years of age:** Old-Old
- **85 years and above:** Very Old



Abuse of older people

- Around 1 in 6 people 60 years and older experienced some form of abuse in community settings.
- Rates of abuse of older people are high in institutions such as nursing homes and long-term care facilities.
- Abuse of older people can lead to serious physical injuries and long-term psychological consequences.

Mental health of older adults

- Loneliness and social isolation are key risk factors for mental health conditions in later life.
- Approximately 14% of adults aged 60 and over live with a mental disorder.
- Mental disorders among older adults account for 10.6% of the total years lived with disability for this age group.



Top 10 causes of death in older people and years lived with disability

Rank	Causes of death	Causes of years of healthy life lost due to disability
1	Cardiovascular diseases	Sense organ diseases
2	Ischaemic heart disease	Musculoskeletal diseases
3	Respiratory diseases	Unintentional injuries
4	Chronic obstructive pulmonary disease	Mental and substance use disorders
5	Infectious and parasitic diseases	Respiratory diseases
6	Malignant neoplasms	Diabetes mellitus
7	Stroke	Uncorrected refractive errors
8	Diarrhoeal diseases	Other hearing loss
9	Unintentional injuries	Chronic obstructive pulmonary disease
10	Haemorrhagic stroke	Cataracts

Key Factors Contributing Ageing Phenomenon

- **Increased Longevity:** The World Health Organization reports that life expectancy in India has risen from 62.1 years in 2000 to 70.82 years in 2025.
- **Improved nutrition and living standards:** Enhanced living conditions, such as access to clean water, sanitation, and better nutrition, have played a significant role in extending lifespans.
- **Socio-Economic Developments:** Increased educational attainment among women, greater workforce participation, and delayed marriages have all contributed to a decline in fertility rates.

Challenges Associated with Elderly Population

- Access to healthcare services
- Health Problems such as chronic diseases (diabetes, arthritis, hypertension), Cognitive decline (Dementia, Alzheimer's) and Mobility Issues (weakening bones).
- Mental health challenges such as depression and anxiety.
- Financial challenges such as rising health costs, no retirement planning, dependent on family members for financial help.
- Social exclusion and Loneliness.

Measures taken in India

- National Programme for the Health Care of the Elderly (NPHCE).

- Senior Able Citizens for Re-Employment in Dignity (SACRED) program.
- Seniorcare Aging Growth Engine (SAGE).
- Indira Gandhi National Old Age Pension Scheme (IGNOAPS)
- National Institute of Ageing (NIA)
- The Maintenance and Welfare of Parents and Senior Citizens Act, 2007
- Integrated Programme for Older Persons (IPOP)
- Vayoshreshtha Samman

International Efforts

- The Vienna International Plan of Action (1982)
- United Nations Principles for Older Persons (1991)
- The Madrid International Plan of Action on Ageing (2002)
- The UN's Decade of Healthy Ageing initiative (2021-2030)

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. "India is ageing before it becomes rich." In light of this statement, critically examine the challenges posed by a rapidly ageing population in India. Discuss the policy measures required to ensure a dignified and productive life for the elderly. [250 words] [15 marks]

SOCIAL MEDIA REGULATION

Why in News: The Apex court of India expressed concern over the increasing abuse of the right to free speech, particularly on social media platforms.

Key Details

- **According to SC:**
 - Citizens need to exercise self-restraint and regulation to curb divisive and abusive content.
 - The court also mulled framing guidelines to regulate harmful social media posts.
 - Court signalling a proactive judicial approach to tackle the growing issue of hate speech and misinformation online.
- The bench stressed that the right to freedom of speech and expression comes with reasonable restrictions.
- The bench clarified that their intention was not to impose censorship, but to promote fraternity, secularism and individual dignity.

Article 19 of the Indian Constitution guarantees certain fundamental freedoms to citizens, primarily focusing on freedom of speech and expression.

Impact of Misuse of Social Media Platforms:

- **Mental Health Issues:** Anxiety and depression, disrupt sleep etc.
- **Misinformation and Fake News:** Spread of incorrect information, rumors, and conspiracy theories, can have serious consequences in the real world.
- **Reduced Face-to-Face Interaction:** Spending excessive time on social media can lead to a decline in real-life social interactions, potentially impacting social skills and relationships.
- **Privacy concerns:** Without proper privacy settings, individuals are at risk like identity theft, data breaches, and exploitation.
- **Career impact:** Posting inappropriate content or engaging in unprofessional behavior on social media can damage one's reputation and potentially impact career prospects.
- **FOMO:** The constant exposure to others' seemingly perfect lives can trigger FOMO (Fear of Missing Out), leading to anxiety and compulsive social media checking.
- **Less Tech-Savvy Individuals:** Digital divide, susceptibility to online scams and misinformation, privacy concerns due to lack of technical knowledge.

Social Media Regulations

- **Information Technology Act, 2000 (IT Act):** Subordinate legislation to the IT Act includes the Intermediary Guidelines Rules 2011 and the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

- **Section 69A of the IT Act, 2000:** The act empowers the central government to issue directions to block public access to information on computer resources under specific circumstances.
- **Section 79(1) of the IT Act, 2000:** The act provides intermediaries such as social media platforms, with a "safe harbor" from liability for third-party content they host or transmit.

Horizontal Application of Fundamental Rights

- Kaushal Kishor Case (2023) recognized the horizontal application of FRs, which means that Article 19, is enforceable not only against the state (Vertical application) but also against other citizens (Horizontal application).

Justice A.S.Oka emphasized that hate speeches disrupt social harmony and are punishable under the Indian Penal Code (IPC) and the Representation of People Act.

Measures to improve the utility of Social Media Platforms

- **Digital Literacy Initiatives:** Establishing thorough digital literacy education to enable users to recognize and address misinformation and online harassment.
- **AI Moderation Solutions:** Creating sophisticated AI tools for content moderation to quickly identify and eliminate harmful content while safeguarding freedom of expression.
- **Encouraging Positive Content Creation:** Introducing systems to reward users who generate informative, educational, or community-enhancing content. India's National Creators Award 2024 represents a crucial advancement in this area.

Way ahead

- The Union Government ought to establish guidelines aimed at regulating harmful and divisive social media content, thereby demonstrating a judicial commitment to tackling these concerns while safeguarding the democratic values embedded in the constitution.
- These governmental guidelines should strike a careful balance between individual rights and societal harmony by enhancing public awareness, promoting education, and encouraging self-regulation. The country can strive to diminish hate speech and misinformation while maintaining the tenets of democracy and fraternity.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. As per the rulings of the Supreme Court, the 'Freedom of Speech and Expression' as contained in Article 19(1) (a) includes which of the following:
1. Right to telecast.
 2. Freedom of silence.

3. Right to strike.
4. Freedom of commercial advertisements.

Choose the correct answer using the codes given below:

- (a) 1, 2 and 3 only (b) 2, 3 and 4 only
 (c) 1, 2 and 4 only (d) All of the above

Answer (c)

MANOSPHERE

Why in News: A growing network of online communities known collectively as the “manosphere” is emerging as a serious threat to gender equality, the UN agency dedicated to ending gender discrimination has warned.

What is the manosphere?

- The manosphere is an umbrella term for online communities that have **increasingly promoted narrow and aggressive definitions of what it means to be a man** – and the false narrative that feminism and gender equality have come at the cost of men’s rights.
- These groups propagate the notion that a man’s value is determined by his dominance, particularly over women, material wealth, emotional control, and physical appearance.
- The manosphere **targets male audiences on dating apps, gamer communities, podcasts, social media, and pretty much any other digital platform.**

Factors contributing to the rise of the manosphere

- **Isolated individuals:** Young men who feel alone and are **looking for community online** are the main audience for extreme content in the manosphere.
- **Self-proclaimed lifestyle advisors:** Instead of encouraging self-exploration that can get to the heart of men’s problems, they **argue that men are victims of society’s misandry**, which means prejudice against men and women’s equality as discrimination against men.
- **Anonymity:** This harms people’s mental and physical health by **making it easier for hate and sexist speech to be amplified on platforms.**
- **Anti-feminism:** Presenting men as the victims of social change, women as manipulators, and feminism as dangerous.

Impact on individual and society

- **Spread of harmful misinformation:** According to Equipundo, half of younger men and 40% of adult U.S. men surveyed say they trust one or more voices from the manosphere that advocate violence, anti-feminism, or “men’s rights.”

- **Online violence risks:** According to a global study, 58% of young women and girls have been the victims of online harassment.
- **Effects on boys’ and men’s mental health:** Young men who feel pressured to be more “manly” may **engage in risky behaviours, self-harm**, and anxiety due to the manosphere’s inflated notions of manhood.
- **Negative gender attitudes and social norms:** Because of the anonymity that offenders can enjoy, the manosphere exacerbates sexist stereotypes and negative social norms with little accountability.
- **Hostile targeting:** Online spaces are becoming more hostile due to attitudes and behaviours that are encouraged in the manosphere. For instance, the alt-right, male supremacists targeted female gamers in the Gamergate harassment campaign.

Countering manosphere

- **Encourage healthy masculinity:** Prioritise communication and empathy over seclusion and establish relationships based on trust rather than status or dominance.
- **Emotional maturity:** Normalise emotional expression and demonstrate that being vulnerable is acceptable as well as set an example of civility and constructive conflict resolution.
- **Media literacy:** To combat online hate and pseudoscience, teach media literacy to social media users.
- **Responsibility of platforms:** Hold tech sector responsible for both proactively identifying and eliminating violent content and for its dissemination including the impact of algorithms.
- **Policy making:** Involve women’s safety specialists in the testing of new technologies, such as artificial intelligence products, and empower survivors of digital abuse by soliciting their opinions when creating new policies.
- **Role of social media influencers:** To combat extremist content, advance inclusive gender norms, and set an example of positive masculinities, collaborate with influencers and civil society organisations.

Conclusion

Now is the time to address the challenges as the world commemorates the 30th anniversary of the Beijing Platform for Action, a groundbreaking strategy for gender equality.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. The growth of online communities such as the “manosphere” highlights emerging socio-psychological and cultural challenges in the digital age. Examine the factors leading to its rise and assess its implications for gender relations and mental health. Suggest measures to address these challenges. [250 Words] [15 Marks]

PALLIATIVE CARE

Why in News: In India, millions endure unnecessary suffering, making it imperative to integrate palliative care into its healthcare system.

Palliative care

- A vital but often overlooked aspect of healthcare is palliative care, a type of specialised treatment that **attends to a person's physical, emotional, social, and spiritual needs**.
- Palliative care focuses on **easing pain, minimising suffering, and enhancing quality of life for patients and their families**, in contrast to curative treatment, which aims to eradicate disease.
- The World Health Organisation (WHO) estimates that **40 million people worldwide need palliative care annually**, with 78% of those individuals residing in low- and middle-income nations.
- **Only 14%** of those in need, though, **get this kind of care**.

Barriers to the development of palliative care in India

- Annually 7 to 10 million people in India need palliative care each year, however **only 1-2% people in India have access** to it.
- **Lack of qualified experts:** Physicians who specialise in palliative care are disproportionately scarce, which restricts their capacity to offer end-of-life care and comprehensive pain management.
- **Limited funding:** Lack of government funding coupled with out-of-pocket costs of medications and home-based care forces care seekers into financial hardships.
- **Public awareness:** There is still a lack of knowledge about palliative care, which causes **misunderstandings and delayed access** to these vital services.
- **Inadequate Infrastructure:** There aren't many facilities specifically for palliative care; the majority are found in large metro hospitals and a few cities like Kerala.
- **Policy making:** Palliative care is **not embedded into mainstream health programmes** like NPCDCS (National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke).
- **Absence of Monitoring at the national level:** lack of a comprehensive national registry or data collection on the requirements, coverage, and results of palliative care.

Way Forward

- **Integration in traditional courses:** Palliative care must be incorporated into the core MBBS curriculum in order to give medical professionals the knowledge and compassion they need to handle end-of-life care.
- **Training of existing healthcare professionals:** The workforce of 13 lakh allied health professionals and 34.33 lakh registered nurses can be empowered through focused training to help close the gap and guarantee comprehensive care, especially in underserved and rural areas.
- **Recognition:** From bettering patient outcomes to lessening the overall strain on the healthcare system, **policymakers must acknowledge the long-term advantages of funding palliative care**.
- **Funding:** To ensure that public and private healthcare facilities have the infrastructure they need, governments should set aside specific funds for palliative care initiatives.
- **Policymaking:** Palliative care coverage should be **added to insurance plans like Ayushman Bharat** to make these services more affordable for patients and their families.
- **Raising public awareness:** The fact that palliative care encompasses pain management, psychological support, and enhanced quality of life at any point during a serious illness is often unknown to patients and their families. Raising awareness of these advantages in communities can influence demand and legislative changes.

Conclusion

The nation's end-of-life care system can be revolutionised by a multifaceted strategy of Palliative Care that prioritises capacity building, integrates palliative care into medical education, empowers allied health professionals, and tackles systemic issues.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the key barriers to effective implementation of Palliative care and suggest measures to integrate it into the national healthcare system. [250 Words] [15 Marks]

SANTHAL HUL

Why in News: June 30 commemorates the 169th anniversary of the Santhal Hul (Hul Diwas), recognized as one of the earliest peasant revolts against British rule.

About Santhal Revolt

- The tribal uprising against British Colonial rule and exploitative zamindars was led by Sidhu and Kanhu Murmu seeking resistance to injustice.
- It originated in the Santhal Parganas, an area now part of modern-day Jharkhand.
- In Santhali, Hul means resistance, uprising, or revolution.

Causes of Rebellion

- **Economic Exploitation:** The British implemented the Permanent Settlement system, which conferred significant authority over land to zamindars, resulting in elevated taxes and the exploitation of Santhal farmers.
- **Land Dispossession:** The Santhals, who historically owned and farmed their land, were systematically stripped of their land due to the zamindari system and the predatory practices of moneylenders.
- **Social and Political Disruption:** The establishment of the zamindari system and the influx of moneylenders disrupted the **traditional social and political frameworks** of the Santhal community.
- **Loss of Autonomy:** The Santhals perceived a threat to their **autonomy and lifestyle** due to the growing dominance of the British and their intermediaries.
- **Forced Labor:** The British and local landlords compelled Santhals to labor under severe conditions without adequate compensation, heightening their animosity.
- **Barter System:** The Santhals depended on barter but faced difficulties in **paying taxes in cash**, which compelled them to borrow from moneylenders, ensnaring them in debt.
- **Corruption and Oppression:** Corrupt officials took advantage of the Santhals through unfair practices, driving them towards insurrection.

Outcomes of the revolt

- Although the rebellion was eventually suppressed,

it resulted in important reforms, such as the Santhal Parganas Tenancy Act of 1876 and the **Chotanagpur Tenancy Act of 1908**, which sought to safeguard tribal land rights and cultural independence.

- Nearly 5,500 square miles were carved out of Bhagalpur and Birbhum to form the Santhal Parganas. The new district was placed under exceptional administrative control to quell tribal unrest.
- The Santhal Hul is regarded as a pivotal moment in India's fight for freedom, motivating subsequent tribal uprisings and playing a role in the larger movement for indigenous rights and self-governance.

Santhal (Santal) tribe

- The Santals are regarded as one of the most ancient tribes in India, known for their history of deforesting and cultivating land.
- They have migrated to several areas, including West Bengal, Bihar, and Madhya Pradesh, where they worked as laborers in tea gardens.
- The Santals communicate in Santali, which is the most prevalent language among the **Munda languages**.
- Their cultural heritage is rich, featuring distinctive **dances (enej)** and **music (sereng)** that play a vital role in their social and ritual practices.
- Although some have embraced Hinduism or Christianity, the Santals traditionally adhere to a form of animism and polytheism, worshipping nature deities, spirits, and ghosts.
- They maintain sacred groves, known as *jaher era* or *jahera*, situated on the peripheries of their villages.
- Their livelihoods include agriculture, hunting, and sericulture.

Santali

- **Santali is a language spoken by the Santhal tribe** in regions such as Jharkhand, Odisha, West Bengal, Assam, Bihar, and certain areas of Nepal and Bangladesh.

- In 1925, Santali was assigned its own script known as **OI Chiki**.
- Prior to this development, Santali was documented using the Devanagari, Bengali, or Latin scripts.
- Currently, Santali is acknowledged as one of the official scheduled languages of India.
- Belonging to the North Munda branch of the Austroasiatic language family, Santali encompasses both northern and southern dialects.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Santhal Rebellion of 1855-56, consider the following statements:

1. The Santhal Rebellion began as a protest against the permanent settlement system introduced by the British in the Bengal Presidency.
2. The British suppressed the rebellion by passing the Santhal Suppression Act, 1856.

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

SALKHAN FOSSIL PARK

Why in News: Salkhan Fossil Park, also known as Sonbhadra Fossils Park, has recently been added to UNESCO’s Tentative List for World Heritage Sites.

Salkhan Fossil Park

- Salkhan Fossil Park, officially known as **Sonbhadra Fossils Park**, is a remarkable geological site located in the Sonbhadra District of Uttar Pradesh, India.
- It is nestled within the Kaimoor Wildlife Sanctuary, near the village of Salkhan, approximately 15 kilometres from Robertsganj, the district headquarters.
- **Geographical Context:** The park spans approximately 25 hectares and sits within the Vindhyan mountain range, characterised by rugged terrain, steep escarpments, and a unique geological landscape.

- **Age and Significance:** The park is home to a rich repository of fossils dating back approximately 1.4 billion years, making it one of the oldest and most well-preserved fossil sites in the world. Its fossil-rich strata are easily observable, functioning as an open-air natural museum valuable for scientific research and educational tourism.

Key Features and Fossil Assemblage

- The site’s fossil assemblage primarily features an exceptional collection of stromatolites.
 - **Stromatolites** are formations created by communities of cyanobacteria or blue-green algae, which are vital indicators of ancient environmental conditions and microbial life.
- **Dominant Species:** *Eoentophysalis* sp., a colonial cyanobacterium, is dominant among the stromatolites found at the site.
- **Appearance and Concentration:** The fossils appear as ripple or ring-like/circular or oval stony formations scattered across limestone rock surfaces. These formations are concentrated in specific zones within the park.
- **Morphological Diversity:** The park boasts a variety of stromatolitic morphologies, including columnar, stratiform, and domal forms.
- **Microfossils:** Microfossils embedded in black chert bands further deepen the site’s significance, showcasing ancient bacterial and algal ecosystems. Fossilized akinetes of cyanobacteria are also present, indicating periods of environmental stress.
- **Early Multicellular Life:** Evidence of early multicellular life forms at the site marks a pivotal step in the evolutionary pathway towards modern biodiversity.
- **Preservation:** Salkhan’s fossils are meticulously preserved, offering invaluable insights into the earliest forms of life that populated our planet during the Proterozoic Eon. The microfossils of Salkhan Limestone are three-dimensionally preserved and little altered.

UNESCO World Heritage Sites

- The World Heritage List includes 1248 properties forming part of the cultural and natural heritage which the World Heritage Committee considers as having outstanding universal value.
- These include 972 cultural, 235 natural and 41 mixed properties in 170 States Parties. As of October 2024, 196 States Parties have ratified the World Heritage Convention.



UNESCO WORLD HERITAGE SITES

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding UNESCO's Tentative List for World Heritage Sites in India is/are correct?

1. A site must be on the Tentative List for at least one year before it can be nominated for inscription as a World Heritage Site.
2. The Tentative List is maintained by the Ministry of Culture and submitted to UNESCO.
3. India has more sites on the Tentative List than on the official World Heritage List.

Select the correct 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

Answer: (d)

UNESCO CREATIVE CITIES NETWORK

The UNESCO Creative Cities Network (UCCN)

- The UNESCO Creative Cities Network (UCCN), which was established in 2004, seeks to improve collaboration between and with cities that have acknowledged

creativity as a key component of **sustainable development** in terms of social, cultural, economic, and environmental facets.

- By joining the Network, cities demonstrate their dedication to **exchanging best practices**, forming alliances that **support the cultural industries** and creativity, enhancing engagement in cultural events, and incorporating culture into plans for urban development.
- Additionally, the Network pledges to **support the 2030 Agenda for Sustainable Development** and other UN frameworks.
- Architecture, Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music are the **seven creative disciplines** that are covered by the UNESCO Creative Cities Network.

Objectives

The UNESCO Creative Cities Network aims to:

- Enhance and support member cities' efforts to make creativity a crucial part of **urban development**, particularly through collaborations between the public and private sectors and civil society.
- **Foster international cooperation** amongst cities that have identified creativity as a strategic component of their sustainable development.
- Improve access to and participation in cultural life as well as the **enjoyment of cultural goods and services**, particularly **for marginalised** or vulnerable groups and individuals
- Fully integrate culture and creativity into local development strategies and plans.
- Improve the creation, production, distribution, and dissemination of cultural activities, goods, and services.
- Expand **opportunities for creators and professionals** in the cultural sector.

Areas of action

- Sharing best practices, knowledge, and experiences.
- Pilot projects, collaborations, and initiatives linking the public and private sectors and civil society.
- Networks and programs for professional and artistic exchange.
- Studies, research, and assessments of the Creative Cities' experience.
- Policies and actions for sustainable urban development.
- Communication and awareness-raising initiatives.

Indian cities under UNESCO Creative Cities Network

- Kozhikode (Literature)
- Gwalior (Music)
- Jaipur (Crafts and Folk Arts)
- Varanasi (Music)
- Chennai (Music)

- Mumbai (Film)
- Hyderabad (Gastronomy)
- Srinagar (Crafts and Folk Arts)

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following pairs:

Indian Cities	UNESCO Creative City Discipline
1. Kozhikode	Literature
2. Jaipur	Crafts and Folk Arts
3. Chennai	Music
4. Hyderabad	Gastronomy

How many of the above given pair is/are correct?

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

Answer: (d)

MACHILIPATNAM PORT

Why in News: Machilipatnam dock is waking up and undergoing major transformation with the construction of a modern Greenfield port.

A greenfield port is a port constructed on a previously undeveloped site, meaning it's built from scratch on land that hasn't been used for port operations before. These projects are distinct from brownfield ports, which involve expanding or repurposing existing port facilities.

Key Details

- Once a dormant port town, Machilipatnam is undergoing a transformation, with about 48% of the Greenfield port at Manginapaudi already developed, signalling a major revival in its maritime legacy.
- The port is expected to start by the end of the year 2026.
- It will bring immense economic growth and job opportunities and this project is important for both Andhra Pradesh and Telangana.

Geographical and Cultural Overview

- **Location:** Historically known as Masulipatnam, located in the Krishna district of Andhra Pradesh, along India's southeastern Coromandel coast. Machilipatnam is

situated on the coast of the Bay of Bengal, at the entrance to a channel of the Krishna River.

- **Global trade:** Historically renowned as a major trading hub, Machilipatnam attracted global traders during the medieval period. Attracted traders from Rome, Arabia, Persia, Southeast Asia, and Europe.
- **Cultural connection:** The city continues to be celebrated for its handloom tradition, especially the intricate Kalamkari textile art, which involves both hand-painting and block-painting of fabrics with rich traditional motifs.
- **Ancient texts:** Also known as **Masulipatnam, Maisolia, or Manjarika.**
 - It appears as **Maisolia** in the **Periplus of the Erythraean Sea.**
 - Listed as **Maisolos** in **Ptolemy's Geographia.**

Gateway to riches

- Both Telangana and Andhra Pradesh hope to reap rich benefits from the port.
- Exports such as coal, pharma, cement, fertilisers and container traffic will be major exports from the port.
- The Telangana government is working on setting up a dry port facility and a direct freight corridor to the port.
- Both states expect benefits in land prices as well as employment opportunities.

Way Forward

- There are plans to develop it into a deep-sea port for larger ships.
- The state government is also developing two more ports: Ramayapatnam (Nellore district) and Bhavanapadu (Srikakulam district).

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, Machilipatnam Port has been in the news due to development initiatives. In this context, consider the following statements:

1. Machilipatnam Port is located on the eastern coast of India along the Bay of Bengal.
2. It is being developed as a deep-water port.
3. The port lies in the state of Tamil Nadu.

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

(a) Answer

PASHMINA SHAWL

Why in News: Prime Minister Narendra Modi presented a luxurious Kashmiri Pashmina shawl to the Vice President of Ghana during in a recent diplomatic engagement.

Pashmina shawls: Kashmir’s world-renowned Pashmina shawls, traditionally celebrated for their intricate *buta* or paisley designs, have recently undergone a creative transformation. In a unique fusion, French-inspired abstract art has replaced the classic embroidery, giving the timeless fabric a modern and artistic appeal.

About Pashmina

- **Origin and Certification:** Pashmina is a Geographical Indication (GI) certified wool from the Kashmir region of India.
- **Traditional Use:** Historically, Kashmiri people wore Pashmina shawls during harsh winters for warmth.
- **Etymology:** The word “Pashmina” comes from the Persian term *Pashm*, meaning “weavable wool.”
- **Quality and Cost:** Known for its exceptional softness and warmth, Pashmina is among the most expensive types of wool in the world. The high price reflects the fineness of the fiber and the painstaking craftsmanship involved.
- **Time to Weave:** Creating a single Pashmina shawl can take over 72 hours, depending on the intricacy of the work.

Source of Wool

- The wool is obtained from *Changthangi* goats (*Capra hircus*), reared in Ladakh by the **Changpa** tribe.
- The Changpa are a semi-nomadic community living mainly in Changthang, a high-altitude plateau spread across Ladakh and the Tibet Autonomous Region.
- In India, the Changpa are classified as a **Scheduled Tribe** under the reservation system.

Significance

- Pashmina is considered one of the finest and most luxurious wools in the world.
- Its global demand has boosted Kashmir’s handicraft industry and strengthened the local economy.

GOVERNMENT SCHEMES

10 YEARS OF AMRUT

Why in News: India celebrates 10 years of the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), a major initiative to improve the quality of life in cities.

Purpose of the Scheme

- To ensure that every household has access to a tap with an assured supply of water and a sewerage connection.
- To increase the amenity value of cities by developing greenery and well-maintained open spaces (e.g. parks).
- To reduce pollution by switching to public transport or constructing facilities for non-motorised transport (e.g. walking and cycling).
- **History:** Launched on 25 June 2015, the Mission aimed to provide basic services such as water supply, sewerage, urban transport, and parks.

Components of the Scheme

- **Water Supply:**
 - Water supply systems, including augmentation of existing water supply, water treatment plants and universal metering.
 - Rehabilitation of old water supply systems, including treatment plants.
 - Rejuvenation of water bodies, specifically for drinking water supply and recharging of groundwater.
 - Special water supply arrangement for difficult areas, hill and coastal cities, including those having water quality problems (e.g. arsenic, fluoride)
- **Sewerage:**
 - Decentralised, networked underground sewerage systems, including augmentation of existing sewerage systems and sewage treatment plants.
 - Rehabilitation of old sewerage system and treatment plants.
 - Recycling of water for beneficial purposes and reuse of wastewater.

- **Septage:**
 - Faecal Sludge Management- cleaning, transportation and treatment in a cost-effective manner.
 - Mechanical and biological cleaning of sewers and septic tanks and recovery of operational cost in full.
- **Urban Transport:**
 - Ferry vessels for inland waterways (excluding port/ bay infrastructure) and buses.
 - Footpaths/walkways, sidewalks, foot over-bridges and facilities for non-motorised transport (e.g. bicycles).
 - Multi-level parking.
 - Bus Rapid Transit System (BRTS).
- **Capacity Building:**
 - This has two components- individual and institutional capacity building.
 - The capacity building will not be limited to the Mission Cities, but will be extended to other ULBs as well.
 - Continuation of the Comprehensive Capacity Building Programme (CCBP) after its realignment towards the new Missions.
- **Storm Water Drainage:** Construction and improvement of drains and storm water drains in order to reduce and eliminate flooding.
- **Green space and parks:** Development of green space and parks with special provision for child-friendly components.

AMRUT 2.0

Launched on 1st October, 2021

A Step towards 'water secure cities' (Outlay 2,99,000 crore)

Key Objectives -

100% Sewerage & Septage management in 500 AMRUT cities



Universal coverage of water supply in all statutory towns

Water Secure Cities

- Rejuvenation of water bodies
- Urban Aquifer Management
- Rain water harvesting
- PeyJal Survekshan

Achievements under AMRUT

Water Supply

- 189 lakhs tap water connections provided (against target of 139 lakh).
- 64,463 km of water supply network constructed.
- 4,734 MLD Water Treatment Plant (WTP) capacity developed.
- Tap water coverage increased from 49% (2011) to 70% (2025).
- 230 water supply projects implemented with SCADA technology.

Sewerage & Septage Management

- 149 lakhs sewer connections provided (against target of 145 lakh).
- 19,598 km of sewerage network constructed.
- 4,447 MLD Sewage Treatment Plant (STP) capacity developed.
- Includes 1,437 MLD capacity for reuse.
- 146 sewerage projects implemented with SCADA technology.

Storm Water Drainage

- 1,457 km of drains constructed.
- 3,766 waterlogging points eliminated.

Green Spaces and Parks

- 6,869 acres of green space developed.
- 2,994 parks created.

About the scheme

- The ELI Scheme, which has a **total budget outlay of Rs 2 Lakh Crore**, was introduced in the **Union Budget 2024–2025** as one of the five programs the PM has **proposed to help 4.1 Crore young people find work**, develop their skills, and access other opportunities.

Features of Scheme

- **Rewards for employees:** First-time workers will receive **up to Rs 15,000** (one month's salary).
- **Rewards for the employer:** For up to two years, employers will receive **incentives for creating new jobs**, and the manufacturing sector will receive extended benefits for an additional two years.
- **Duration:** The program would apply to jobs created between **August 1, 2025, and July 31, 2027**.
- The program is divided into two sections, with **Part A geared towards newcomers** and **Part B towards employers:**

Part A: First-Time Employee Incentive:

- The one-month EPF wage up to Rs 15,000 in two installments will be provided by this part, which is aimed at new employees who have registered with EPFO.
- The **eligibility threshold will be Rs 1 lakh for employees**.
- Six months of service will result in the first installment being due, and twelve months of service and the employee completing a financial literacy program will result in the second installment.
- For a predetermined amount of time, a **portion of the incentive will be held in a savings instrument or deposit account**, which the employee may later withdraw to promote the saving habit.
- The Part A will help approximately **1.92 crore new hires**.

Part B: Support to Employers:

- This section will address the creation of new jobs across all industries, with a particular emphasis on manufacturing.
- For workers earning up to Rs 1 lakh, the employers will receive incentives.
- For every additional employee who has been employed continuously for at least six months, the government will **provide employers with incentives of up to Rs 3,000 per month for two years**.
- **Incentives will also be offered to the third and fourth years for the manufacturing sector.**
- Companies with EPFO registration will be required to hire at least two additional employees (for companies with fewer than fifty employees) or five additional employees (for companies with fifty or more employees) continuously for a minimum of six months.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the Atal Mission for Rejuvenation and Urban Transformation (AMRUT):

1. It focuses on ensuring universal coverage of drinking water supply and sewage systems in selected cities.
2. Its implementation is limited to cities with a population of more than 10 lakh.

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)

EMPLOYMENT LINKED INCENTIVE (ELI) SCHEME

Why in News: The Employment Linked Incentive (ELI) Scheme was recently approved by the Union Cabinet. Its purpose is to promote the creation of jobs, improve employability, and improve social security in all sectors, with a particular emphasis on the manufacturing sector.

The incentive structure will be as under:

EPF Wage Slabs of Additional Employee (in	Benefit to the Employer (per additional employment per month)
Up to Rs 10,000*	Up to Rs 1,000
More than Rs 10,000 and up to Rs 20,000	Rs 2,000
More than Rs 20,000 (up to salary of Rs 1 Lakh/month)	Rs 3,000

- It is anticipated that this section will encourage employers to hire an additional 2.60 crore people.

Incentive Payment Mechanism

- The **Aadhar Bridge Payment System** (ABPS) will be used to make all payments to first-time **employees** under Part A of the scheme via DBT (Direct Benefit Transfer) mode.
- Employers** will receive payments under Part B straight into their **PAN-linked accounts**.

Conclusion

In addition to encouraging young people to enter the workforce for the first time, the government hopes that the ELI Scheme will stimulate job creation across all industries, but especially in the manufacturing sector. The formalisation of the nation's workforce through the extension of social security coverage to crores of young men and women is another significant result of the scheme.

PM KAUSHAL VIKAS YOJANA

Why in News: Recently, the Ministry of Skill Development and Entrepreneurship celebrated 10 years of PM Kaushal Vikas Yojana.

Key features of the scheme

- Launch date:** 15 July, 2015
- Objective:** To support and foster skill development throughout the nation by offering free, short-duration skill training and rewarding young people financially for completing it.

Evolution of the scheme

- PMKVY 1.0:** During its pilot phase in 2015-16, 19.85 lakh candidates were trained.
- PMKVY 2.0:** 1.10 Crore candidates were trained/orientated.
- PMKVY 3.0:** 7.37 lakh candidates were trained.
- PMKVY 4.0:** As of July 11, 2025, over 25 lakh candidates have been trained under this phase.

Significance of scheme

- Coverage:** More than 1.63 crore candidates have been trained under PMKVY in diverse sectors, such as manufacturing, construction, healthcare, IT, electronics, retail, and more.
- Inclusivity:** With 45% of the candidates being female

and a **sizable portion** hailing from **Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBCs)**, inclusivity is a fundamental component of the program.

- Digitization:** Over time, PMKVY evolved to address demands of the future economy, expanding its scope to include cutting-edge sectors like Artificial Intelligence, Drone Technology, Robotics, Mechatronics and Internet of Things (IoT).
- Special Projects: Targeted skilling for marginalized groups** included training 2,500 Bru-tribe candidates in Tripura, jail inmates in Assam and Manipur, and 13,834 (70% women) under the **PANKH project** across 18 states.
- COVID-19 Response:** Over 1.2 lakh health workers were trained through a **Customized Crash Course Programme for COVID warriors**.
- Skill Hub Initiative:** In accordance with NEP 2020 (National Education Policy), more than 1.23 lakh young people received training through schools and colleges serving as vocational hubs.
- Academic Mobility:** By integrating skill qualifications with the Academic Bank of Credits (ABC), PMKVY 4.0 makes it possible for credits to be transferred between formal education and skill.

Empowering India

Key Steps Driving the Success of PMKVY 4.0 Nationwide

Focus on New Age Skills like Industry 4.0, Web 3.0, AR/VR, Climate Change, Circular Economy, Green Economy, etc;

Greater reliance on On-Job-Training (OJT) for better practical exposure to candidates;

Emphasis on Re-skilling, and Up-skilling under Recognition of Prior Learning (RPL);

Flexibility in course curriculums by introducing courses in partnership with industry.

Cross utilization of available infrastructure with the educational institutions viz. Institutes of National Importance (INIs) / Schools / Colleges / Universities / Central and State Government Institutions, etc;



Training aligned to National Priorities and Policy Announcements focusing on clusters in sectors like Semiconductor, 5G, AI, Green Hydrogen, EV, Solar Mission, Care, Tourism etc.



Conclusion

More than just a government initiative, the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) **represents India's dedication to empowering its youth via lifelong learning and skill development.** The program is giving millions of people the skills and self-assurance they need to prosper in a world that is changing quickly by encouraging inclusivity, embracing innovation, and exhibiting resilience in the face of change.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding PM Kaushal Vikas Yojana:

1. It was launched by the Ministry of Commerce and Industries.
2. The scheme promotes On Job training for better practical exposure to candidates.
3. It was announced in the Union Budget 2025.

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

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

(a) :Answer

PM DHAN-DHAANYA KRISHI YOJANA

Why in News: The Union Cabinet, chaired by the Prime Minister, approved the Prime Minister Dhan-Dhaanya Krishi Yojana for a period of six years, beginning with 2025-26 to cover 100 districts.

Key Details

- First announced in the Union Budget 2025–26, **the scheme is designed to catalyse growth in 100 agri-districts through saturation-based convergence of 36 Central schemes across 11 Ministries**, with an annual outlay of ₹24,000 crore for a period of six years starting FY 2025–26.
- Rather than introducing new schemes, PMDDKY ensures coordinated delivery of existing programmes to the last-mile farmer, avoiding duplication and enhancing impact.
- The scheme draws on insights from the successful Aspirational District Programme and is projected to benefit 1.7 crore farmers directly.
- **The scheme identifies 100 districts based on:**
 - Low productivity
 - Low cropping intensity
 - Less credit disbursement

Objectives of the Scheme

- Enhancing agricultural productivity.
- Encouraging crop diversification and sustainable agricultural practices.

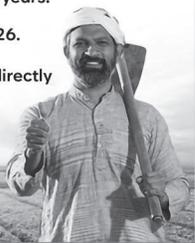
- Augmenting post-harvest storage capacity at the panchayat and block levels.
- Improving irrigation infrastructure for reliable water access.
- Enabling greater access to short-term and long-term agricultural credit for farmers.

Expected Outcomes of the Scheme

- The scheme will focus on fruits, fisheries, beekeeping, animal husbandry, and agroforestry, not just crop agriculture.
- By leveraging scale, technology, and institutional strength, the scheme is poised to be a game changer in rural transformation.
- The scheme will result in higher productivity, value addition in agriculture and allied sectors, local livelihood creation, an increase in domestic production, and achieving self-reliance (Atmanirbhar Bharat).

Prime Minister Dhan-Dhaanya Krishi Yojana

- 1 First announced in the Union Budget 2025-26.
- 2 Focus on 100 agri-districts
- 3 Saturation-based Convergence of 36 Central Schemes across 11 Ministries.
- 4 Annual outlay of ₹24,000 crore for a 6 years.
- 5 Implementation begins from FY 2025-26.
- 6 Projected to benefit 1.7 crore farmers directly



Implementation Structure for Pradhan Dhan-Dhaanya Krishi Yojana

National-Level Oversight Bodies	<ul style="list-style-type: none"> ■ 2 teams will be formed: 1 under Union Ministers, and 1 under Secretaries and Department Officers. ■ Central Nodal Officers will also be appointed for each district.
State-Level Steering Groups	<ul style="list-style-type: none"> ■ Similar to the teams at the district level ■ Will ensure effective convergence of schemes in districts.
District-Level Committees	<ul style="list-style-type: none"> ■ District Dhan-Dhaanya Krishi Yojana (DDKY) Samiti, chaired by the District Collector or Gram Panchayat, will be established. ■ Samiti will also include progressive farmers and departmental officers ■ Tasked to prepare a District Agriculture & Allied Activities Plan. ■ Progress will be tracked using 117 Key Performance Indicators (KPIs) on a central dashboard



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is not one of the criteria for selecting the 100 districts under the Prime Minister Dhan-Dhaanya Krishi Yojana?
- (a) Low agricultural productivity
 - (b) Low cropping intensity
 - (c) Less credit disbursement
 - (d) High irrigation coverage

Answer: (d)

RESEARCH DEVELOPMENT AND INNOVATION SCHEME

Why in News: Recently, the Cabinet Approved the Research Development and Innovation (RDI) Scheme to scale up Research, Development, and Innovation in Strategic and Sunrise Domains.

Salient features of the scheme

- **Corpus:** \$11.65 billion (Rs. 99,771 crore)
- **Nodal department:** Department of Science and Technology (DST)
- **Funding to the private sector:** Intends to encourage private sector investment in RDI by offering long-term financing or refinancing with long tenors at low or no interest rates.

Key objectives of the scheme:

- In order to ensure economic security, strategic purpose, and self-reliance, the private sector should be encouraged to increase research, development, and innovation (RDI) in sunrise domains and other sectors
- Finance transformative projects at higher Technology Readiness Levels (TRL)
- Support the acquisition of technologies that are critical or of high strategic importance
- Facilitate the establishment of a Deep-Tech Fund of Funds.

Administration of finances

- The funding mechanism for the RDI Scheme will be divided into two levels.
- A Special Purpose Fund (SPF) will be set up within the ANRF to serve as the custodian of funds at the first level.
- A range of second-level fund managers will receive funds from the SPF. The majority of this will take the shape of long-term concessional loans to fund R&D projects.
- Equity-based financing is another option, particularly for startups.

- Additionally, contributions to the Deep-Tech Fund of Funds (FoF) or any other FoF intended for RDI may be taken into account.

Conclusion

The RDI Scheme promotes self-reliance and global competitiveness by meeting the private sector’s urgent need for long-term, reasonably priced financing. This helps the nation create an environment that is favourable for innovation as it moves closer to Viksit Bharat in 2047.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding Research Development and Innovation (RDI) Scheme:
1. RDI scheme is administered by Ministry of Science and Technology
 2. Intends to encourage private sector investment in RDI by offering long-term financing or refinancing with long tenors at low or no interest rates
 3. Facilitate the establishment of a Deep-Tech Fund of Funds.

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

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

Answer: (c)

ASPIRATIONAL DMF PROGRAMME

Why in News: Union Ministry of Mines Launches ‘Aspirational DMF (District Mineral Foundation) Programme’ and ‘Aspirational Block Programmes’.

Key Details

- This was launched at the ‘National DMF Workshop’ held at New Delhi.
- A total of 152 DMFs were represented in the event.
- **Development Mineral Funds (DMFs)** have been instrumental in changing lives in areas impacted by mining by providing financial support for health, education, nutrition, and infrastructure over the last ten years.
- DMFs are true examples of co-operative federalism.
- State governments should approach DMF as a mission aimed at fostering significant transformation in mining regions, emphasizing positive, community-focused initiatives and ensuring 100% utilization of available funds.
- DMF is catalyzing as a key pillar in building a **Viksit Bharat**—an inclusive, empowered, and self-reliant India.
- States including Jharkhand, Maharashtra, Odisha, Gujarat, Himachal Pradesh, Rajasthan, and Goa were felicitated for adopting the revised **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) 2024** guidelines into the DMF Rules.

District Mineral Foundation

- A DMF is a non-profit trust established in India to work for the benefit of people and areas affected by mining activities, focusing on areas like drinking water, health, education, and skill development.
- These foundations are mandated by the District Mineral Foundations (DMFs) were created under the **Mines and Minerals (Development and Regulation) Amendment Act, 2015**, which amended the original MMDR Act, 1957, and are funded through contributions from miners.
- DMFs implement the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) to address the challenges faced by mining communities.

PMKKKY 2024 guidelines

- At least 70% of the funds are directed towards “High Priority” sectors like drinking water, health, education, and environmental protection. The remaining funds can be used for other priority areas like infrastructure, irrigation, and energy.

Aspirational Block Programmes

- ABP initiative is launched by NITI Aayog, to improve governance and quality of life in the most underdeveloped blocks across India.
- The ABP builds upon the success of the Aspirational Districts Programme, applying a similar approach at the block level.
- The program aims to enhance service delivery and accelerate socio-economic development in these identified blocks.
- Block officers are identified as “**Leaders of Change**” and provided with training to drive transformative action.
- Focus areas: health and nutrition, education, agriculture, basic infrastructure, and social development.
- ABP works upon an Outcome-based monitoring approach. Defining **specific, measurable, achievable, relevant, and time-bound (SMART)** goals and tracking progress regularly.

Way Forward

As the Aspirational DMF Programme rolls out, its success will depend on effective monitoring, inclusive planning, and active citizen participation. If implemented well, it could redefine development outcomes for India’s most neglected mining regions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the District Mineral Foundation (DMF) in India, consider the following statements:

1. DMFs are statutory bodies established under the Mines and Minerals (Development and Regulation) Act, 1957.

2. The primary objective of DMFs is to benefit the people and areas affected by mining-related operations.
3. The funds collected under DMF can only be used for environmental conservation.
4. DMFs function under the jurisdiction of the Ministry of Environment, Forest and Climate Change.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 only

(c) 1, 2 and 3 only (d) 1, 2, 3 and 4

(a) :answrA

NURTURING ASPIRATIONS THROUGH VOCATIONAL TRAINING FOR YOUNG ADOLESCENT (NAVYA) INITIATIVE

Why in News: In line with the vision of **Viksit Bharat@2047** and commitment to women-led development, the Ministry of Women and Child Development (MWCD), in convergence with Ministry of Skill Development and Entrepreneurship (MSDE), launched the initiative for Skilling of Adolescent Girls NAVYA.

NAVYA Initiative

- The initiative is designed to provide vocational training primarily in non-traditional job roles to adolescent girls aged 16–18 years who have completed at least Class 10.
- Training in fields such as graphic designing, professional makeup artistry, drone assembly, CCTV installation, and smartphone repair.
- This pilot program will be executed across 27 districts in the country, including Aspirational districts and those in the North-eastern States, with a focused strategy to reach underserved areas and vulnerable populations.
- The program will leverage the strengths of the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and other prominent skill development initiatives.
- Through NAVYA, the Government will reaffirm its dedication to empowering girls with essential skills, confidence, and opportunities—ensuring that every young woman plays a pivotal role in India’s progress towards a developed, self-reliant, and inclusive future.
- Adolescent girl trainees will be provided with Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and PM Vishwakarma certificates.

Significance of NAVYA initiative

- **Fostering Social Transformation:** Equipping girls with skills boosts their independence, self-respect, and confidence, turning them into role models in their communities.

- **Empowering disadvantaged communities:** Targets rural and tribal regions, closing the gap in education and skill-building opportunities for disadvantaged girls.
- **Supporting the Viksit Bharat Vision:** Aims to support the national objective of a developed India by cultivating a skilled and empowered female workforce.
- **Breaking Down Industry Barriers:** Inspires girls to step into and thrive in unconventional fields, fostering gender inclusion and equal chances.
- **Advocating Women’s Rights:** Pushes for gender equality by encouraging young girls to chase careers outside traditional roles.
- **Boost Economic Growth:** More women joining the workforce and starting businesses results in better household incomes and a more robust economy.

PM Vishwakarma Scheme

- The scheme provides a PM Vishwakarma Certificate and ID card to recognize and support traditional artisans and

craftspeople. This certificate is a key part of the scheme, enabling artisans to access various benefits, including skill upgrades, collateral-free loans, and marketing support.

Pradhan Mantri Kaushal Vikas Yojana

- The PMKVY is a skill development program launched in 2015 with a goal of upskilling and reskilling at least 10 million youth in India across different sectors. The scheme is being implemented by the **National Skill Development Corporations** in partnership with multiple stakeholders.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

“NAVYA – A Joint Pilot Initiative for Skilling Adolescent Girls aims to empower young girls through education, skill-building, and life skills. In the context of India’s demographic dividend and gender equity goals, critically examine the potential of such initiatives in addressing structural barriers faced by adolescent girls.” [15 Marks] [250 words]



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SKILLS FOR FUTURE REPORT

Why in News: Recently, the Ministry of Skill Development and Entrepreneurship released a report titled “Skills for the Future: Transforming India’s Workforce Landscape,” developed by the Institute for Competitiveness.

Key Highlights

- The report “Skills for the future: Transforming India’s workforce landscape” presents a timely, data-centric, detailed examination of the skills landscape in India, with a focus on educational attainment, occupational distribution, and technical and vocational education and training (TVET).
- According to the report, **only 10–12% of workers were employed in high-competency roles in 2023–2024**, while 88% of workers were employed in low-competency occupations.
- Furthermore, **over 52% of people remain at the primary school or lower level**, while only 9.76% have completed education beyond the secondary level.
- In India, **more than 66% of vocational training is in the top five industries:**
 - IT and ITeS,
 - Textile and Apparel,
 - Electronics,
 - Healthcare and
 - Life Sciences, and Beauty and Wellness.
- It reveals that **many employees hold positions**, either as a **result of underqualification** (employees have fewer qualifications than necessary) or **overqualification** (employees have more qualifications than their jobs require).
- The report also **categorises the workforce into low-, medium-, and high-skilled groups** based on general education and technical education.



Report Recommendations

- **National Credit Repository:** The report recommends the establishment of a National Credit Repository that incorporates formal education, work experience, and skilling credentials in accordance with the **National Skills Qualifications Framework (NSQF)** to enable more precise skill gap analysis.
- **Data collection:** It suggests instituting a standardised skill data collection system to enhance policy design, monitoring, and evaluation.
- **National Classification of Occupations:** The report urges an immediate revision to the **National Classification of Occupations (NCO)** to reflect the evolving nature of work driven by developments in advanced manufacturing, digital technology, and renewable energy.
- **Role of industry:** In addition to paying employees more, the industries must be encouraged to hire from a pool of skilled workers and take responsibility for developing training that is in line with the market.
- **Skills based employment: Addressing skill mismatches and updating occupational structures** will be key to India's economic resilience and growth in the coming decades.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Recently, the report titled "Skills for the Future: Transforming India's Workforce Landscape," released by?

- (a) Ministry of Corporate Affairs
- (b) Ministry of Labour and Employment
- (c) Ministry of Commerce and Industries
- (d) None of The Above

Answer: (d)

Descriptive Question

Q. "In light of the 'Skills for the Future' report, critically examine the challenges facing India's workforce in aligning education with employability. Suggest structural and institutional reforms to bridge the skills gap." [150 Words] [10 Marks]

WHO REPORT ON TOBACCO

Why in News: The World Health Organization (WHO) published its 2025 report on the Global Tobacco Epidemic, focusing on the six policies outlined in the **WHO MPOWER** tobacco control measures.

About the Report

- The WHO report on the global tobacco epidemic, 2025 is the tenth edition of this report and marks 20 years since

the entry into force of the **WHO Framework Convention on Tobacco Control (WHO FCTC)**.

- This report highlights significant progress in global tobacco control efforts, alongside ongoing challenges and emerging threats from the tobacco industry.
- The report emphasises the widespread adoption of MPOWER measures, a package of cost-effective strategies to reduce tobacco use.
- This edition of the report specifically focuses on the "W" component of the MPOWER package: warning about the dangers of tobacco through health warnings on packaging and anti-tobacco mass media campaigns.

Global Progress in Tobacco Control (MPOWER Measures)

- In 2024, 6.1 billion people, representing over 75% of the global population, are protected by at least one MPOWER measure adopted at the highest level.
- Since 2007, the number of countries with at least one MPOWER measure in place has more than tripled, rising from 44 to 155.
- Countries with two or more MPOWER measures have seen a nearly tenfold increase, from 11 to 107 countries, now covering 4.8 billion people.
- Overall, **global tobacco use prevalence has dropped by one third since the WHO FCTC entered into force**, with higher implementation levels correlating with greater reductions in smoking prevalence.

WHO MPOWER Control Measures



Focus on "Warn about the dangers of tobacco" (W Measure)

- **Health warnings** are recognised as an effective way to help people quit tobacco use.
- **Plain packaging** further reduces the appeal of tobacco products and strengthens the impact of health warnings.
- **Graphic health warnings** on tobacco product packaging are a highly effective tool, with their costs often borne by the tobacco industry. They deter tobacco use, save lives, increase awareness of health risks, and can contribute to increased cessation attempts.
- As of 2024, 110 countries require graphic health warnings, covering approximately 5 billion people (62% of the global population). This marks substantial progress from 2007, when only nine countries had such policies.
- Plain packaging policies have been adopted by 25 countries by the end of 2024, with three more adopting in 2022. This measure reduces product appeal, limits misleading labelling, and enhances health warning effectiveness.

- Mass media campaigns, when coupled with graphic warnings, can break the cycle of addiction and protect future generations. They are a powerful and cost-effective tool for tobacco control, impacting knowledge, attitudes, and social norms.

MPOWER

- The WHO Framework Convention on Tobacco Control (WHO FCTC) and its guidelines provide the foundation for countries to implement and manage tobacco control.
- To help make this a reality, WHO introduced the MPOWER measures.
- These measures are intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco, contained in the WHO FCTC.
- **MPOWER measures**
 - Monitoring tobacco use and prevention policies
 - Protecting people from tobacco smoke
 - Offering help to quit tobacco use
 - Warning about the dangers of tobacco
 - Enforcing tobacco advertising, promotion & sponsorship bans
 - Raising taxes on tobacco

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the MPOWER initiative of the World Health Organization (WHO):

1. The MPOWER package is a set of six evidence-based measures to assist countries in implementing the provisions of the WHO Framework Convention on Tobacco Control (WHO FCTC).
2. The letter “W” in MPOWER stands for “Warn about the dangers of tobacco.”
3. India has implemented all six components of MPOWER at the highest level as per WHO’s global tobacco control report.

Which of the statements given above are correct?

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

Answer: (a)

INDIA BREAKS INTO THE TOP 100 OF THE SDGs INDEX

Why in News: Recently, **India ranked 99th in the 2025 UN Sustainable Development Report**, securing a spot among the top 100 countries in the SDG Index for the first time.

Key Details

- With a score of 100 signifying complete accomplishment of all goals, the index gauges overall progress towards accomplishing the **17 SDGs** that the United Nations member states adopted in 2015.
- With a **score of 67** on the SDG Index, **India** has significantly improved from its 2024 ranking of 109th.
- Bangladesh comes in at number 114 (63.9), Pakistan at number 140 (57), Nepal at number 85 (68.6), and Bhutan at number 74 (70.5) among India’s neighbours. Maritime neighbours Sri Lanka and the Maldives are ranked 93rd and 53rd, respectively.
- **Finland, Sweden, and Denmark are in the top three**, and 19 of the top 20 nations are in Europe.
- While **only a small portion of global targets are on track**, the report noted that several countries have made significant progress in basic infrastructure and services, especially in the areas of electricity (SDG 7), internet usage (SDG 9), under-five mortality (SDG 3), neonatal mortality (SDG 3), and mobile broadband access (SDG 9).
- **Barbados, Jamaica, and Trinidad and Tobago** were most committed to the UN system and **multilateralism**. Chile is the best OECD performer at number seven, while Brazil is the top G20 economy at number twenty-five.
- For the second year in a row, the **United States**, which has adopted policy stances against the SDGs, **came in last (193rd)**.
- **Global commitment to the SDGs:** In order to promote sustainable development, **190 of the 193 nations have submitted national action plans**.
- **East and South Asia’s progress:** Since 2015, East and South Asia have **made the fastest progress towards the SDGs** on average, primarily due to the socioeconomic targets’ quick advancement.
- None of the 17 objectives are currently on track to be accomplished globally by 2030. In many regions of the world, structural vulnerabilities, conflicts, and a lack of funding impede the advancement of the SDGs.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the UN Sustainable Development Report, 2025:

1. Recently, India ranked 99th in the 2025 UN Sustainable Development Report, securing a spot among the top 100 countries in the SDG Index for the first time.
2. For the second year in a row, the United States, which has adopted policy stances against the SDGs, came in last (193rd).

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)

FATF FLAGS PAKISTAN'S MISSILE PROCUREMENT EVASION TACTICS

Why in News: In its latest report titled 'Complex Proliferation Financing and Sanctions Evasion Schemes,' FATF flagged Pakistan's attempts to procure equipment for its missile program by mislabeling shipments.

Key findings of the report

- The report provides a thorough examination of the **changing strategies and tactics employed to avoid sanctions linked to proliferation financing.**
- Increasingly **complex strategies are being used by illicit actors to get around export controls and avoid sanctions.**
- The report identified serious weaknesses in the international financial system's ability to prevent the funding of WMD.
- Just 16 percent of countries assessed by the FATF and its global network have demonstrated high or substantial effectiveness in countering financing to security threats.
- According to the report, those looking to finance the proliferation of WMDs will continue to take advantage of flaws in the current controls unless the public and private sectors immediately improve technical compliance and effectiveness.

- The report links the importer to Pakistan's National Development Complex, which manages missile production, in addition to exposing that crucial parts for ballistic missiles are coming from China.
- The disclosures in its dossier are probably going to be used by India to further pressure Pakistan to be added to the FATF's "**grey list**," which identifies nations with shortfalls in their anti-money laundering and anti-terror financing frameworks.

Financial Action Task Force (FATF)

- **Formation:** Established in 1989
- **Objective:** To strengthen the integrity of the financial sector and promote safety and security by shielding financial systems and the broader economy from threats of money laundering, terrorism financing, and proliferation.
- **Secretariat:** Paris
- **Members:** The FATF currently has 40 members, including two regional organisations (the European Commission and the Gulf Cooperation Council) and 38 jurisdictions.
- **India joined FATF in 2010.**

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, the report titled 'Complex Proliferation Financing and Sanctions Evasion Schemes,' was published by?

- (a) Financial Action Task Force (FATF)
- (b) International Monetary Fund (IMF)
- (c) World Bank (WB)
- (d) None of the Above

Answer: (a)



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PERSONALITIES IN NEWS

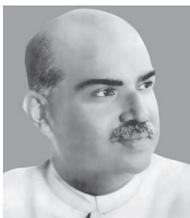
DR. SYAMA PRASAD MOOKERJEE

Why in News: Leaders pay tributes to Dr. Syama Prasad Mookerjee on his 125th Birth Anniversary.

About Dr. Syama Prasad Mookerjee

- **Pre Independence**

- He was elected to the University Senate and Syndicate in 1924.
- He initially joined the Bengal Legislative Council as a Congress candidate in 1929 but resigned soon after, choosing to be an independent to protect the University's interests.
- As Vice-Chancellor of Calcutta University (1934), he promoted a progressive vision for education, played a pivotal role in promoting Indian languages and fostering intellectual growth, and invited luminaries like Rabindranath Tagore to inspire students.
- He joined the Hindu Mahasabha and, in 1937, united non-Congress forces to form a Progressive Coalition government under the leadership of Fazl-ul-Haq, serving as the Finance Minister.
- In 1942, he became the acting President of the Hindu Mahasabha and declared complete independence for India as its political goal.
- He resigned from the Bengal Cabinet in November 1942, protesting against the Governor's interference in administration and criticising provincial autonomy as ineffective.
- His humanitarian efforts during the Bengal famine of 1943 included relief initiatives, which highlighted his commitment to serving society.



- **Post Independence**

- He joined the interim government under Jawaharlal Nehru as **Minister for Industry and Supply**.
- He laid the foundation for India's industrial growth by establishing iconic institutions like the Chittaranjan Locomotive Factory and Sindri Fertiliser Corporation.
- He resigned from this position due to ideological differences.
- He founded the All-India Bharatiya Jan Sangh in 1951 to champion nationalist ideals.

Key Ideologies and Statements

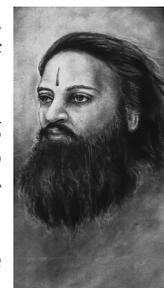
- **On Framing the Constitution:** He believed that framing the constitution was a deep and special responsibility, as it was the first time India, after having come under British rule, was able to frame its own constitution.
- **On Hindi as the National Language:** He stated that if a language is to be accepted by all, it must be by a process of coercion, and that would not be possible to achieve. He suggested that while English would have to be replaced eventually, it needed to be replaced progressively.
- **On Foreign Policy:** He advocated for peace and the policy of negotiations.
- **On Fundamental Rights:** He stood for freedom of expression, freedom of thought, freedom of association, and freedom of religion.

ALLURI SITARAMA RAJU

Why in the News: Recently, India celebrated the 128th birth anniversary of Alluri Sitarama Raju.

Early life

- Alluri Sitarama Raju was **born on July 4, 1897, in the Andhra Pradesh** village of Mogallu, close to Bhimavaram.
- Sitarama Raju finished his early schooling in his hometown before moving to Visakhapatnam to pursue his further education.
- **At the age of eighteen, he became a Sanyasi** and gave up all material pleasures.
- As a bala sanyasi, he **roamed the Agency's hills and forests**, mixing with the local tribal population.
- He was **viewed by the tribal people as a mystic** who would save them from the degrading treatment they endured at the hands of the British government.

**Role in freedom struggle**

- **At first**, Sitarama Raju encouraged the tribal people to **boycott the colonial courts** and seek justice in the local panchayat courts, **influenced by Gandhiji's non-cooperation movement**.

Rampa Rebellion

- He began what is now called the **Rampa Rebellion against the British in August 1922**.

SREE NARAYAN GURU

- The **Madras Forest Act, 1882** was passed in order to clear the forests in Rampa administrative area, which **limited the tribal communities' freedom of movement** and prevented them from using their traditional Podu agricultural system.
- A **tribal uprising started** as a result of this oppressive order.
- He **fought the British with guerrilla warfare**.
- He killed many British officers, raided many police stations, launched attacks with his army of tribal people, and stole weapons and ammunition for their fight.
- He was able to avoid the British for a considerable amount of time because he had a lot of local support.
- The authorities were so irritated by his **two-year armed conflict (1922–24)** with the British that a **reward of Rs. 10,000 was offered** to anyone who could apprehend him, alive or dead.
- The British, meanwhile, persisted in causing the tribal people suffering.
- Being the good man that he was, **Sitarama Raju gave up in an attempt to ease the sufferings of the tribe, hoping to receive a fair trial in exchange**.
- But on **May 07, 1924**, he was treacherously trapped, tied to a tree and **shot dead**.
- His valiant struggle against the British Government came to an end on May 8th when he was cremated.
- His legacy of anti-imperialist rebellion is one of inspiration.
- History now remembers him as a **fearless revolutionary who stood up for the freedom and rights of the tribal people**.
- He was given the title "**Manyam Veerudu**" (Hero of the Jungle) in recognition of his bravery and ferocious spirit.
- **His birthdate, July 4th**, is celebrated annually by the Andhra Pradesh government as a state holiday.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Alluri Sitarama Raju:

1. He played a key role in the Rampa rebellion.
2. He fought with the British through various non-violent tactics.
3. He was given the title 'Manyam Veerudu' for recognition of his bravery.

Which of the statements given above is/are correct?

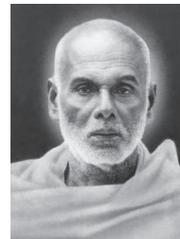
- (a) 1 and 2 only (b) 1 and 3 only
(c) 2 only (d) 2 and 3 only

Answer: (b)

Why in News: Prime Minister addressed the centenary celebration of the historic conversation between two of India's greatest spiritual and moral leaders Sree Narayana Guru and Mahatma Gandhi in Vigyan Bhawan, New Delhi.

About Sree Narayan Guru

- Sree Narayana Guru (20 August 1856 – 20 September 1928) was a saint, philosopher, spiritual leader, and a social reformer from Kerala, India.
- He was born into a backward Ezhava family in an era when people from such communities faced social injustice in the caste-ridden society of Kerala
- Driven by the strong desire to break superstitions and taboos that were holding back the Indian society from progress, the Guru underwent years of strict penance and meditation before attaining enlightenment.
- Luminaries such as Mahatma Gandhi, Rabindranath Tagore, and many others, were all enthused by the Guru's ideals and teachings.



Teachings and Principles

- Sree Narayana Guru's philosophies on openness and inclusivity are especially relevant in a world that is becoming increasingly diverse today.
- He propagated the message of '**One Caste, One Religion and One God for Mankind**'.
- Whichever be the religion of a man, it suffices if it makes a better man.
- Acts that one performs for the sake of oneself should also aim for the good of others.

Social Reforms

- Born in the Ezhava caste, Sree Narayana Guru experienced discrimination based on caste.
- It was against this discrimination that the Guru performed his first major public act.
- He consecrated a temple for Lord Shiva with a slab inscribed with the words, Truth, Ethics, Compassion, Love. This was the first time that a Hindu idol was ordained by a non-brahmin in Aruvippuram village of Kerala, and it sparked off the anti-caste revolution against the upper-caste communities.
- The Guru went on to establish more than 40 temples across the state of Kerala, to enable everyone, including the lower caste and oppressed segments of society, to practise their faith.
- The Guru also led the '**Vaikom Satyagraha**' protest movement against caste discrimination, untouchability, and inequality.
- The Sivagiri foundation was established in 1924 by the Guru to promote virtues of cleanliness, education, devotion, agriculture, handicrafts, and trade.

Relevance of His Teachings in Today's World

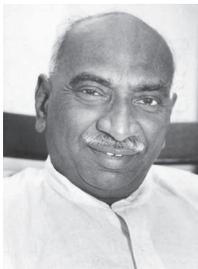
- Sree Narayana Guru's reforms and revolutionary ideas have not only endured but have also made a significant impact globally.
- His philosophies on openness and inclusivity are particularly relevant in our increasingly diverse world.
- His teachings remain essential in navigating the challenges of today's rapidly changing and globalised society, helping to safeguard social harmony by fostering open-mindedness and practical religiousness.
- His vision of a society free from discrimination is being actively pursued in India today through a saturation approach aimed at eliminating every possibility of discrimination.
- The country's current policies and decisions reflect his vision of social welfare through education, organisation, and industrial progress.
- Several government initiatives and national efforts align with Sree Narayana Guru's teachings.
 - PM Awas Yojana
 - Jal Jeevan Mission
 - PM Janman Yojana
 - National Education Policy
 - Skill India
 - Eklavya residential schools

K. KAMARAJ

Why in News: Recently, the Prime Minister Shri Narendra Modi paid homage to Thiru K. Kamaraj Ji on his birth anniversary today.

Key Details

- Kumaraswami Kamaraj (born July 15, 1903, Virudunagar, India—died October 2, 1975, Madras [now Chennai]) was an Indian independence activist and statesman who ascended from modest beginnings to become the **president of the Indian National Congress**, the **chief minister of the Madras state** in independent India and a **lawmaker in the Madras Presidency**, during British rule.



Early life

- Kamaraj was **born in Madras presidency** (Tamil Nadu) to a family of the Nadar caste.
- He **stopped attending school when he was twelve** and started working in a clothing store.
- He was immediately drawn to the fight for Indian independence from British rule, and **started going to public gatherings hosted by local Congress Party leaders** before volunteering in a variety of roles.

Political activities in pre-independence India

- At the **age of seventeen**, Kamaraj became a full-time worker for the cause of independence, joining the party at the same time when Mahatma Gandhi launched noncooperation movement (1920–22)
- He was **jailed for two years** for his **involvement in the 1930 Salt March** act of civil disobedience.
- The British **imprisoned him** multiple times more, most notably between 1942 and 1945 for his lead role in the **Congress Party's massive anti-British Quit India campaign**.
- He was elected **general secretary of the Congress Party's Madras branch in 1936** and **president of the party in 1940**.
- In **1937** and **1946**, Kamaraj was elected to the **Madras Presidency legislature**.
- He also **served on the Constituent Assembly in 1946**.

Post-independence political career

- He was promoted to the **national party's Working Committee in 1947** and stayed a member of that organisation until 1969.
- Kamaraj ran for and was elected to the **first Lok Sabha in 1951**.
- Kamaraj won a seat in the state legislature in 1954 after being elected **chief minister of Madras state in 1954**.
- He was credited with significantly **improving the state's educational system** while in office by implementing policies that **constructed new schools, made education mandatory**, and gave students **free uniforms and meals**.
- He **resigned voluntarily from office in 1963** as part of the **Kamaraj Plan**, which called for **high-ranking state and national officials to resign voluntarily in order to focus their energies on reviving the Congress Party at the grassroots level**. He was named the **party's president shortly after**.
- He played a **major role in the election of Lal Bahadur Shastri in 1964** and **Indira Gandhi in 1966**.
- However, the **split in the Congress in 1969** (he remained in the Organisation Congress) and the **General Elections of 1971, resulted in another set-back to his political prestige and authority**.
- Kumaraswami Kamaraj **continued to work among the masses** until the very end.
- He was **honoured posthumously with India's highest civilian award, the Bharat Ratna, in 1976**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding K. Karmraj
1. He was first Chief Minister of Madras state in Independent India

2. He was honoured posthumously with India's highest civilian award, the Bharat Ratna, in 1976.

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)

HEMAM NEELMANI SINGH

Why in News: At a posthumous felicitation event hosted by the Bharat Vikas Parishad, the Union Home Minister recently paid tribute to Hemam Neelmani Singh, a well-known Manipur freedom fighter who was affiliated with the Indian National Army (INA).

Hemam Neelmani Singh

- Hemam Neelmani Singh was a **social reformer, freedom fighter, and Manipur's former deputy minister of education.**
- He was instrumental in the fight for Indian independence, particularly in the Northeast, and made a substantial contribution to the linguistic and educational reforms that followed.
- **Early Life and Role in INA**
 - Singh was born in 1915 and was **influenced by both Bose and Gandhian ideas.**
 - However, he was more oriented towards Netaji Subhas Chandra Bose's ideas and **joined the INA in 1944.**
 - He donated his home in Moirang Konjengbam to serve as the headquarters for the INA.



- He was instrumental in the **Battle of Imphal in 1944** and the **first-ever raising of the Indian tricolour on Indian soil on April 14, 1944, at Moirang.**
- He was later **imprisoned by the British in 1945** and released in 1946.
- **Contributions After Independence**
 - In his capacity as Manipur's Deputy Education Minister, he spearheaded important programmes for **women's emancipation and education reform** while promoting **easier access to higher education.**
 - He was instrumental in **introducing science stream in Moirang's college** and **supported Hindi** as a unifying language in Manipur to promote national integration.
- **Legacy**
 - Frequently cited as an integral part of Manipur's freedom movement alongside Mairembam Koireng Singh, the state's first chief minister.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Freedom fighter Heman Neelmani Singh belongs to the state of?
- (a) Manipur
 - (b) Meghalaya
 - (c) Assam
 - (d) Arunachal Pradesh

Answer: (a)

MANGAL PANDEY

Why in News: The nation honors the freedom fighter Mangal Pandey on his birth anniversary, celebrated on July 19th.

Name	Mangal Pandey
Birth Date and Place	19 July 1827, Ballia District, Uttar Pradesh
Occupation	Sepoy in 34th Bengal native Infantry of the British East India Company
Known for	Barrackpore mutiny
Death Date and Place	08 April 1857, Barrackpore
Tribute	GoI issues postage stamp with his image in October 1984
Values	Courage, Leadership, Determination, Patriotism

Key facts about Mangal Pandey

- He is regarded as the pioneer of **India's first war of Independence** in 1857.
- He joined the British EIC in 1849.
- He rebelled against the introduction of cartridges greased with cow and pig fat, which violated the religious beliefs of Hindu and Muslim soldiers.



- He attacked and fired upon his senior Sergeant Major on 29 March 1857.
- His action sparked outrage and inspired other soldiers and civilians to rise in rebellion across India.
- He was arrested, court-martialed, and hanged till death on 8 April 1857.
- Following the incident, his regiment was disbanded, similar to the 19th infantry at Berhampore.
- He is remembered for his courage and sacrifice.

Centre of Revolt	Leader	British Officials (Suppressed the revolt)
Delhi	Bahadur shah zafar	John Nicholson
Lucknow	Begum Hazrat Mahal	Henry Lawrence
Kanpur	Nana Saheb	Sir Colin Campbell
Jhansi & Gwalior	Rani Lakshmibai & Tantia Topo	General Hugh Rose
Bareilly	Khan Bahadur Khan	Sir Colin Campbell
Bihar	Kunwar Singh	Willian Taylor
Allahabad & Banaras	Maulvi Liyakat Ali	Colonel Ocell

Books written on the Revolt of 1857

- **The Indian war of Independence by Veer Savarkar**
- **Rebellion, 1857: A Symposium by Puran Chand Joshi**
- **The Indian Mutiny of 1857 by George Bruce Malleson**
- **Great Mutiny by Christopher Hibbert**
- **Religion and ideology of the Rebels of 1857 by Iqbal Hussain**
- **Excavation of Truth: Unsung Heroes of 1857 war of Independence by Khan Muhammad Sadiq Khan.**

MIAN TANSEN

Why in News: The Madhya Pradesh High Court has turned down a request to permit religious and cultural events at Tansen’s tomb in Gwalior.

Key Details:

- The court stated that the site is a protected monument under the Archaeological Survey of India (ASI).
- The case centered around a request to permit religious ceremonies such as Urs and Namaz at the tomb of Hazrat Sheikh Muhammad Ghaus, which is also the site of Tansen’s grave.
- The mausoleum of Hazrat Sheikh Muhammad Ghaus was designated as a protected monument of national importance in 1962 in accordance with the Ancient Monuments and Archaeological Sites and Remains Act of 1958.



Court’s Rationale for Denial

- The High Court determined that permitting religious activities at a Centrally Protected Monument was not allowed.
- The court observed that the petitioner lacked any legal entitlement to the tomb.
- It cited earlier court decisions that had consistently rejected ownership claims and supported the ASI’s oversight of the site.

Implications for Cultural Heritage

- The ruling of the court establishes a balance between cultural traditions and the safeguarding of historical sites.
- It emphasizes the necessity of safeguarding monuments from actions that may compromise their structural and cultural integrity.
- This decision sets a precedent for upcoming cases related to protected monuments in India.

Mian Tansen

- Ramtanu, commonly known as Mian Tansen, or Sangeet Samrat, was a Hindustani classical musician.
- He spent most of his adult life in court of Hindu King of Rewa, Raja Ramchandra Singh Baghel, as musician and composer.
- In 1562, Tansen joined Akbar’s court, and his performances became the subject of many court historians. His abilities gained widespread fame.

Hazrat Sheikh Muhammad Ghaus Gwaliori

- He was a Sufi saint, musician, and author of the Shattari order from the 16th century.
- He is recognized for his work “Jawahir-i Khams” (The Five Jewels) and for translating a Yoga text into Persian.
- He lived during the time of Mughal emperors Babur, Humayun, and Akbar, and contributed to Babur’s conquest of Gwalior Fort.

Tomb of Sufi saint Sheikh Muhammad Ghaus

- The mausoleum of Hazrat Sheikh Muhammad Ghaus was built following his death in 1563.
- The mausoleum is designed in the Mughal architectural style, featuring hexagonal towers at each corner, small domes atop every tower, and a prominent central dome.
- It’s made of sandstone and includes intricate, stone-carved lattice work.
- A veranda surrounds the main chamber, displaying elaborate stone screens inspired by Gujarati architecture.
- These features serve as forerunners to subsequent structures, including the tomb of Shaikh Salim Chishti located at Fatehpur Sikri.
- This tomb is regarded as a sacred site for both Hindus and Muslims.

- The tomb is located in Gwalior, close to Gwalior Fort.

Archaeological Sites and Remains (AMASR) Act, 1958

- The Parliament of India has enacted a law aimed at safeguarding ancient and historical monuments, archaeological sites, and remains that hold national importance.
- This law governs archaeological excavations and ensures the protection of sculptures, carvings, and similar artifacts.
- According to the regulations, the zone within 100 meters of a monument is designated as a prohibited area.
- Furthermore, the region extending 200 meters from the monument is classified as a regulated area.

- Any repairs or alterations to structures within this vicinity must obtain prior approval.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. Discuss the contribution of Mian Tansen to the development of Hindustani classical music and his significance in the cultural history of the Mughal court. In your answer, highlight how his music reflected the socio-political milieu of Akbar's reign. [250 Words] [15 Marks]

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ARTICLES FROM YOJANA (JULY 2025)

TOPIC 1: PM MUDRA YOJANA: A DECADE OF HOPE, OPPORTUNITY, AND INCLUSIVITY

I. Introduction: A Decade of Empowerment

- **Launch Year:** April 2015
- **Objective:** Provide financial support to micro and small enterprises
- **Significance:** Fostered entrepreneurship, created jobs, promoted economic growth
- **Reach (as of March 2025):**
 - ₹33.32 lakh crore disbursed
 - 52.73 crore loan accounts
 - Culture of micro-entrepreneurship embedded across India

II. Case Study: Sima Rani Malakar – Symbol of Aspirational India

- **Location:** Shillong
- **Background:** Limited household income, ambition to provide quality education
- **Action:** Took ₹40,000 Shishu loan for a tailoring business
- **Outcome:** Improved income; children's education in a quality school

III. Importance of MSMEs and Financial Inclusion



- **MSME Role:**
 - Drive economic growth, employment, exports

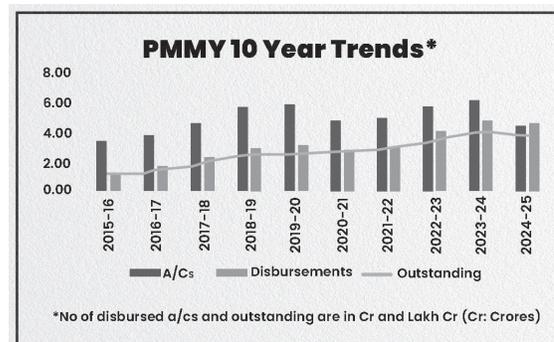
- Heterogeneous nature of MSMEs in India – from small artisans to technology based startups
- **Financial Inclusion Strategy:** To promote Financial inclusion in India, the GOI's policy framework is focused on three pillars:
 - (i) Banking the unbanked
 - (ii) Securing the unsecured
 - (iii) Funding the unfunded
- **PMMY's Role:** Strong step specifically towards addressing the third pillar : **funding the unfunded; providing microcredit at scale.**

IV Structure of PMMY Loans

- **Loan Categories:**
 - **Shishu:** Up to ₹50,000
 - **Kishore:** ₹50,001–₹5 lakh
 - **Tarun:** ₹5.01–₹10 lakh
 - **Tarun Plus:** ₹10.01–₹20 lakh (new)
- **Goal:** Promote nuanced financial access for MSMEs, particularly underserved and informal sectors

V. Factors Behind PMMY's Popularity

- (i) **Zero Collateral:** No need for assets; backed by CGTMSE/CGFMU guarantees
- (ii) **Competitive Interest Rates:** Affordable for small businesses
- (iii) **Flexible Repayment:** Tailored EMIs based on business cash flows
- (iv) **Digital Accessibility:** Apply via banks or JanSamarth portal
- (v) **Broad Participation:** Supported by PSBs, private banks, RRBs, SFBs, MFIs, NBFCs

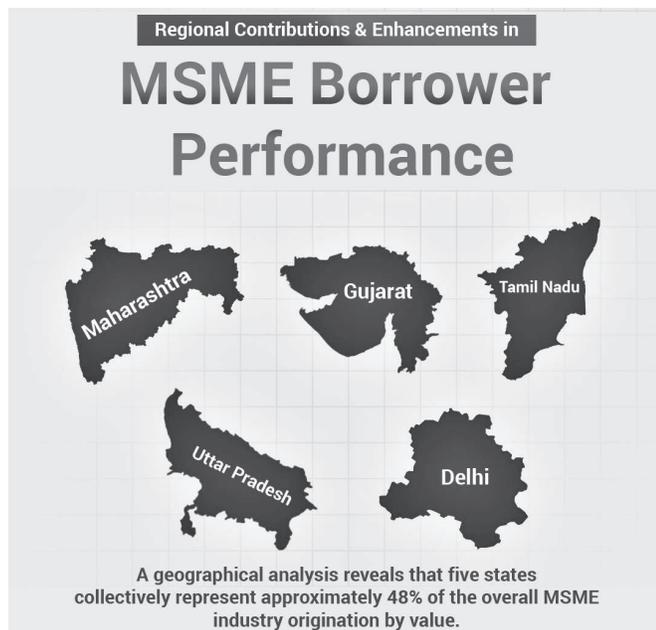


VI. Performance Metrics

- **Total Sanctioned (FY2025):** ₹5.20 lakh crore
- **Total Disbursed (FY2025):** ₹5.09 lakh crore
- **Cumulative (as of March 2025):**
 - **Sanctioned:** ₹34.09 lakh crore
 - **Disbursed:** ₹33.32 lakh crore

VII. State-Wise Distribution

- **Top 5 States (Cumulative Disbursement):**
 - Tamil Nadu, Uttar Pradesh, Karnataka, West Bengal, Bihar
 - Account for 46.3% of total disbursements



- **Alignment with Informal Micro Enterprises (IME) Registration:**
 - Top PMMY states are also top IME registration states (via Udyam Assist Platform)

VIII. Loan Category stats:

(i) **Shishu Loans:** 80% of accounts, 38% of value (till FY 2024)

(ii) **Kishore Loans:** 18% accounts, ~38% of value

(iii) **Tarun Loans:** 2% accounts, ~24% of value

- **FY25 Distribution:**
 - **Shishu:** 18.1%
 - **Kishore:** 50.9%
 - **Tarun:** 30.2%
 - **Tarun Plus:** 0.8%
- **Loan Size Trend:**
 - ₹39,405 (FY2016) ₹81,108 (FY2024) ₹1.06 lakh (FY2025)
- **Higher Ticket Size Loans:**
 - 'Kishore' + 'Tarun' loans increased from 57.2% (2016) to 82.7% (2025)

IX. Transformative Impact

- **Financial Inclusion**
 - **New Accounts (as of 31 Mar 2025):** ₹10.56 lakh crore sanctioned to 10.97 crore new accounts (31% of total)
 - **Women Entrepreneurs:** ₹14.85 lakh crore sanctioned (~44% of total)
 - **SC/ST/OBC Beneficiaries:** ₹11.72 lakh crore (~34.5%)
- **Empowerment of Small Entrepreneurs**
 - Self-employment and economic agency
 - Strong rural penetration.
- **Promotion of Informal Micro-Enterprises**
 - Strengthens local economies and job generation.
- **Job Creation**
 - **Supports micro-enterprises** → high employment potential per unit turnover
- **Access to Credit**
 - Lower barriers for collateral-free loans
- **Reduction in Economic Inequality**
 - **Gini Index Decline:** Strong negative correlation (-0.84) with PMMY loan growth (Source: SIDBI)
- **Multi-dimensional Poverty Reduction**
 - **Moderate Positive Correlation (0.44):** Between PMMY disbursement and poverty reduction in top 10 states (2016–2021)

X. Challenges & Opportunities

- **Under-penetrated States:**
 - High-population and North-Eastern states need more coverage.
- **Awareness & Financial Literacy:**
 - Campaigns essential to increase reach and responsible borrowing.

XI. Role of MUDRA (SIDBI Subsidiary)

- **Mandate:** Facilitate seamless credit flow by refinancing PMMY loans
- **Cumulative Refinance (as of 31 March 2025):**
 - **Sanctioned:** ₹1.03 lakh crore
 - **Disbursed:** ₹1.00 lakh crore
 - **Outstanding:** ₹29,421 crore

XII. Conclusion: PMMY's Legacy and Way Forward

- PMMY is more than a loan scheme — it's a story of hope, inclusion, and opportunity
- Aligns with 'Viksit Bharat' vision by fostering grassroots entrepreneurship
- Going forward, the scheme holds the promise to further empower India's aspiring entrepreneurs

TOPIC 2: REIMAGINING ENTREPRENEURIAL SKILLS

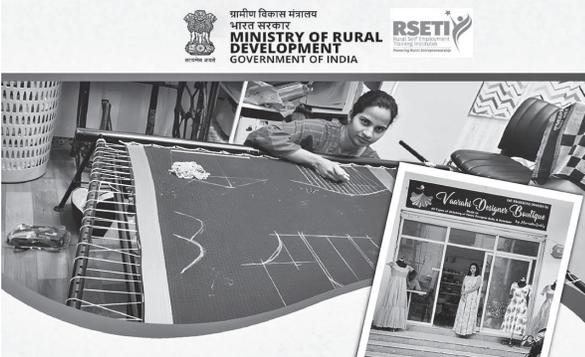
I. Genesis of Entrepreneurial Skilling in Rural India

- Establishment of first Rural Development & Self employment training Institute (RUDSETI) -1982:
 - Originated in Ujire, Karnataka.
 - Joint initiative by Canara Bank, Syndicate Bank, and Sri Dharmasthala Manjunatheshwara Educational Trust.
 - Aimed at rural entrepreneurial training through short-term courses (6 to 60 days) and long-term hand-holding (2 years).
- Adoption by Government (2007-08):
 - Model adopted as Rural Self Employment Training Institutes (RSETIs).
 - Expansion to over 600 RSETIs nationwide.

II. RSETI Performance and Contributions

- Training Reach:
 - 55.53 lakh rural youth trained in domain and entrepreneurial subjects.
 - 73% settlement rate with 40.27 lakh youths initiating enterprises.
- Financial Support:
 - Bank linkages for 20.40 lakh trained youth.
- Broader Impact:
 - Youth transform into job creators.
 - Stimulates rural economic development and inclusivity.

III. Evolving Entrepreneurship Ecosystem



RUDSETI helped Mamatha to transform and uplift herself holistically

- Vastra Chitrakala Udyami' training program made her an entrepreneur
- Successfully running her own boutique today



- Navdeep Kaur Sidhu has her own dairy farm today
- Has a stable monthly income of 25,000 pm

Name: Navdeep Kaur Sidhu
Bathinda, Punjab

- Technological Advancements:
 - Emergence of AI, data analytics, online marketing platforms (e.g., GeM).
- Other Government Schemes:
 - ESDP and PMEGP under MSME ministry.
 - Potential for synergies and multiplier effects.
- Inclusivity Imperative:
 - Special focus required for women, tribals, differently-abled, ex-servicemen.
- New Enterprise Models:
 - Gig economy, logistics, home-based enterprises.
- Demographic Pressure:
 - 8 million youth enter the workforce annually.

IV. Need for a Paradigm Shift

- Challenges with Current RSETI Model:
 - Limited course offerings (only 60).
 - Inadequate training reach per district (750-1000/year).
 - Marginalised communities underrepresented.
 - Inaccessibility of training centres.
 - Lack of provision for reskilling/upskilling.

V. Reforms for a Reimagined Skilling Ecosystem

- From Top-Down to Bottom-Up Planning:
 - Skilling demand to be captured at district level.
 - Resource allocation based on actual demand.
- Community-Based Training:
 - DAY-NRLM promoted Community Institutions to organise village-level trainings.
 - Use of Community Managed Training Centres (CMTCs).
 - Outsourcing training modules to Cluster Level Federations (CLFs).

- **District-Specific Training Customisation:**
 - 4-5 focused trades per district based on local resources and market demand.
 - Cluster development (e.g., banana fibre industries in banana-growing areas).
- **Centres of Excellence (CoE):**
 - Select RSETIs to be developed as sector-specific CoEs.
 - Linked with Aspirational District Programme.

VI. Making Trainings More Accessible & Inclusive

- **Flexible Training Schedules:**
 - Duration: 3-4 hours/day based on mutual agreement.
 - Encouragement for women participation.
- **On-the-Job Training Focus:**
 - Conduct at master trainers' work sites for immersive learning.
- **Addressing Low-Return Trades:**
 - Investigate issues (e.g., outdated tech, poor design).
 - Enhance marketability via aggregation and digital marketing.

VII. Empowering Master Trainers

- **Recognition of Local Expertise:**
 - Community-identified master trainers.
 - No rejection due to absence of formal certificates.
- **Incentivising Trainers:**
 - Remuneration based on trade and training duration.
 - Fosters trust and mentorship.

VIII. Supporting Growth-Oriented Enterprises

- **Scale-Up Opportunities:**
 - Higher credit linkage and business development planning.
 - Leverage schemes like PMMY, Stand-Up India, PMFME.

- **Business Clinics:**
 - RSETIs to establish advisory platforms for mentoring.

IX. Up-skilling, Reskilling, and Higher Learning

- **Paid Courses:**
 - For serious, already-trained candidates.
 - Bridge to higher skilling institutes with mentoring support.
- **Role of RSETIs:**
 - As hubs of innovation and incubation.
 - Offer accelerator support for scalable enterprises.

X. Digital Marketing & Modern Platforms

- **Shift from Physical to Online:**
 - Emphasis on digital-first marketing strategies.
 - Utilisation of WhatsApp, Instagram.
- **Marketing Sakhis & Fulfilment Centres:**
 - Community Resource Persons trained in digital marketing.
 - Localised fulfilment hubs to manage logistics.

XI. Conclusion: Towards India@2047

- **Vision:**
 - Align with the PM's vision for a Developed India by 2047.
- **Key Drivers:**
 - Scalable and inclusive skilling.
 - Holistic support in training, mentoring, credit, and marketing.
- **Outcome:**
 - Empowered rural youth and women.
 - Thriving rural entrepreneurial ecosystem.

ARTICLES FROM KURUKSHETRA (JULY 2025)

TOPIC 1: COOPERATIVES REALIZING THE DREAM OF VIKSIT BHARAT @2047

I. Establishment of the Ministry of Cooperation

- On 6th July 2021, India created an **independent Ministry of Cooperation**, a historic move dedicated to boosting the cooperative sector.
 - Prior to this, cooperative issues were under the **Ministry of Agriculture and Farmers Welfare**.
 - **Amit Shah** was appointed the **first Minister of Cooperation**.
- **The Ministry was created to:**
 - Provide **administrative, legal, and policy support**.
 - Strengthen and revitalize the cooperative movement in India.
 - Play a central role in **socio-economic transformation**.

II. Vision and Goals of the Ministry

- Promote an **inclusive cooperative-based economic model**.
- Enable cooperatives to contribute to development across agriculture, dairy, and rural entrepreneurship.
- Support over **8.40 lakh cooperative societies** with more than **29 crore members**.

III. Key Achievements and Reforms

(i) Primary Agricultural Credit Societies (PACS) Reform

- PACS are the grassroots units of India's cooperative credit structure, originating in **1904**.
- **Challenges faced:**
 - Outdated operational structures.
 - Lack of digital infrastructure.
- **Model Bye-Laws for PACS:**
 - Transform PACS into **multi-functional rural service hubs**.
 - Allow PACS to diversify into **agriculture services, retail, warehousing, healthcare**, and more.
 - Enable employment generation and delivery of public services.

(ii) Digitization of PACS

- **Computerization project** launched with NABARD's support.
- **Objectives:**
 - Standardize digital infrastructure across PACS.
 - Implement cloud-based ERP software in regional languages.
 - Train staff and digitize records.
- **Benefits:**
 - Real-time accounting.
 - Better coordination with DCCBs and StCBs.
 - Enhanced transparency and efficiency.

(iii) Expansion of PACS and Multipurpose Societies

- New PACS being set up in areas like:
 - **Dairy, fisheries, warehousing, retail, healthcare**.
- Goal: One **professionally managed PACS per Panchayat**.
- Outcome: Last-mile cooperative service delivery with local governance.

(iv) Empowering PACS with Public Services

- **PACS are now running:**
 - **Common Service Centers (CSCs)**
 - **Jan Aushadhi Kendras**
 - **Kisan Samridhhi Kendras**
 - **LPG and petrol distribution, Pani Samitis, FPOs**
- **Enhances access to:**
 - Affordable medicines, banking services, LPG, and government schemes.
 - Employment generation and rural-urban connectivity.

(v) Creation of National Cooperative Database (NCD)

- **Real-time digital platform for:**
 - Monitoring cooperative performance.
 - Planning and targeted intervention.
- **Helps:**
 - Identify dormant or underperforming societies.
 - Enhance ease of doing business.

(vi) Formation of National-Level Cooperative Societies

- **Bharatiya Beej Sahkari Samiti Limited (BBSSL):** Seed production.
- **National Cooperative Organics Limited (NCOL):** Organic farming.

- **National Cooperative Exports Limited (NCEL):** Export facilitation.
- **Objective:**
 - Connect grassroots cooperatives with **national and global markets**.
 - Expand **value chains** and income diversification.

IV. Legislative Strengthening – MSCS Amendment Act, 2023

- Strengthens legal framework for **multi-state cooperatives**.
- Key features:
 - Mandatory audits and elections.
 - Transparent and professional management.
 - Reduced political interference.

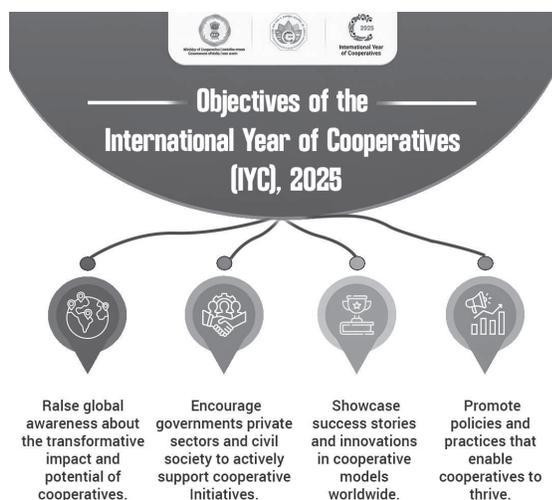
V. White Revolution 2.0

- Focuses on **modernizing dairy cooperatives**, especially women-led.
- **Goals:**
 - Increase milk production.
 - Build infrastructure and offer veterinary services.
 - Promote women’s leadership and clean milk production.
- **Promotes:**
 - Digital platforms for milk procurement.
 - Value addition and income generation.
 - Food security and rural employment.

VI. Grain Storage Revolution in Cooperatives

- Launch of the **World’s Largest Grain Storage Scheme**.
- Pilot warehouses in **11 PACS across 11 states**.
- Expansion to **500 PACS** in the next phase.
- **Outcomes:**
 - Reduced post-harvest losses.
 - Improved price realization.
 - Employment in storage, logistics, maintenance.

VII. International Year of Cooperatives (IYC) 2025



- Declared by the **United Nations**.
- Theme: **“Cooperatives Build a Better World”**.
- **Objectives:**
 - Celebrate cooperatives’ economic/social contribution.
 - Promote **innovation, global partnerships, and youth involvement**.
 - Aligned with **Sahkar Se Samridhhi and Viksit Bharat @2047**.

VIII. Viksit Bharat @2047 Vision and Cooperative Role

- Target: **\$30 Trillion Economy**, 100% literacy, healthcare, and sustainable urban growth by 2047.
- **Cooperatives are tools for:**
 - Inclusive and participatory development.
 - Bridging rural-urban divide.
 - Democratizing economic opportunity.
- **Ministry aims to:**
 - Strengthen cooperatives with **digitalization, transparency, and governance reforms**.
 - Empower local people as active development participants.

IX. Strategic Focus Areas for Cooperatives

- Expand **ease of doing business**.
- Improve access to **affordable finance**.
- Promote **women’s participation, youth entrepreneurship**.
- Advance **technology adoption and skill development**.
- Future cooperative sectors:
 - **Organic farming, clean energy, food processing**
 - **Agri-tech, supply chains, digital platforms**
 - **Rural tourism, healthcare services**

X. Technology and Digital Governance

- **Key tools and portals:**
 - **CRCS, CRCS-Sahara Refund Portal, e-Samyukti, e-Samridhi**
- **Advanced tech like:**
 - **Satellite farming, blockchain, data analytics, mobile apps**

XI. Inclusivity and Awareness Building

- **Promote:**
 - **Women’s leadership, youth engagement**
 - **Cooperative education** in schools and colleges
- Create awareness about cooperatives as **career paths**.

XII. Conclusion

- **Viksit Bharat 2047** is a **nationwide mission** for inclusive, just, and developed India.
- Cooperatives are central to this vision, ensuring grassroots prosperity.

- With robust policy support, legal reforms, and public participation, cooperatives can:
 - Mobilize communities.
 - Distribute benefits equitably.
 - Sustain local economies.
- They embody the principle of “**Prosperity through Cooperation**” and are crucial to India’s transformation into a **self-reliant, empowered, and developed nation by 2047**.

TOPIC 2: RISING IN UNISON: REALISING SAHKAR SE SAMRIDDI

I. Meaning and Cultural Roots of Cooperation

- **Definition and Origin:**
 - ‘Cooperation’ is derived from the Latin prefix “Co” (Saha – together) and “Operation” (Karya – work), meaning to work together.
 - It aligns with India’s cultural ethos, reflected in ancient scriptures like the Rigveda: “May we be of one mind, one spirit, let our thoughts be united.”
- **Historical Antecedents:**
 - Traditional Indian systems such as the **joint family structure, mutual aid, and communal ownership** bear evidence of cooperative philosophy.
 - References to cooperative behavior are found in the **Vedas, Manusmriti, and Arthashastra**. Kautilya’s Arthashastra stated: “**Those who do not join a cooperative effort must contribute labor and costs but receive no profit.**”

II. Evolution of Cooperation in India

- **Colonial Introduction (1904 Act):**
 - The **Cooperative Credit Societies Act of 1904** formally introduced cooperation in India under British rule.
- **Post-1912 Expansion:**
 - Amendments in 1912 widened the scope beyond rural credit.
- **Maclagan Committee (1914-15):**
 - Transitioned the movement from mere relief to socio-economic welfare.
- **Gandhian Perspective:**
 - Gandhi called Charkha (hand-spinning) the largest example of voluntary cooperation for economic independence.
- **Post-Independence Recognition:**
 - Cooperatives became central in India’s planned development, receiving increasing institutional support.

III. Institutional Support and Establishment of Ministry

- **Creation of Ministry of Cooperation (MoC):**
 - Established on **6th July 2021** by the Government of India.

- Aimed to institutionalize and promote cooperative-based economic development.
- **Slogan:** “Sahkar se Samriddhi” – Cooperation leads to Prosperity.

IV. Cooperative Values and Amul Example

- **Core Values:**
 - Based on **seven global principles** of cooperatives (democracy, equality, equity, solidarity, etc.).
 - Promote **people-centric business** over profit-maximization.
- **Amul as a Model Cooperative:**
 - Founded by **Sardar Vallabhbhai Patel** and **Tribhuvandas Patel**.
 - Embodies principles such as:
 - ◆ **Sahajeevan (living in unison)**
 - ◆ **Swanidhi (self-finance)**
 - ◆ **Swadeshi (Make in India)**
 - ◆ **Swarozgar (self-employment)**
 - ◆ **Swaudyamita (self-entrepreneurship)**
 - ◆ **Swanirbhar and Samriddhi (self-sufficiency and prosperity)**

V. Status of Cooperative Movement in India

- **Scale and Reach:**
 - Over **8.14 lakh cooperatives** with **29 crore members**.
 - **810,613 Primary Cooperatives** and **19 national-level federations**.
 - Cooperatives are present in **98% of Indian villages**.

VI. Strengthening PACS (Primary Agricultural Credit Societies)

(i) Model Bye-laws for PACS:

- Empower PACS to undertake over **25 diverse business activities**.
- Activities include:
 - Dairy, fisheries, warehousing
 - Renewable energy
 - Common Service Centres (CSCs), banking correspondence, etc.

(ii) PACS as CSCs:

- PACS digitized to offer **300+ e-services** (banking, Aadhaar, insurance, travel bookings, etc.).
- As of March 2025, **42,080 PACS** have become CSCs.

(iii) Public Policy Support (2021–2025):

- **Onboarding on GeM Portal:** Transparent procurement by 574 cooperatives from 67 lakh vendors.
- **PACS Computerization:** ₹2,516 crore initiative; 50,455 PACS onboarded with NABARD software.
- **Amendment of Multi-State Cooperative Societies**

Act: Enhances transparency, audits, governance, and professionalism.

- **National Organics Cooperative (NCOL):**
 - Aggregation, certification, branding and sale of organic products under ‘Bharat Organics’.
 - 5,184 PACS affiliated; 13 products launched.
- **National Cooperative Export Limited (NCEL):** Exports of ₹5,099 crore by 7,933 PACS.
- **National Seed Cooperative (BBSSL):** 17,425 PACS engaged in seed production, certification and branding.
- **Cooperative Database:** Enables real-time data management for policy design.
- **Universal Panchayat Coverage:** Cooperatives set up in **2.54 lakh Panchayats**. 12,957 new PACS registered.
- **World’s Largest Grain Storage Movement via PACS:**
 - Uses Agri-Infrastructure Fund, PMFME, etc.
 - 11 PACS godowns completed in 11 states.

(iv) New Functions of PACS:

New Functions of PACS	Status/Details
PMBJKs (Generic Drug Outlets)	4,523 PACS applied; 716 approved
PM-Kisan Samridhi Kendra	36,193 PACS act as fertilizer retail centers
Panchayat O&M Services	934 PACS engaged in local infrastructure and service management

VII. Cooperatives in Financial Inclusion

- **Bank Mitras:** Dairy/Fishery cooperatives operate Micro-ATMs; 8,322 units distributed.
- **Kisan Credit Cards:** 7,43,810 Rupay KCCs issued in Gujarat pilot.

VIII. Cooperatives and Atmanirbhar Bharat

- **Pulse & Maize Procurement:**
 - NCCF and NAFED handle procurement via e-samyukti and e-samridhi platforms.

- 12.6 lakh and 6.7 lakh farmers registered respectively.

IX. Promoting Cooperative FPOs and FFPOs

- **Formation by NCDC:**
 - 1,100 new FPOs/FFPOs created, including 730 cooperative FPOs and 70 FFPOs.
 - Aim to diversify rural incomes and markets.

X. PACS in Energy Sector

- **Retail Fuel and LPG Licenses:**
 - 286 PACS applied for dealerships.
- **Renewable Energy:**
 - Adoption of solar water pumps and photovoltaic systems by farmers.

XI. Consolidating Cooperative Credit Structure

- **Preservation of 3-tier System:**
 - Strengthening of DCCBs (middle-tier) and computerization of ARDBs.
 - Resolve inefficiencies in long-term cooperative financing.

XII. Cooperative Education and Training

- **Tribhuvan Sahkari University:**
 - Offers structured academic support for cooperative development.
 - Ensures skill-building and future-readiness.

XIII. Concluding Remarks

- **Sahkar se Samridhi – A National Vision:**
 - A call for people-led, inclusive, and community-driven economic transformation.
 - Cooperatives as vehicles for **Viksit Bharat @2047** and **\$5 trillion economy**.
 - Emphasis on revitalization of primary cooperatives and cohesive policy support.

ARTICLES FROM DOWN TO EARTH (JULY 2025)

UN WOMEN WARNS OF GLOBAL ROLLBACK ON GENDER EQUALITY

Context

- Marking its 15th anniversary, **UN Women** issued a stark warning that gender equality—far from being secured—is unraveling on a global scale. This alert came ahead of major anniversaries, including the 30th of the **Beijing Declaration** (1995) and the 25th of **UN Security Council Resolution 1325** (women, peace, and security).
- A survey conducted in March 2025 revealed that nearly **one in four countries** are witnessing a serious **backlash** against women's rights. Public concern about receding progress has surged—by **60%**—underscoring the perception that gender equality advancement is faltering.

Key Highlights

1. Alarming Surge in Violence and Exclusion

- In **2023**, around **85,000 women and girls** were intentionally killed, with many victims dying at the hands of intimate partners or family members.
- Over **600 million women and girls** live within **50 km of conflict zones**, a **50% increase** over the past decade.
- Despite evidence that peace processes achieve better outcomes when women are involved, **80% of peace talks (2020–2023)** excluded women entirely.

2. Economic Insecurity and Digital Disparities

- Women, though comprising roughly **one-third of the global agricultural workforce**, disproportionately suffer from food insecurity: nearly **48 million more women than men** go hungry.
- The **digital gender gap** persists: in **2024**, **277 million more men than women** had access to the internet.
- Left unaddressed, this gap could cost **low- and middle-income countries** up to **\$500 billion in lost income** over the next five years.

3. Educational and Health Inequities

- An estimated **119 million girls** remain out of school.
- In conflict-affected regions, maternal health remains dire: nearly **800 women die every day** from preventable pregnancy-related causes.

4. Care Burden and Financing Gaps

- Women carry an unequal burden: they perform **2.5 times more unpaid care work than men**, which hampers their access to paid employment.

- Only **4% of development aid** is directed toward programs where **gender equality is the primary objective**, revealing severe underinvestment.

5. A Forward-Looking, 15-Point Plan

UN Women proposed a strategic **15-point action plan** for the next 15 years, which includes:

- Legal reforms to dismantle discriminatory laws;
- Economic empowerment initiatives and efforts to close the gender pay gap;
- Expansion of care infrastructure (with potential creation of nearly **300 million care jobs** by 2035);
- Quotas and mechanisms to boost women's political representation;
- Gender-responsive governance and financing reforms;
- Climate-resilient and equalitarian interventions.

PRELIMS SPECIAL

Key Facts & Trends on Gender Equality in India

1. Global Performance Metrics

- According to the **Global Gender Gap Report 2025**, India ranks 131st out of 148 countries, with an overall gender parity score of 64.4%.
- In **Economic Participation & Opportunity**, India improved further to 40.7% parity, aided by a rise in estimated earned income (from 28.6% to 29.9%). However, labor force participation remains steady at 45.9%, matching its historical high.
- **Political Empowerment declined**: female representation in Parliament dropped from 14.7% to 13.8%, and ministerial roles decreased to 5.6%.

2. Social & Structural Progress

- **Education**: Female literacy reached 70.3% (vs. 84.7% for males) as of 2017. Elementary and secondary levels show promising enrollment parity.
- **Maternal Health**: The Maternal Mortality Rate dropped significantly from 174 (2013–15) to 97 (2018–20).
- **Financial Inclusion**:
 - 56% of PMJDY accounts are held by women.
 - Over 28 crore (280 million) women hold Jan Dhan accounts.
- **Labor Force Participation**: A notable rise from 23.3% (2017–18) to 41.7% (2023–24).
- **Leadership in Panchayati Raj (Local Governance)**: Thanks

to the 106th Constitutional Amendment and subsequent acts, 33% reservation for women has led to high representation in local governance and 1.4 million women leaders locally.

3. Persistent Gender Gaps

- **Female Labor Force:** Despite gains, participation remains low, especially in formal sectors. Many women work in informal, insecure, or agricultural roles.
- **Wage Inequality & Unpaid Work:**
 - Women earn only around 73% of male wages for similar work.
 - They spend 289 minutes/day on unpaid domestic work—nearly three times more than men (90 minutes/day). Unpaid care work is undervalued, estimated at 7.5% of GDP.
- **Political Underrepresentation:** Women make up only 13.8% of MPs and 5.6% of ministers. At the same time, 40% of girls age 15–18 are out of school, and literacy lags behind—65% for women vs. 82% for men.

Key Challenges Ahead

• Systemic Backlash and Rising Hostility

Nearly **25% of countries** have registered setbacks in women's rights. This includes legislative rollbacks and shrinking civic and digital spaces for women—often accelerated by conservative and patriarchal pushback.

• Funding Shortfalls

Critical programs—particularly in humanitarian contexts—are under peril. Women-led crisis organizations face closure due to major cuts in global aid, with **47%** halting essential services and **51%** suspending operations.

• Digital Divide and Online Risks

Digital inequalities are widening access and safety gaps: beyond infrastructural barriers, women face online harassment and digital surveillance without adequate protection.

• Climate-Fueled Violence

Climate shocks exacerbate gender-based violence—studies show that each **1 C rise** in temperature leads to a nearly **5% increase** in intimate partner violence; projections indicate climate change could expose **billions** more women to violence by the century's end.

Conclusion

- The UN Women report paints a disturbing picture: progress is not only stalling—it's reversing. With intensifying violence, systemic exclusion, economic precarity, and climate-driven threats, women's rights and gender equality are at a perilous crossroads.
- The proposed **15-point plan** offers a roadmap—but its success hinges on political will, robust investment, and integrated, cross-sector implementation. Without urgent action, December 2030 may arrive with little to show—unless we act decisively now.

INDIA'S NEW EPR FRAMEWORK FOR NON-FERROUS METALS

Context

- India is one of the world's largest consumers of non-ferrous metals such as aluminium, copper, and zinc, widely used in packaging, construction, transport, and electrical goods. However, a significant portion of these metals ends up in the waste stream, often handled by informal recyclers with minimal environmental safeguards.
- To address this, the Ministry of Environment, Forest and Climate Change (MoEFCC) has amended the **Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016**, introducing a dedicated **Extended Producer Responsibility (EPR)** framework for non-ferrous metal scrap. The move aligns with India's circular economy vision and global commitments on waste management, but experts note that while the regulatory structure is strong, the recycling targets remain modest.

Key Details of the Framework

- **Legal Backing & Implementation Timeline**
 - Added under a new **Chapter VIII** in the 2025 amendments to the Hazardous Waste Rules.
 - Comes into force from **April 1, 2026**.
- **Scope**
 - Covers **aluminium, copper, zinc and their alloys** across diverse products—beverage cans, foils, doors/windows, furniture, motors, utensils, toys, electrical components, and more.
- **Recycling Targets**
 - Producers must meet progressively rising recycling obligations:
 - ◆ **10% in 2026–27**, reaching **75% by 2032–33**.
- **Recycled Content Mandates**
 - From **FY 2028-29**, products must contain at least **5% recycled content**.
 - By **FY 2031-32**:
 - ◆ Aluminium – **10%**
 - ◆ Copper – **20%**
 - ◆ Zinc – **25%**
- **Digital Compliance via CPCB**
 - A centralised **CPCB portal** for:
 - ◆ Registration of producers, recyclers, refurbishers, collection agents, bulk consumers.
 - ◆ EPR return filing.
 - ◆ Issuance, trading, and tracking of EPR certificates.
- **Institutional Roles**
 - CPCB will coordinate implementation, conduct audits, manage certificate systems, and oversee inter-state enforcement.

Challenges Highlighted

- **Informal Sector Integration:** No clear roadmap for including informal recyclers, who dominate scrap processing in India.
- **Institutional Capacity:** CPCB's ability to handle nationwide digital monitoring and enforcement is uncertain.
- **Modest Targets:** Recycling content mandates are low compared to the scale of scrap generation.
- **Enforcement Gaps:** Risk of uneven implementation across states and inadequate infrastructure in smaller recycling units.

PRELIMS SPECIAL

Key Facts about Non-Ferrous Metals in India

Definition

- **Non-ferrous metals:** Metals that do not contain significant amounts of iron and are not magnetic.
- **Examples:** Aluminium, Copper, Zinc, Lead, Nickel, Tin.
- **Properties:** Corrosion resistance, lightweight (in many cases), high conductivity, malleability.

Major Non-Ferrous Metals & Reserves in India

1. Aluminium (Bauxite – ore)

- **Ore:** Bauxite (hydrated aluminium oxide) processed to alumina aluminium.
- **Major Reserves:**
 - Odisha (largest) – Panchpatmali, Kalahandi, Koraput
 - Gujarat – Kutch, Jamnagar
 - Jharkhand – Lohardaga
 - Maharashtra – Kolhapur
 - Chhattisgarh – Surguja, Bilaspur
- **India's Position:** 5th largest bauxite producer in the world.

2. Copper

- **Ores:** Chalcopyrite, Malachite, Cuprite.
- **Major Reserves:**
 - Madhya Pradesh – Malanjkhand (largest copper deposit in India)
 - Rajasthan – Khetri, Jhunjhunu
 - Jharkhand – Singhbhum belt

- **India's Status:** Limited reserves, dependent on imports for refined copper despite production from Hindustan Copper Ltd.

3. Zinc & Lead

- **Ore:** Sphalerite (ZnS), Galena (PbS).
- **Major Reserves:**
 - Rajasthan (over 80% reserves) – Zawar (Udaipur), Rajpura-Dariba, Rampura-Agucha (Bhilwara)
- **India's Position:** Among the top zinc producers globally, led by Hindustan Zinc Ltd.

4. Nickel

- **Ores:** Pentlandite, Nickeliferous laterite.
- **Major Reserves:**
 - Odisha – Sukinda chromite belt
 - Jharkhand – Jajpur, Singhbhum
 - Nagaland – small deposits
- **India's Status:** Small reserves, imports most of its nickel needs.

5. Tin

- **Ore:** Cassiterite.
- **Major Reserves:**
 - Chhattisgarh – Bastar, Dantewada (Chhattisgarh is the only tin ore producing state in the country).
- **India's Status:** Very limited production, relies on imports

Conclusion

- India's new EPR framework for non-ferrous metals is a welcome step toward structured recycling and resource efficiency. Its strengths lie in its clear legal mandate, digital compliance system, and progressive targets. However, the **modest recycled content requirements** and the absence of a clear strategy to integrate the **informal recycling sector** may limit its impact.
- For the framework to succeed, India must strengthen CPCB's capacity, invest in recycling infrastructure, promote formal–informal partnerships, and adopt more ambitious content mandates. Done right, it could set a benchmark for sustainable metal management and bolster India's transition to a truly circular economy.

ARTICLES FROM EPW (JULY 2025)

BUILDING BRIDGES THROUGH BILINGUAL TEXTBOOKS IN INDIA

Context: India's linguistic diversity, coupled with the prestige and perceived utility of English, creates a complex challenge in education policy. For millions of Indian students, especially those from economically weaker sections, the shift to English-medium schooling is not a smooth transition. This is not a case of bilingualism but diglossia – where two languages co-exist in distinct social and functional domains rather than as interchangeable equals.

Two Models of Learning English

English as a Second Language (ESL) route

- English is taught gradually as a separate subject and home/local language remains the medium for other subjects.
- They do seem to learn more transparently, as children do when a second language is just an academic subject, and they seem more adventurous, willing to try making up sentences in English and able to laugh at their mistakes.
- English is now a game and not a test of self-worth.
- An additional advantage is that other academic subjects make sense easily. Students do not have to learn English to access science and mathematics.

Diglossic route in English-medium schools

- The concept of diglossia, first proposed by Charles A. Ferguson (1959), refers to the co-existence of two languages or varieties in a community, each serving distinct roles.
- In India, English occupies the higher level – used for formal education, administration and aspiration – while local languages serve as the low variety for everyday communication.
- Most English-medium schools in India do not aim to efficiently move children towards competence in English.
- On the argument that “any child can learn any language”, they leave these children to find their own way, sometimes with after-school coaching classes from whichever teacher is willing to stay back and put in the time, but more often with just the system's blind faith that “they will pick it up” in the end.
- This takes the form of a long mute phase in primary school, where their gains in learning are not visible on a day-to-day basis.

- The flip side of this diglossia is that English ends up being not an addition to their repertoire but a replacement for the home language.
- That language does persist, but it gets stultified by the transition to English and is used in increasingly restricted contexts.

Advantages of Bilingual Textbooks

- **Definition:** A textbook presenting the same lesson and exercises in both English and the local language.
- **Improved comprehension:** Students can grasp concepts without waiting for years of English proficiency.
- **Teacher empowerment:** Teachers gain clarity on lesson content, avoiding rote reading without explanation.
- **Retention of local languages:** Prevents linguistic displacement while enhancing vocabulary through translation.
- **Faster language acquisition:** English words are absorbed incidentally through familiarity with subject matter.
- **Inclusivity:** supports EWS students, minority language speakers, and first-generation learners.

Bilingual education gives children—and their parents—access to English in the gentlest possible way, with full explanation and as much support of the local language as the children and their teachers want.

Way forward

- **Development of the translation industry:** Create employment for trained translators in multiple Indian languages to encourage standardisation of technical terms across languages.
- **Facilitate subject-specific comprehension**, especially in science and mathematics.
- **Pilot programme:** Implement bilingual textbooks in selected government schools and evaluate learning outcomes.
- **AI translation tools:** Develop machine learning models for instant textbook translation in all scheduled languages.
- **Translator training courses:** Introduce translation as a specialisation in language and education degrees.
- **Community involvement:** Involve local authors and educators to ensure cultural relevance in translations.
- **Phased integration:** Introduce bilingual material in foundation grades, gradually transitioning to more English content if desired.

Conclusions

Bilingual textbooks are not merely a language-learning tool – they represent a paradigm shift in how India approaches education in a multilingual society. Rather than enforcing a choice between English and local languages, they allow both to coexist, enriching comprehension and preserving cultural identity. The ultimate goal is not the replacement of one language by another but the democratisation of understanding – ensuring every child, regardless of background, can access knowledge on equal terms.

ENERGY TRANSITION POLITICS IN INDIA: LESSONS FROM SOLAR AND EV SECTORS

Context: Many people point to India's quick increase in solar power capacity and rising EV adoption as instances of a successful green transition in the Global South. But according to a recent study using a policy feedback approach, international technological advancements rather than domestic innovations have had a significant influence on this trajectory.

Background

- **Policy Feedback Approach:** After they are put into effect, policies have an impact on political alliances, economic systems, and the course of subsequent policy modifications.
- **Localisation:** Domestic innovation enables the simultaneous pursuit of industrial and environmental goals from the outset in technologically advanced nations.

India's Solar Transition

Phase 1: Establishing a Niche

- Prompted by China's hegemony in the production of inexpensive solar panels and Germany's drive towards renewable energy.
- Global price reductions and readily available technology directly benefited India's National Solar Mission.
- Initially, the emphasis was on quickly increasing solar capacity rather than establishing domestic production.

Phase 2: Consolidation of the Market

- **Import-dependent coalitions**—companies, developers, and affiliated actors who depend on low-cost imports—have gradually taken over the solar industry.
- These influential groups **fiercely opposed attempts to implement localisation measures, such as requirements for domestic content.**
- As a result, **India became reliant on foreign supply chains** due to its high deployment but weak domestic manufacturing base.

India's EV Transition

Phase 1: Establishing a Niche

- It was greatly influenced by worldwide developments in lithium-ion battery technology as well as China's two-wheeler EV market.
- Rather than creating indigenous innovations, the **early Indian market mainly imitated innovations from around the world.**

Phase 2: Localisation and Policy Push Initiatives

- High-performance EVs and increasing domestic manufacturing capacity became the policy's primary focus over time.
- Even though import-oriented actors continued to show resistance, the EV industry outperformed solar in terms of localisation.
- Critical supply chain elements, like advanced batteries, nevertheless, continued to rely significantly on imports, indicating only a partial success with localisation.

Key Findings from the Study

- While localisation occurs later and encounters more difficult political obstacles, adoption depends on imported innovations.
- **Coalitions Relying on Imports:** Early recipients of low-cost imports acquire vested interests. When localisation policies jeopardise their cost advantages, these groups fight back.
- Although EVs made more localisation progress than solar, both industries are still susceptible to supply chain disruptions from outside sources.

Way forward for India

- **Policy making:** Maintaining the balance between the green and industrial aspects of green industrial policy.
- **Investments:** The investments need to be increased and government needs to develop a strategic investment vision to leverage the booming sunrise industries, such as renewable.
- **Domestic innovation:** Reducing reliance on international technological cycles requires the development of domestic innovation ecosystems.
- **Supply Chain Security:** Develop alternative supply chains for critical inputs like polysilicon (solar) and advanced batteries (EVs) as well as invest in recycling and circular economy models for rare materials.
- **Regional Industrial Clusters:** Build manufacturing hubs with integrated supply chains by providing infrastructure, skilled workforce training, and logistical support to achieve economies of scale.

Conclusion

Balancing environmental goals with industrial self-reliance, fostering domestic innovation, and securing critical supply chains will be essential to ensure a resilient and sustainable energy future.

IMPORTANT DAYS IN JULY 2025

Date	Day	Significance/ Remark/ Details
1 July	National Doctor's Day (India)	National Doctor's Day is observed in India to honor the dedication and service of doctors. It commemorates the birth and death anniversary of Dr. Bidhan Chandra Roy.
4 July	Swami Vivekananda Death Anniversary	He is known as the Father of Modern Indian Nationalism and played a big role in taking Hinduism and Indian values to the world. His teachings continue to guide the youth and society even today.
6 July	World Rural Development Day	On July 6, the United Nations observed the first-ever World Rural Development Day , aiming to highlight the importance of improving life in rural areas. The goal is to bring global support to villages and small communities so they can access basic needs like food, education, healthcare, and internet.
7 July	Guru Purnima	Guru Purnima is a special day celebrated to thank and honor our teachers, known as gurus. Guru Purnima is celebrated by Hindus, Buddhists and Jains in many countries.
11 July	World Population Day	The world observes World Population Day to raise awareness about how population growth affects people and the planet. This year, in 2025, the focus is on young people and their right to plan their families in a world that is fair and full of hope.
15 July	World Youth Skills Day	The global community celebrates World Youth Skills Day to shine a light on the importance of skill development in helping youth succeed in life and work.
17 July	World Day for International Justice	World Day for International Justice reaffirms the global pledge to uphold international law, punish serious crimes, and ensure justice for victims across borders.
20 July	International Chess Day	World Chess Day is celebrated globally every year to commemorate the founding of the International Chess Federation (FIDE) in 1924.
22 July	National Flag Day (India)	India observes National Flag Day, also known as Tiranga Adoption Day , marking the day in 1947 when the Constituent Assembly of India formally adopted the Indian National Flag. National flag, symbolizes unity, patriotism, and the spirit of independent India.
24 July	Income Tax Day	Income Tax Day, celebrated annually to commemorates the historic introduction of income tax in India in 1860 by Sir James Wilson . The day stands as a tribute to the nation's fiscal maturity and digital progress.
26 July	Kargil Vijay Diwas (India)	This day marks the anniversary of India's victory in the 1999 Kargil War . It is a tribute to the bravery and sacrifice of Indian soldiers who fought to protect our nation.
	World Mangrove Day	Recognized officially by UNESCO in 2015, this day is an important environmental awareness day dedicated to the protection and conservation of mangrove ecosystems.
27 July	Dr. APJ Abdul Kalam's death anniversary	Marks the passing of Dr. APJ Abdul Kalam, India's Missile Man and former President, remembered for his contributions to science and education.

28 July	World Nature Conservation Day	Reminds us to preserve and protect our natural resources for current and future generations.
	World Hepatitis Day	Raises global awareness about hepatitis infection, prevention, and the importance of healthcare access.
29 July	International Tiger Day	Highlights the importance of tiger conservation and the urgency of preserving their natural habitats.

IMPORTANT EVENTS/ SUMMITS/ CONFERENCES IN JULY 2025

S. N.	Events/ Summits/ Conferences	Details
1.	24th Annual International Mental Health Conference	<ul style="list-style-type: none"> 24th AIMHC was held in Bangkok, Thailand, in July 2025. The conference emphasized compassion, inclusion, prevention, and equity in mental health care.
2.	ASEAN-India Cruise Dialogue	<ul style="list-style-type: none"> The first-ever ASEAN-India Cruise Dialogue was inaugurated in Chennai, a milestone in maritime cooperation between India and Southeast Asian countries. The event took place with over 30 delegates from all ten ASEAN nations and Timor Leste.
3.	National Conference on Responsible Business Conduct	<ul style="list-style-type: none"> 3rd edition of the NCRBC 2025 conference concluded on 2nd July under the theme "Integrating ESG (Environmental, Social, and Governance) for Viksit Bharat". The aim of the NCRBC is to foster multi-stakeholder dialogue, knowledge exchange, and capacity building on themes related to responsible business practices.
4.	INC-WMC Conference 2025	<ul style="list-style-type: none"> The INC-WMC (Indian National Committee of the World Mining Congress) conference in 2025 aims to promote sustainable and responsible mining practices, with a specific focus on best mine closure practices.
5.	17th BRICS Summit	<ul style="list-style-type: none"> The 17th BRICS Summit took place in Rio De Janeiro, Brazil on 6th and 7th July 2025. The theme this year was "Strengthening Global South Cooperation for a More Inclusive and Sustainable Governance." Summit welcomed Indonesia and 11 new partners, advancing climate action, economic cooperation, and Global South solidarity.
6.	11th Maize Summit	<ul style="list-style-type: none"> 11th India Maize Summit, organized by FICCI and IIMR in New Delhi, introduced a new plan to boost maize output, raise farmer incomes, and encourage sustainable farming. The summit also showcased state and national programs focused on maize.
7.	AI for Good Global Summit	<ul style="list-style-type: none"> Summit, organised by the International Telecommunication Union (ITU), was concluded on 11 July in Geneva. Summit is a leading United Nations event focused on leveraging artificial intelligence (AI) to advance the Sustainable Development Goals (SDGs).
8.	North-East Conclave	<ul style="list-style-type: none"> The aim of the North-East Conclave is to foster development and growth in the northeastern region of India. It was held on 11-12 July in Shillong.
9.	2nd BIMSTEC Ports Conclave	<ul style="list-style-type: none"> The 2nd BIMSTEC Ports Conclave, hosted by India in Visakhapatnam, aimed to strengthen maritime connectivity and promote sustainable development within the Bay of Bengal region.
10.	Maritime Financing Summit	<ul style="list-style-type: none"> India hosts Maritime Financing Summit to boost long-term investment in shipping sector. The event supports the government's Maritime Amrit Kaal Vision 2047, which aims to strengthen port infrastructure, boost shipbuilding, and position India as a global maritime hub.

AWARDS AND PRIZES IN JULY 2025

S. N.	Award	Awarded to	Details
1.	National Geospatial Practitioner Award 2025	Indian National Centre for Ocean Information Services (INCOIS), Hyderabad	<ul style="list-style-type: none"> Bestowed for exceptional application of open-source spatial technologies. Awarded by IIT Bombay as part of the Open Source GIS Day initiative
2.	Hem Bahadur Malla Award 2080	Former Chief Justice of Nepal, Kalyan Shrestha	<ul style="list-style-type: none"> Recognised for his contributions to institutional development and judicial leadership Founded in memory of the late Hem Bahadur Malla, who founded Salt Trading Corporation
3.	The Grand Collar of the National Order of the Southern Cross	Narendra Modi	<ul style="list-style-type: none"> Highest civilian honour of Brazil Given in recognition of advancing international collaboration and India-Brazil relations Since 2014, this is his 26th international honour
4.	2025 United Nations Population Award	Varsha Deshpande	<ul style="list-style-type: none"> Given in honour of her groundbreaking efforts to advance reproductive rights, gender equality, and the fight against gender-biased sex selection in India
5.	2025 PEN Pinter Prize	Leila Aboulela	<ul style="list-style-type: none"> Her influential writings on migration, faith, and women's experiences are honoured with this prize. Founded by English PEN in 2009, it recognises authors who demonstrate a strong dedication to truth and freedom of expression. given to authors from the Commonwealth, the UK, Ireland, or former Commonwealth nations
6.	World's Best Consumer Bank for 2025	State Bank of India (SBI).	<ul style="list-style-type: none"> The Award is based on Global Finance's internal research and analysis, supplemented by insights from corporate finance executives, analysts, and global bankers
7.	G P Birla Memorial Award	V. Narayanan, Chairman of ISRO	<ul style="list-style-type: none"> Honoured for his leadership in India's space exploration programs and his contributions to space science given by the Archaeological Astronomical and Scientific Institute of G P Birla.

TERMS IN NEWS: JULY 2025

S. N.	Term	Meaning & Details
1.	Janus-Faced	<ul style="list-style-type: none"> Referring to India's stance in international relations for being dual-sided, balancing between the West and Russia. Literary origin - From Roman god Janus, with two faces, symbolising duality
2.	Sisyphian	<ul style="list-style-type: none"> Describing the never-ending, futile struggle of disaster response without long-term reforms. Literary origin: From Greek myth of Sisyphus, condemned to roll a boulder endlessly uphill

3.	Currency Whiplash	<ul style="list-style-type: none"> • Sudden, violent swings or reversals in currency movement that jolt the economy or investors. • In July, 2025 Indian media used currency whiplash to describe rupee volatility as global capital flows outside country
4.	Bellwether economy	<ul style="list-style-type: none"> • A bellwether economy (or sector) is one whose performance serves as a reliable signal of the direction in which the larger economy is headed. • India's IT sector is sometimes called a bellwether sector because its performance indicates global demand for outsourcing and digital services

OBITUARIES IN JULY 2025

S. N.	Person	Important Information
1	Shekhar Dutt	<ul style="list-style-type: none"> • Shekhar Dutt was an Indian civil servant who served as governor of the Indian state of Chhattisgarh. Earlier, he had served on various bureaucratic posts including as an IAS officer and as Secretary in the Ministry of Defence of the Government of India.
2	Kunwar Anand Singh	<ul style="list-style-type: none"> • He was an Indian politician who was elected as a Member of Parliament to the 5th, 7th, 8th, and 9th Lok Sabha from the Gonda constituency. He was also a Member of Legislative Assembly and Agriculture Minister for the Government of Uttar Pradesh from 2012 to 2017.
3	Dilip Rasiklal Doshi	<ul style="list-style-type: none"> • Dilip Rasiklal Doshi was an Indian cricketer from Bengal though his origin goes back to Gujarat. He played in 33 Test matches and 15 One Day Internationals from 1979 to 1983.
4	Fauja Singh	<ul style="list-style-type: none"> • Fauja Singh was born in Beas Pind in Jalandhar, Punjab, then under British India, on April 1, 1911. Fauja Singh took to running after the death of his fifth son Kuldip in August 1994. He started jogging initially to overcome the grief. Later in life, he became a marathon runner, participating in marathons all over the world.
5	Ratan Thiyam	<ul style="list-style-type: none"> • Ratan Thiyam was an Indian playwright, theatre director and teacher from Manipur He was Padma Shri awardee and pioneer of the Theatre of Roots Movement.
6	T. N. Manoharan	<ul style="list-style-type: none"> • T. N. Manoharan was an Indian practicing chartered accountant who was president of the Institute of Chartered Accountants of India and chairman of Canara Bank.
7	Meghnad Desai	<ul style="list-style-type: none"> • Meghnad Jagdishchandra Desai, Baron Desai was an Indian-born British economist and Labour politician. Desai stood unsuccessfully for the position of Lord Speaker in the House of Lords in 2011. He was awarded the Padma Bhushan, the third highest civilian award in the Republic of India, in 2008.

JULY 2025 - DAILY MCQs FROM THE HINDU & INDIAN EXPRESS

DAILY MCQs PRACTICE

Q1. Which of the following statements are correct in respect of the National Quantum Mission (NQM):

1. It aims to develop intermediate-scale quantum computers with 50–1000 physical qubits.
2. It is implemented by the Department of Space in collaboration with private tech startups.
3. One of its objectives is to develop secure quantum communications between strategic agencies and critical infrastructure.

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

Q2. Consider the following with reference to the DRDO (Defence Research and Development Organisation):

1. DRDO functions under the Ministry of Home Affairs.
2. It is responsible for developing defence technologies in areas such as aeronautics, armaments, and missile systems.
3. DRDO was established in 1958 by merging three defence organizations.

How many of the above is/are not correct?

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

Q3. Which of the following statements about the King Cobra is NOT true?

- (a) It is the world's longest venomous snake.
- (b) It prefers humid, cool swamps, bamboo patches, and high-rainfall habitats.
- (c) It has been listed as Vulnerable on the IUCN Red List.
- (d) King cobras possess potent hemotoxic venom, capable of immobilizing or killing their prey

Q4. Consider the following statements:

Statement I: Minimum Support Price (MSP) hikes alone are not sufficient to ensure higher income for pulses and oilseed farmers.

Statement II: Direct income support offers farmers more stable returns and helps maintain market efficiency.

Which of the following options is true?

- (a) Both statements are correct, and Statement II is the correct explanation for Statement I.
- (b) Both statements are correct, but Statement II is NOT the correct explanation for Statement I.
- (c) Statement I is correct, but Statement II is incorrect.
- (d) Both statements are incorrect.

Q5. Which of the following statements are correct in respect of the Department for Promotion of Industry and Internal Trade's committee on Copyright and AI:

1. It aims to formulate guidelines on the use of copyrighted content for AI model training.
2. The committee operates under the Ministry of Electronics and Information Technology (MeitY).
3. It focuses on ensuring fair compensation to original content creators.

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

Q6. Consider the following with reference to the countries involved in Libya's post-2011 civil conflict through military or political support?

1. Turkey 2. United Arab Emirates
3. Russia 4. Qatar

How many of the above is/are correct?

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

Q7. Consider the following statements

1. Enrichment is the process of increasing the concentration of Uranium-235 (U235) in a sample of natural uranium which is primarily Uranium-238 (U238).

2. It is only U-238 that is fissile and is capable of sustaining a chain reaction.
3. An enrichment of 3-5 per cent is adequate for producing electricity in nuclear power stations.

How many of the above statements is/are correct?

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

Q8. Which of the following statements regarding Critical Tiger Habitat (CTH) is correct?

- (a) Critical Tiger Habitats are notified solely by the central government under the Forest Rights Act, 2006.
- (b) CTHs are core areas of tiger reserves meant to be kept inviolate for tiger conservation, without affecting the rights of Scheduled Tribes or other forest dwellers.
- (c) Human settlements and developmental activities are allowed freely within CTHs to promote eco-tourism.
- (d) Buffer areas are part of CTHs and are kept completely isolated from all human interaction.

Q9. Consider the following with reference to the novel Anandamath by Bankim Chandra Chattopadhyay:

1. The novel is set during the Sannyasi Rebellion in Bengal in the late 18th century.
2. It contains the song *Vande Mataram*, which was later adopted as India's national anthem.
3. The novel played a significant role in inspiring nationalist sentiments during the Indian freedom struggle.

How many of the above is/are correct?

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

Q10. Consider the following with reference to the bye-elections in India:

1. Bye-elections are conducted to fill vacancies in the Parliament or State Legislatures that arise between general elections.
2. The Election Commission of India is mandated to conduct bye-elections within six months of a seat falling vacant.
3. Bye-elections are not held if the remaining term of the vacant seat is less than one year.

How many of the above is/are correct?

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

Q11. Consider the following statements with reference to Pradhan Mantri Formalisation of Micro Food Processing Enterprises (PMFME) Scheme

1. It is a Centrally Sponsored Scheme by the Ministry of Food Processing Industries.
2. The scheme provides a credit-linked subsidy of 35% of the eligible project cost to individual micro-enterprises.
3. New units under the scheme can be supported for any product, regardless of location or district specialization.

How many of the above statements is/are incorrect?

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

Q12. Which of the following is NOT a common limitation of teleoperation systems?

- (a) Latency and communication delays affecting response time
- (b) Reduced sensory feedback to the operator
- (c) Complete independence from human input
- (d) Dependence on stable and high-bandwidth connectivity

Q13. Consider the following statements:

Statement 1: The Gulf states are now actively supporting diplomatic engagement between the U.S. and Iran to revive the nuclear deal.

Statement 2: The recent missile exchange in West Asia served as a wake-up call for Gulf nations, exposing their vulnerability to regional conflict.

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

Q14. Which of the following statements are correct in respect of Mediterranean Sea:

1. It is a partially enclosed sea connected to the Atlantic Ocean by the Strait of Gibraltar.
2. The Mediterranean Sea does not border any African country.
3. The sea is known for its mild, wet winters and hot, dry summers, typical of the Mediterranean climate.

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

Q15. Consider the following statements with reference to Jayaprakash Narayan

1. He was both a Gandhian and a socialist leader.
2. He participated in Civil Disobedience Movement and Quit India Movement.
3. He played a pivotal role in formation of the Janata Party government as the first non-congress government in India.

How many of the above statements is/are correct?

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

Q16. Consider the following statements:

Statement I: Appreciation of the Indian rupee against the US dollar helps in reducing inflation and lowering the cost of imports.

Statement II: A stronger rupee makes oil, gold, and other dollar-priced commodities cheaper in India.

Statement III: Appreciation of the rupee increases the earnings of Indian exporters by raising the dollar-to-rupee conversion value.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

Q17. Which of the following statements are correct in respect of respect of Shubhanshu Shukla's participation in the Axiom-4 mission:

1. It marks India's first crewed mission to the Moon.
2. It is the first time an Indian has travelled to orbital space since 1984.
3. It involves a collaboration between NASA, SpaceX, and a private firm Axiom Space.

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

Q18. Consider the following statements:

1. The post of Deputy Chief Minister is not mentioned in the Constitution of India.
2. A deputy Chief minister enjoys the same rank and privileges as a Cabinet Minister in the State Council of Ministers.

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

Q19. Consider the following statements about the PM JANMAN scheme:

1. The scheme is implemented by the Ministry of Tribal Affairs in collaboration with State governments and PVTG communities.
2. The scheme includes the establishment of Van Dhan Vikas Kendras and off-grid solar power systems for households.
3. In 1973, the Dhebar Commission established Primitive Tribal Groups (PTGs) as a distinct category.

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

Q20. Consider the following statements:

Statement I: A tribe is a group of families with a common name, shared dialect, and a common or claimed territory.

Statement II: After Africa, India has the second largest concentration of tribal population in the world.

Statement III: As per the 2011 Census, the tribal population constitutes about 8.9% of the total population in India.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

Q21. Consider the following statements:

Statement 1: China's Belt and Road Initiative (BRI) aims to create a vast global infrastructure and trade network to boost connectivity across Asia, Europe, and Africa.

Statement 2: The BRI has been welcomed uniformly across participating nations as it ensures debt-free financing and full local ownership of infrastructure.

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

- (a) Both statement 1 and Statement 2 are correct and statement 2 explains statement 1
- (b) Both statement 1 and Statement 2 are correct and statement 2 does not explain statement 1
- (c) Statement 1 is correct, but Statement 2 is incorrect
- (d) Statement 2 is correct, but Statement 1 is incorrect

Q22. Which of the following statements are not correct in respect of Kishenganga and Ratle Hydropower Projects:

1. The Kishenganga project is located on a tributary of the Jhelum River in Jammu and Kashmir.
2. The Ratle project is being developed on the Chenab River in collaboration with a German power company.
3. Pakistan cannot raise objections to both projects, citing violations of the Indus Waters Treaty.

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

Q23. The Vishaka Guidelines (1997), laid down by the Supreme Court of India in the Vishaka vs. State of Rajasthan case, eventually led to the enactment of which of the following legislations?

- (a) Equal Remuneration Act, 1976

- (b) Maternity Benefit Act, 1961

- (c) Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013
- (d) Protection of Women from Domestic Violence Act, 2005

Q24. Consider the following statements regarding Tirzepatide and Semaglutide:

1. Both drugs are polypeptides that assist in weight loss by increasing glucagon-like peptide-1 (GLP-1) levels, which influence appetite regulation through the brain and digestive tract.
2. They also help manage glucose levels, making them an effective treatment for diabetes.

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

Q25. Consider the following statements:

Statement 1: NEP 2020 introduces a National Mission on Foundational Literacy and Numeracy.

Statement 2: The Mission aims to ensure every child in India achieves basic reading and numeracy skills by Grade 10.

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

Q26. Which of the following statements are correct in respect of the Registrar General of India (RGI):

1. It functions under the Ministry of Statistics and Programme Implementation.
2. It is responsible for conducting the decennial Census in India.
3. It also manages the Civil Registration System related to births and deaths in India.

Select the answer using the code given below:

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

Q27. Consider the following statements with reference to Western Ghats

- I. It is one of the eight hotspots of biological diversity in the world.
- II. It is spread across six states i.e. Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala.
- III. The Godavari, the Cauvery and the Krishna originate from Western Ghats.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q28. Consider the following statements:

Statement I: Article 14 of the Constitution of India, 1950 affirms the fundamental right of "equality before the law" and "equal protection of law" to all persons.

Statement II: The "equality before law" is of England origin and the "equal protection of law" has been taken from the American Constitution.

Statement III: Article 14 bans class legislation but allows reasonable classification to achieve specific legislative goals.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement I, Statement II nor Statement III is correct

Q29. Consider the following with reference to Central Board of Film Certification (CBFC):

- 1. The CBFC is a statutory body under the Ministry of Information and Broadcasting.
- 2. Films in India cannot be publicly exhibited without certification from the CBFC.
- 3. The CBFC has the power to ban books and magazines that promote obscenity in cinema.
- 4. The final authority for appeals against CBFC decisions lies with the Film Certification Appellate Tribunal (FCAT).

How many of the above is/are correct?

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

Q30. Which of the following statements are correct in respect of Lord Jagannath:

- 1. The idol of Lord Jagannath is made of neem wood and is replaced every 12 to 19 years during the Nabakalebara ritual.
- 2. The Jagannath Temple at Puri is one of the Char Dham pilgrimage sites revered by Hindus.
- 3. The annual Rath Yatra of Lord Jagannath involves only two deities being taken out on chariots.

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

Q31. Consider the following statements

- I. Article 25 grants freedom of conscience and the right to freely practice, profess, and propagate any religion.
- II. Article 26 allows religious groups or individuals to establish and manage their own religious and charitable institutions.
- III. Article 27 permits religious instruction in educational institutions maintained by religious groups.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q32. Consider the following statements:

Statement I: Poverty line estimation in India has been based on the consumption expenditure and not on the income levels.

Statement II: The basket of goods and services necessary to satisfy basic human needs is the Poverty Line Basket (PLB).

Statement III: In the pre-independent era, Dadabhai Naoroji was among the first to estimate poverty in India linked to British rule.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I

- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement I, Statement II nor Statement III is correct

Q33. Consider the following statements:

Statement 1: Consumer non-durable goods are more volatile in IIP than capital goods.

Statement 2: High volatility in IIP data for capital goods reflects irregularities in investment cycles.

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

Q34. A sharp rise in the bond yields of government securities generally indicates:

- (a) Declining fiscal deficit
- (b) Improved investor confidence
- (c) Reduction in public debt levels
- (d) Higher expected inflation and interest rates

Q35. Consider the following statements

- I. Bandhavgarh Tiger Reserve is situated in the Satpura and Vindhya Mountain ranges in Uttar Pradesh.
- II. Dalma Wildlife Sanctuary is situated around the Dalma Hills on the Chottanagpur Plateau.
- III. The Maniyari River flows from the centre of Achanakmar Tiger reserve.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q36. Consider the following statements:

Statement I: INS Tamal is the stealth multi-role frigate belonging to the series of Krivak class frigates.

Statement II: It is the second ship of the Tushil Class, which are the upgraded versions of their predecessors, Talwar and Teg classes.

Statement III: It was built in Russia, and is the last warship to be inducted from a foreign source.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) All three statements are correct.

Q37. Consider the following statements with reference to BRICS, QUAD, and SAARC

- I. BRICS is an economic bloc consisting of Brazil, Russia, India, China, and South Africa focusing on global economic cooperation.
- II. QUAD is a strategic security dialogue involving India, the US, Japan, and Australia aimed primarily at balancing China's influence in the Indo-Pacific.
- III. SAARC is a regional organization of South Asian countries aiming to promote economic and regional integration among its members.
- IV. China is a member of both BRICS and SAARC.

Which of the statements given above are correct?

- (a) I and III only (b) I and II only
- (c) I, II and III only (d) I, II and IV only

Q38. Which of the following statements are correct in respect of the sessions of Parliament:

1. The President summons each House of Parliament from time to time under Article 85.
2. There must not be a gap of more than six months between two parliamentary sessions.
3. The Budget Session is the longest and usually has a recess between two parts.

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

Q39. Consider the following statements:

Statement 1: The Chief Minister is appointed by the Governor under Article 164 of the Constitution.

Statement 2: The Governor is constitutionally bound to appoint the leader of the majority party in the Legislative Assembly as the Chief Minister.

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

Q40. Consider the following statements with reference to Solicitor General of India (SGI)

- I. SGI is the second highest law officer in the country.
- II. SGI advise the Union Government and appear on behalf of the Union of India in the Supreme Court and High Courts.
- III. The Constitution of India does mention the offices of the Solicitor General of India and Additional Solicitors General of India.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q41. Consider the following statements:

Statement I: Generative AI is a form of artificial intelligence (AI) in which algorithms automatically produce content in the form of text, images, audio, and video.

Statement II: Generative AI is powered by foundation models that can multi-task and perform out-of-the-box tasks.

Statement III: Generative AI are fed with new data and they can independently learn, grow, develop, and adapt.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) All three statements are correct.

Q42. Consider the following statements with reference to Large Language Models (LLMs)

- I. LLM is a computer program that has been fed enough examples to be able to recognize and interpret human language.

II. LLMs use a type of machine learning called deep learning in order to understand how characters, words, and sentences function together.

III. LLMs typically rely on transformer models, such as the Generative Pre-trained Transformer (GPT).

IV. GPT-3.5 by OpenAI is one example of an open-source LLMs.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q43. Which of the following statements are correct in respect of Manusmriti:

- 1. It is one of the earliest and most authoritative Dharma āstra texts of Hinduism.
- 2. It outlines a rigid varna-based social order and prescribes duties for each caste.
- 3. It was composed during the Gupta period and reflects Buddhist influence.

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

Q44. Consider the following statements:

Statement 1: Indian secularism is based on the principle of equal respect for all religions rather than strict separation between religion and state.

Statement 2: The Indian state can engage with religion to ensure social reform and religious harmony, as seen in laws against untouchability or triple talaq.

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

Q45. Consider the following statements

- I. World Tuberculosis (TB) Day is observed every year on March 24th.
- II. The day marks the discovery of the TB-causing bacterium by Dr. Robert Koch in 1882.
- III. The 2025 theme is "Yes! We Can End TB: Commit, Invest, Deliver."

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
(c) I and III only (d) I, II and III

Q46. Consider the following statements with respect to Mizoram

Statement I: Mizoram has become India's first fully literate state under the Centre's ULLAS — New India Literacy Programme.

Statement II: It has the third-highest female workforce participation rate in the country.

Statement III: Its sex ratio at birth surpasses the national average.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I.
(b) Both Statement II and Statement III are correct but neither explains Statement I
(c) Only one of the Statements II and III is correct and that explains Statement I
(d) All three statements are correct

Q47. Which of the following statements are correct in respect of the term "Republic" as mentioned in the Preamble to the Constitution of India:

1. It implies that the head of the State is elected and not hereditary.
2. It ensures equality of all citizens without any discrimination based on birth.
3. It guarantees the independence of the judiciary from the executive.

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

Q48. Consider the following statements:

Statement 1: Directive Principles of State Policy contain elements inspired by the Irish Constitution.

Statement 2: The Directive Principles impose legal obligations on the State to follow specific policies.

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

Q49. Consider the following statements with reference to Urban bodies

- I. The 74th Amendment Act, 1992 provides for the constitution of 3 types of municipalities, depending upon the size and area in every state.
- II. The first municipal corporation in India was set up at Pune.
- III. Lord Ripon's Resolution of 1882 has been hailed as the 'Magna Carta' of local self-government.

Which of the statements given above are correct?

- (a) I and II only (b) I and III only
(c) I and III only (d) I, II and III

Q50. Consider the following statements with reference to Urban Challenge Fund (UCF)

Statement I: The 2025 Budget has set up a ₹1 lakh crore Urban Challenge Fund to help cities grow and develop.

Statement II: Fund is to implement the proposals for 'Cities as Growth Hubs', 'Creative Redevelopment of Cities' and 'Water & Sanitation'

Statement III: Statutory towns are those which have urban local bodies like municipal corporation, municipality or municipal committee.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
(b) Both Statement II and Statement III are correct but neither explains Statement I
(c) Only one of the Statements II and III is correct and that explains Statement I
(d) All three statements are correct.

Q51. Which of the following statements are correct in respect of Cooperatives in India:

1. Cooperatives are a State subject under the Constitution of India.
2. The 97th Constitutional Amendment gave constitutional status and protection to cooperative societies.
3. The Multi-State Cooperative Societies Act, 2002 governs cooperatives operating in more than one state.

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

Q52. Consider the following statements:

Statement 1: BRICS has proposed using local currencies in intra-group trade to reduce dependence on the US dollar.

Statement 2: At the BRICS 2023 Summit, member countries rejected discussion on establishing a common BRICS currency to challenge the dollar's dominance.

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 statements

- I. Asian elephants' ears are smaller compared to the large fan-shaped ears of the African species.
- II. An elephant trunk has up to 40,000 muscles.
- III. Only some male Asian elephants have tusks, while both male and female African elephants grow tusks.

Which of the statements given above are correct?

- (a) I and II only (b) I and III only
 (c) I and III only (d) I, II and III

Q54. Consider the following statements with reference to Extremely Backward Castes (EBCs)

Statement I: EBCs are a group of socially and economically disadvantaged castes in Bihar.

Statement II: They are identified as more marginalized than the Other Backward Classes (OBCs).

Statement III: The Mungeri Lal Commission talks about EBCs.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I

- (b) Both Statement II and Statement III are correct but neither explains Statement I
 (c) Only one of the Statements II and III is correct and that explains Statement I
 (d) All three statements are correct.

Q55. Which of the following statements are correct in respect of the Chin people:

1. They are one of the major ethnic groups in Myanmar, predominantly residing in the Chin State.
2. A significant population of Chin refugees have migrated to India's Mizoram state due to ethnic conflict in Myanmar.
3. The Chin people primarily follow Theravada Buddhism as their traditional religion.

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

Q56. Consider the following statements:

Statement 1: The National Rural Health Mission (NRHM) was launched to improve healthcare delivery in rural areas with a focus on accessible, affordable, and quality services.

Statement 2: NRHM aimed to reduce the digital divide in rural healthcare by promoting telemedicine and digital health cards in all villages.

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

Q57. Consider the following statements with reference to BRICS

- I. BRICS now accounts for 45% of global population and contributes over 35% to the world's GDP.
- II. It has 10 members in it.
- III. Indonesia and UAE joined in January 2025.

Which of the statements given above are correct?

- (a) I and II only (b) I and III only
 (c) I and III only (d) I, II and III

Q58. Consider the following matches

1. Samarium – Magnets and reactors
2. Gadolinium – MRI
3. Scandium – aerospace alloys
4. Yttrium – LED lights

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

- (a) One only (b) Two only
(c) Three only (d) All four

Q59. Which of the following statements are correct in respect of Manusmriti:

1. It is one of the earliest and most authoritative Dharma āstra texts of Hinduism.
2. It outlines a rigid varna-based social order and prescribes duties for each caste.
3. It was composed during the Gupta period and reflects Buddhist influence.

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

Q60. Consider the following statements:

Statement 1: Indian secularism is based on the principle of equal respect for all religions rather than strict separation between religion and state.

Statement 2: The Indian state can engage with religion to ensure social reform and religious harmony, as seen in laws against untouchability or triple talaq.

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 explains statement 1
(c) Statement 1 is correct, but Statement 2 is incorrect
(d) Statement 2 is correct, but Statement 1 is incorrect

Q61. Consider the following statements with respect to Mizoram

Statement I: Mizoram has become India’s first fully literate state under the Centre’s ULLAS — New India Literacy Programme.

Statement II: It has the third-highest female workforce participation rate in the country.

Statement III: Its sex ratio at birth surpasses the national average.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I.
(b) Both Statement II and Statement III are correct but neither explains Statement I
(c) Only one of the Statements II and III is correct and that explains Statement I
(d) All three statements are correct

Q62. Consider the following statements with reference to National Tuberculosis Elimination Programme (NTEP)

- I. NTEP aims to eliminate tuberculosis (TB) in India by 2030.
- II. It will be implemented under four strategic pillars: Detect, Treat, Prevent, and Build (DTPB).
- III. Tuberculosis is preventable and curable.
- IV. Drug-Resistant TB are Tuberculosis that doesn’t respond to any drug.

Which of the statements given above are incorrect?

- (a) I and III only (b) I and IV only
(c) I, II and III only (d) II, III and IV only

Q63. Consider the following with reference to the Constituent Assembly of India:

1. It was formed under the provisions of the Cabinet Mission Plan of 1946.
2. It was a fully elected body based on universal adult suffrage.
3. It functioned as the Provisional Parliament of India after independence.

How many of the above is/are correct?

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

Q64. Which Article of the Indian Constitution empowers the GST Council to make recommendations to the Union and States?

- (a) Article 246A (b) Article 269A
(c) Article 279A (d) Article 254A

Q65. Consider the following statements with reference to Commission for Air Quality Management (CAQM)

- I. It is a statutory body.
- II. It undertakes action for the prevention and control of Air pollution only in Delhi-NCR & Adjoining Areas.
- III. It can impose fines and penalties on polluters and violators of environmental regulations

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q66. Consider the following statements regarding bone health in astronauts during space missions:

- 1. Astronauts require increased calcium intake to counteract bone loss in microgravity.
- 2. High sodium intake is beneficial for maintaining bone density in space.
- 3. Excess vitamin D can contribute to calcium imbalance in astronauts.

Which of the statements given above is/are correct?

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

Q67. Which of the following statements are correct in respect of Cooperatives in India:

- 1. Cooperatives are a State subject under the Constitution of India.
- 2. The 97th Constitutional Amendment gave constitutional status and protection to cooperative societies.
- 3. The Multi-State Cooperative Societies Act, 2002 governs cooperatives operating in more than one state.

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

Q68. Consider the following statements:

Statement 1: BRICS has proposed using local currencies in intra-group trade to reduce dependence on the US dollar.

Statement 2: At the BRICS 2023 Summit, member countries rejected discussion on establishing a common BRICS currency to challenge the dollar's dominance.

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

Q69. Consider the following statements

- I. Asian elephants' ears are smaller compared to the large fan-shaped ears of the African species.
- II. An elephant trunk has up to 40,000 muscles.
- III. Only some male Asian elephants have tusks, while both male and female African elephants grow tusks.

Which of the statements given above are correct?

- (a) I and II only (b) I and III only
- (c) I and III only (d) I, II and III

Q70. Consider the following statements with reference to Extremely Backward Castes (EBCs)

Statement I: EBCs are a group of socially and economically disadvantaged castes in Bihar.

Statement II: They are identified as more marginalized than the Other Backward Classes (OBCs).

Statement III: The Mungeri Lal Commission talks about EBCs.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but neither explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) All three statements are correct.

Q71. Which of the following statements are correct in respect of the Chin people:

- 1. They are one of the major ethnic groups in Myanmar, predominantly residing in the Chin State.
- 2. A significant population of Chin refugees have migrated to India's Mizoram state due to ethnic conflict in Myanmar.

3. The Chin people primarily follow Theravāda Buddhism as their traditional religion.

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. Consider the following statements:

Statement 1: The National Rural Health Mission (NRHM) was launched to improve healthcare delivery in rural areas with a focus on accessible, affordable, and quality services.

Statement 2: NRHM aimed to reduce the digital divide in rural healthcare by promoting telemedicine and digital health cards in all villages.

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

Q73. Consider the following statements with reference to BRICS

- I. BRICS now accounts for 45% of global population and contributes over 35% to the world's GDP.
II. It has 10 members in it.
III. Indonesia and UAE joined in January 2025.

Which of the statements given above are correct?

- (a) I and II only (b) I and III only
(c) I and III only (d) I, II and III

Q74. Consider the following matches

1. Samarium – Magnets and reactors
2. Gadolinium – MRI
3. Scandium – aerospace alloys
4. Yttrium – LED lights

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

- (a) One only (b) Two only
(c) Three only (d) All four

Q75. Which of the following statements are correct in respect of Gaza Strip:

1. It is a narrow coastal strip located along the Mediterranean Sea.
2. It shares borders with both Israel and Egypt.
3. It is internationally recognized as part of Israel.

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

Q76. Consider the following statements:

Statement 1: The Anusandhan National Research Foundation (ANRF) aims to increase India's Gross Expenditure on R&D (GERD) to 2% of GDP.

Statement 2: The ANRF does not aim to catalyse research funding by fully encourage private-sector and philanthropic investment alongside public spending.

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

Q77. Consider the following matches

1. Nicobar megapode – Vulnerable
2. Leatherback sea turtle – Critically Endangered
3. Nicobar long-tailed macaque – Vulnerable
4. Nicobar treeshrew – Endangered

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

- (a) One only (b) Two only
(c) Three only (d) All four

Q78. Consider the following statements

Statement I : Phase Change Material (PCM) Fibers can absorb excess heat and release it when things cool down.

Statement II : PCM helps to regulate temperature and improve comfort in clothing.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Q79. Consider the following statements:

Statement 1: The P5 countries were granted permanent membership and veto power at the establishment of the United Nations in 1945.

Statement 2: The P5 countries are the largest contributors to the United Nations budget.

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

Q80. Consider the following with reference to the World Trade Organization (WTO):

1. The WTO was established in 1995 as a successor to GATT (General Agreement on Tariffs and Trade).
2. The WTO primarily deals with the regulation of trade in goods, services, and intellectual property.
3. The WTO has a dispute settlement mechanism that is binding on its member countries.

How many of the above is/are not correct?

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

Q81. Consider the following statements with respect to Fatty acids

- I. All oils mainly contain three types of fatty acids.
- II. MUFA and PUFA are the good fatty acids while saturated fatty acids (SFAs) are the bad fatty acids.
- III. Consumption of oils with high SFAs increases the levels of good cholesterol.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q82. Consider the following statements with reference to Saturated Fatty Acids (SFAs)

1. Coconut oil and ghee have the highest SFA content.
2. Mustard, safflower, and sunflower have the lowest SFA content.
3. The addition of hydrogen atoms into oils converts liquid oil to semi-solid, and increases their shelf-life.

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

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

Q83. Consider the following statements:

Statement 1: The United Nations Human Rights Council (UNHRC) is responsible for promoting and protecting human rights around the world.

Statement 2: The UNHRC is a subsidiary organ of the United Nations Security Council and can enforce binding decisions on member states.

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

Q84. Consider the following statements regarding Avgas and Jet Fuel:

- I. Avgas is used in piston-engine aircraft and contains small amounts of tetraethyl lead to boost octane rating.
- II. Jet fuel, such as Jet A and Jet A1, is kerosene-based and used in turbine-engine aircraft like jets and turboprops.
- III. Avgas has a lower freezing point than Jet A1, making it more suitable for long-haul, high-altitude flights.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q85. Consider the following statements with respect to Mount Kailash

1. Mount Kailash is located in the Tibet Autonomous Region, near the tri-junction of India, Tibet and Nepal.
2. Saltwater Rakshastal and freshwater Manasarovar are two lakes located to the south on the Tibetan plateau.
3. The Yarlung Tsangpo, the Indus, the Sutlej, and the Karnali originates from Mount Kailash.

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

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

Q86. Consider the following statements:

Statement I: Petrol is not suitable for use in aeroplanes, especially at high altitudes.

Statement II: Petrol has a higher freezing point than aviation fuel, which can cause engine issues in low-temperature conditions at high altitudes.

Statement III: Petrol has a lower flash point, making it more volatile and prone to accidental ignition during aircraft operations.

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

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
(b) Both Statement II and Statement III are correct but only one of them explains Statement I
(c) Only one of the Statements II and III is correct and that explains Statement I
(d) Neither Statement II nor Statement III is correct

Q87. Which of the following statements are correct in respect of Flue Gas Desulphurisation (FGD) systems:

1. FGD systems are primarily used to remove sulfur dioxide (SO₂) from the exhaust flue gases of fossil-fuel power plants.
2. India has mandated the installation of FGD systems in all thermal power plants by 2035 as part of emission control norms.
3. Wet FGD is one of the most common types and uses a limestone slurry to absorb SO₂.

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

Q88. Consider the following statements:

Statement 1: Carbon dioxide is the most abundant anthropogenic greenhouse gas responsible for global warming.

Statement 2: Carbon dioxide has the highest global warming potential (GWP) among all greenhouse gases.

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

Q89. Consider the following statements regarding Tuberculosis (TB):

1. Tuberculosis affects only the lungs and spreads exclusively through direct physical contact with an infected person.
2. Mycobacterium tuberculosis, the bacterium responsible for TB, can also infect organs such as bones, lymph nodes, and the nervous system.

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

Q90. Which of the following statements are correct in respect of North Atlantic Treaty Organization (NATO):

1. NATO was established in 1949 with the aim of providing collective security against the Soviet Union.
2. Article 5 of the NATO Charter states that an attack against one member is considered an attack against all.
3. Russia and China are permanent observer members of NATO.

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

Q91. Consider the following statements:

Statement 1: The World Trade Organization (WTO) was established to promote free and fair trade among nations and to resolve trade disputes.

Statement 2: The WTO replaced the General Agreement on Tariffs and Trade (GATT) in 1995 as a permanent institution governing international trade rules.

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

Q92. Consider the following statements with reference to Prime Minister Dhan-Dhaanya Krishi Yojana (PMDDKY)

- I. The scheme aims to develop 100 agricultural districts through the convergence of 36 schemes of 11 ministries.
- II. PMDDKY is designed on the lines of the Aspirational Districts Programme (ADP).
- III. PMDDKY districts will be monitored on a yearly basis and ranked based on their performance.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q93. Consider the following with reference to the Gaganyaan mission:

- 1. The Gaganyaan mission aims to send Indian astronauts to the Moon by 2030.
- 2. It is being implemented by ISRO with support from DRDO and Hindustan Aeronautics Limited (HAL).
- 3. Vyommitra, a female-looking humanoid robot, will be sent on an uncrewed mission prior to the crewed flight.

How many of the above is/are correct?

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

Q94. Which of the following statements are correct in respect of Black Sea:

- 1. The Black Sea is a landlocked sea bordered by six countries.
- 2. It connects to the Mediterranean Sea through the Bosphorus Strait and the Sea of Marmara.

- 3. The Danube, Dniester, and Nile rivers drain into the Black Sea.

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

Q95. Consider the following statements with respect to Gravitational waves

- 1. These waves are generated by all moving objects in the universe.
- 2. They were first predicted by Albert Einstein's theory of general relativity.
- 3. Scientists were able to detect these for the first time only recently in 2015.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q96. Consider the following statements

- 1. As per India's Agriculture Census 2015-16, around 86% of Indian farmers are small and marginal.
- 2. According to NITI Aayog's data, only 52% of India's gross sown area is irrigated.
- 3. The highest levels of farmer indebtedness were in Andhra Pradesh followed by Kerala, Punjab, Haryana and Telangana.

Which of the statements given above are correct?

- (a) I and II only (b) II and III only
- (c) I and III only (d) I, II and III

Q97. Which of the following statements are not correct in respect of the Directorate General of Civil Aviation (DGCA):

- 1. DGCA is the regulatory body for civil aviation safety in India.
- 2. It is responsible for accident investigation of aircraft in Indian territory.
- 3. DGCA functions under the Ministry of Defence.

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

Q98. Consider the following statements:

Statement 1: The Gini Coefficient is a widely used measure to assess income inequality in a society.

Statement 2: A Gini Coefficient of 1 indicates perfect equality, while a coefficient of 0 indicates perfect inequality.

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

Q99. Consider the following statements with respect to The Three teachings

1. The three teachings in Chinese philosophy are Confucianism, Taoism, and Buddhism.
2. Confucianism focuses on ethics, social order, and respect for family and tradition.
3. Taoism emphasizes harmony with nature, while Buddhism teaches the path to enlightenment and the end of suffering.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

Q100. Consider the following statements regarding the trends in non-performing assets (NPAs) in India's banking sector:

1. Industry NPAs have seen a notable decline in recent years.
2. The MSME sector has played a key role in the reduction of overall industry NPAs.
3. Improved recovery mechanisms and better credit discipline have contributed to this decline.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

Answer Key

Q1.	c	Q2.	a	Q3.	d	Q4.	a	Q5.	c	Q6.	d
Q7.	b	Q8.	b	Q9.	b	Q10.	c	Q11.	a	Q12.	c
Q13.	d	Q14.	c	Q15.	c	Q16.	b	Q17.	b	Q18.	c
Q19.	d	Q20.	b	Q21.	c	Q22.	b	Q23.	c	Q24.	c
Q25.	c	Q26.	b	Q27.	d	Q28.	a	Q29.	b	Q30.	a
Q31.	a	Q32.	b	Q33.	d	Q34.	d	Q35.	d	Q36.	d
Q37.	c	Q38.	d	Q39.	a	Q40.	a	Q41.	c	Q42.	c
Q43.	a	Q44.	a	Q45.	d	Q46.	d	Q47.	a	Q48.	c
Q49.	b	Q50.	d	Q51.	d	Q52.	c	Q53.	d	Q54.	a
Q55.	a	Q56.	c	Q57.	a	Q58.	d	Q59.	a	Q60.	a
Q61.	d	Q62.	b	Q63.	b	Q64.	c	Q65.	d	Q66.	b
Q67.	d	Q68.	c	Q69.	d	Q70.	a	Q71.	a	Q72.	c
Q73.	a	Q74.	d	Q75.	a	Q76.	c	Q77.	c	Q78.	a
Q79.	c	Q80.	d	Q81.	a	Q82.	c	Q83.	c	Q84.	a
Q85.	c	Q86.	a	Q87.	c	Q88.	c	Q89.	b	Q90.	a
Q91.	a	Q92.	a	Q93.	b	Q94.	a	Q95.	d	Q96.	d
Q97.	b	Q98.	c	Q99.	d	Q100.	d				



DAILY MAINS ANSWER WRITING PRACTICE

- Q1. Parliamentary committees provide the opportunity for collaboration between two chambers 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)
- Q2. What role does the Food Safety and Standards Authority of India (FSSAI) play in ensuring food safety in India? Discuss the different regulatory approaches for the organised and unorganised food sectors. (GS 2 & 3, 15 Marks, 250 Words)
- Q3. Regional disparities, socio-economic inequalities, and government policies collectively influence the patterns, experiences, and outcomes of internal migration in India. Comment. (GS 1, 15 Marks, 250 Words)
- Q4. What are the primary benefits and inherent risks of nuclear technology's global adoption? How do international regulations address the dual nature of nuclear technology? (GS 2 & 3, 15 Marks, 250 Words)
- Q5. Societal attitude shaped by patriarchy influence public reactions and media coverage of violence against women. Comment. Discuss the steps needed to address the patriarchal biases in society. (GS 1, 15 Marks, 250 Words)
- Q6. What were the key events that led to the proclamation of the National Emergency in 1975? Discuss the major constitutional implications during and post-1975 National Emergency. (GS 1 & 2, 15 Marks, 250 Words)
- Q7. Birsa Munda helped in shaping the tribal resistance and socio-political landscape in tribal regions during late 19th and early 20th centuries. Comment. (GS1, 15 Marks, 250 Words)
- Q8. What are the primary drivers and current landscape of India-Africa agricultural cooperation? (GS 2 & 3, 10 Marks, 150 Words)
- Q9. What challenges does India Meteorological Department (IMD) face in balancing accuracy and public expectations amid unpredictable climate events? (GS 1 & 3, 10 Marks, 150 Words)
- Q10. Digital Bharat Nidhi (DBN) seeks to address the challenges of underutilisation and increase telecom connectivity in rural areas as compared to Universal Service Obligation Fund (USOF). Comment. (GS 3, 15 Marks, 250 Words)
- Q11. What are the fundamental scientific principles underpinning solar energy conversion? How do practical applications of solar technology balance efficiency with cost and environmental factors? (GS 3, 15 Marks, 250 Words)
- Q12. Pottery represents one of the most important sources of our knowledge of Indian culture. Discuss the evolution of pottery in ancient India. (GS 1, 15 Marks, 250 Words)
- Q13. Discuss various education policies towards increasing the literacy rate in India. What key challenges hinder their implementation and outcomes? (GS 2, 15 Marks, 250 Words)
- Q14. What are the primary vulnerabilities and benefits of gig work for individuals? How does the gig economy challenge traditional employment models and worker protections? (GS 3, 15 Marks, 250 Words)
- Q15. India is emerging as the voice of Global South. Explain how the rise of Global South is bringing a change in the global order. (GS 2, 15 Marks, 250 Words)
- Q16. How did global and regional conflicts escalate into World War I? What were the immediate and long-term consequences of World War I? (GS 1, 15 Marks, 250 Words)
- Q17. What are biofuels? Discuss the significance of adopting biofuels in present time and the challenges associated with biofuels. (GS 3, 10 Marks, 150 words)
- Q18. Examine the effects of changes in the Arctic region on India. Discuss how can India safeguard its stakes in the Arctic region. (GS 2, 10 Marks, 150 Words)
- Q19. What are genetically modified (GM) crops? Discuss the benefits of the GM crops and the major concerns associated with the GM crops. (GS 3, 15 Marks, 250 Words)
- Q20. What is Sustainable Aviation Fuel (SAF), and how does it differ from conventional aviation fuel? What are the key environmental benefits of adopting SAF in the aviation sector? (GS 3, 15 Marks, 250 Words)

- Q21. Why does school dropout rate among girls remain a persisting concern in India? How does the National Education Policy (NEP) 2020 seek to address the issue? (GS 1 & 2, 15 Marks, 250 Words)
- Q22. Discuss the factors that determine cropping patterns in India. Highlight the changes happening in cropping patterns in the country. (GS3, 15 Marks, 250 Words)
- Q23. Discuss the significance of Africa in India's energy security. How can India support Africa's energy development? (GS 2 & 3, 10 Marks, 150 Words)
- Q24. Critically examine the environmental concerns associated with the adoption of Artificial Intelligence (AI) in present and in future. (GS 3, 10 Marks, 150 Words)

- Q25. India has emerged as the fastest-growing digital economy. Highlight the various forms of cybercrimes prevalent in India. Discuss the key factors behind the growing number of cybercrimes in India. (GS 3, 15 Marks, 250 Words)

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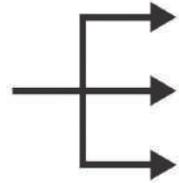
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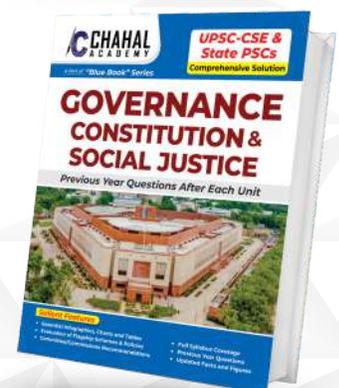
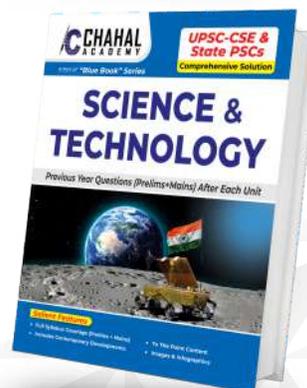
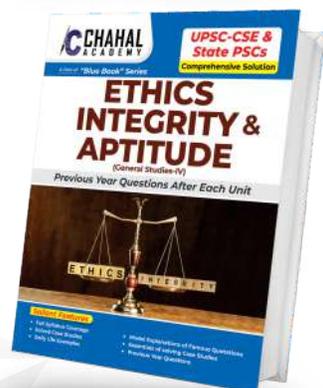
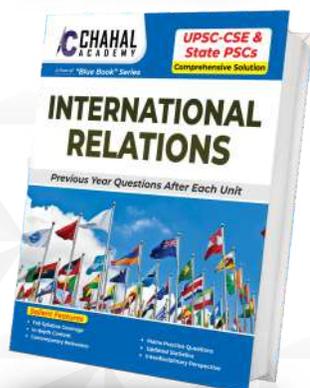
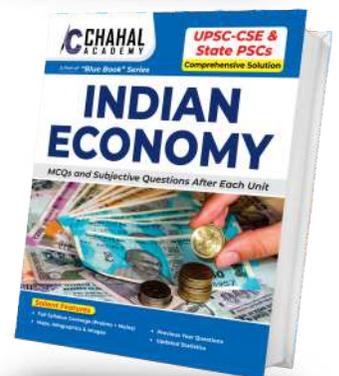
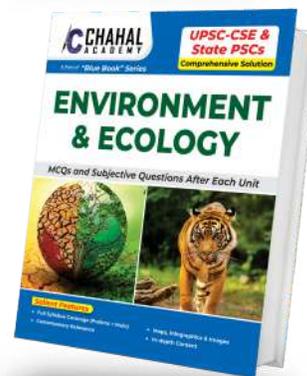
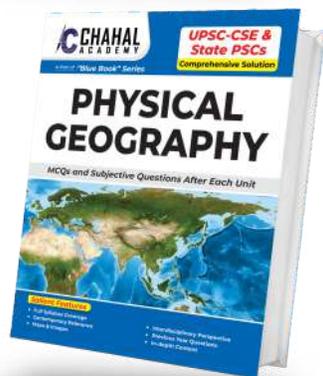
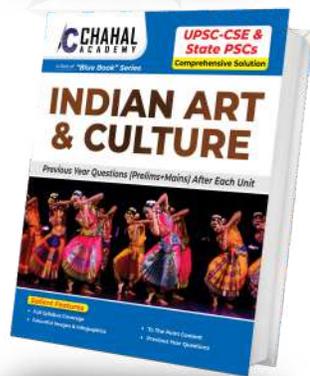
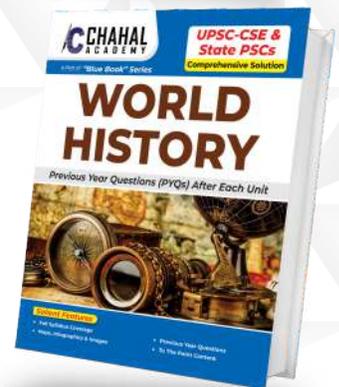
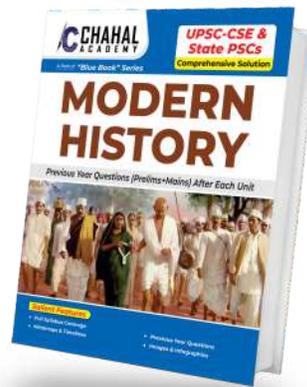
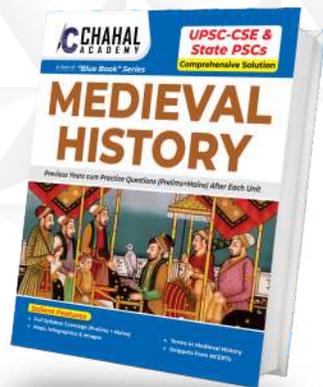
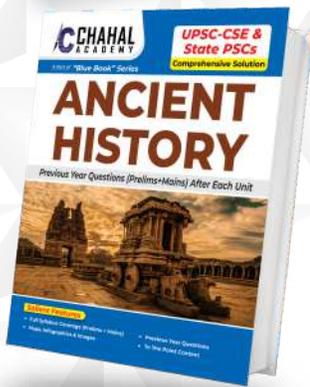
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