

CURRENT AFFAIRS

MONTHLY MAGAZINE

For Integrated Preparation of
CSE Prelims + Mains + Interview

SHANKARACHARYA TEMPLE

INTERNATIONAL
BIG CAT ALLIANCE

LAKHPATI
DIDI
YOJANA

PARLIAMENTARY
PRIVILEGES
CASE

INCLUDES

Practice
Questions
(Prelims* &
Mains) After
each Topic

YOJANA
(March 2024)
Theme: Art & Culture
in Digital Age

*MCQs on Prelims 2023 Pattern

- Fifth Mass Coral Bleaching Event
- Genome India Project
- Rhodamine B
- Carbon footprint of AI
- Advanced Medium Combat Aircraft (AMCA)
- INS Jatayu
- Shankaracharya Temple
- World Air Quality Report 2023

- Citizenship Amendment Act
- Parliamentary Privileges
- Criminalization of Politics
- WTO Ministerial Conference
- Maldives signs military pact with China
- Unemployment in India
- Lakhpatti Didi Yojana
- International Big Cat Alliance (IBCA)

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CITIZENSHIP AMENDMENT ACT

Why in News: The rules for implementation of the contentious Citizenship (Amendment) Act, 2019 (CAA) were notified.

Key details

- The Citizenship Act of 1955, **Section 6B**, governs the application procedure for citizenship under the CAA.
- To become an Indian citizen, **an applicant must provide documentation of their nationality, religion, date of entrance into India**, and proficiency in one of the Indian languages.
- Documents confirming birth or educational certificates, identification documents, licences, land records, or any other document **proving prior citizenship of the aforementioned nations are all acceptable forms of proof of country of origin** due to the relaxed requirements.

About the citizenship Act

The **Citizenship Act, 1955** is a law in India that deals with how people become citizens and how they can lose their citizenship. It was made by the Indian government on December 30, 1955. Over time, it has been changed several times through different laws called Citizenship (Amendment) Acts.

Citizenship (Amendment) Act, 2019

- **Background**
 - The Act was passed by the Parliament of India on **December 11, 2019**, and received presidential assent on December 12, 2019, becoming law.
 - It amends the Citizenship Act, 1955, to extend citizenship eligibility to **Hindu, Sikh, Buddhist, Jain, Parsi, and Christian** illegal migrants from **Afghanistan, Bangladesh, and Pakistan**, aiming to aid persecuted individuals from neighbouring countries.
- **Eligibility Criteria**
 - The legislation applies to those who sought refuge in India due to **religious persecution**.
 - It **relaxes the naturalisation period from 11 to 5 years** for applicants belonging to the specified religions. The **cut-off date for citizenship is December 31, 2014**, requiring applicants to have entered India on or before this date.
- **Citizenship Process**
 - Upon acquiring citizenship, individuals are considered citizens from their entry date into India, and all legal proceedings related to their illegal migration or citizenship status are terminated. It includes provisions for revoking **Overseas Citizen of India (OCI)** cards for violations of local laws.
- **Exceptions**
 - The Act does not apply to tribal areas of **Assam, Meghalaya, Mizoram, and Tripura** under the Sixth Schedule of the Constitution.
 - It also excludes areas under the **Inner Line Permit (ILP)** in certain regions.
 - Muslims are not included in the provisions of the Act, focusing solely on specified religious minorities.

Citizenship Amendment Act (CAA) and its criticisms

- **Differential Treatment Violating Article 14:** The CAA provides varying treatment to illegal migrants based on factors like country of origin, religion, entry date, and residence.
- **Improper Religious Classification:** The Act categorizes migrants based on religious persecution in **Pakistan, Afghanistan, and Bangladesh**. Critics argue that other religious minorities (e.g. Ahmadiyya Muslims, atheists) face persecution, raising concerns about exclusion.
- **Date of Entry Criteria:** Ambiguity surrounds the rationale for differential treatment based on the entry date (December 31, 2014) into India.
- **Impact on Northeast:** Exclusion of certain Northeast areas from the Act raises concerns about demographic changes and resource allocation. Conflicts with the **Assam Accord (1985)** emphasizing punishment and deportation of illegal immigrants.
- **Economic Implications:** Population surge due to the Act may strain resources and job opportunities, affecting indigenous communities.
- **Violation of Secular Governance:** Critics argue that the Act violates **Article 14** by discriminating based on religion. Raises concerns about adherence to secular principles in governance.

Arguments in support of the Citizenship Amendment Act (CAA)

- **Inclusivity Towards Muslims:** The CAA allows persecuted Muslim communities (like **Ahmediyas**

and Rohingyas) to seek Indian citizenship through naturalization with valid travel documents.

- **Protections for Other Minorities:** India adheres to the principle of non-refoulement, ensuring that persecuted individuals won't be pushed back to their countries of origin, regardless of religious affiliation.
- **Consideration of Individual Cases:** Shia Muslims facing persecution can seek refuge in India based on individual merits. **Balochi refugees are excluded** to avoid interference in Pakistan's internal affairs.
- **Equal Conditions for Citizenship:** Even minorities covered under the CAA must meet conditions specified in the **Citizenship Act of 1955** (e.g., good character, physical residence).
- **Legal Expert Opinions:** Legal expert Harish Salve asserts that the CAA is **not anti-Muslim** and doesn't interfere with neighboring countries' governance. Addressing specific issues (persecuted minorities) doesn't require solving all problems in every country.
- **Constitutional Sovereignty:** Citizenship and immigration laws are sovereign matters, with limited judicial intervention observed in court cases both in India and abroad.

Conclusion

The implementation of CAA's rules marks progress despite legal and political challenges. Its implications on indigenous populations and constitutional provisions remain contentious, reflecting India's ongoing struggle to balance humanitarian concerns with legal and diplomatic considerations.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the Citizenship Amendment Act, 2019:

1. It does not apply to Northeastern states where Inner Line Permit is required.
2. The tribal areas where autonomous councils were created under 6th schedule of Constitution are also exempted from the purview of this Act.
3. It is applicable to illegal migrants residing in India and does not apply to Indian citizens.

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. "Citizenship Amendment Act, 2019 may pose a threat to the principle of secularism as enshrined in the Indian Constitution." Do you agree? Justify your views [15 Marks] [250 words]

PARLIAMENTARY PRIVILEGES

Why in News: A 25-year-old majority opinion in the P V Narasimha Rao v State also referred to as the **JMM (Jharkhand Mukti Morcha)** bribery case was recently overturned by the Supreme Court (SC).

Key details

- The Supreme Court declared that parliamentary privileges do not shield bribery.
- According to the earlier decision, legislators who accepted bribes and then proceeded to vote or speak in the House as scheduled would not be charged for corruption.

History of Parliamentary Privileges

Parliamentary Privileges trace back to **16th-century England** and were later adopted in India through legislative acts like the **Indian Council Act of 1861** and the **Government of India Act of 1935**. These privileges have evolved over time, providing legal immunity and rights to legislators.

What are Parliamentary Privileges?

- Parliamentary Privileges are the **rights and immunity** that are enjoyed by a legislator and are essential for the effective and efficient discharge of their duties.
- They can arise from the customs or rules of the Parliament or be explicitly defined in the statutes. The members of the **state legislators also enjoy** similar privileges.
- These Parliamentary Privileges can be afforded to:
 - Persons who are **entitled to speak or take part** in the proceedings of any house of the Parliament.
 - Any **committee** of the Parliament.
 - These include the Attorney General of India and the Union Ministers.

Constitutional Provisions Relating to Parliamentary Privileges

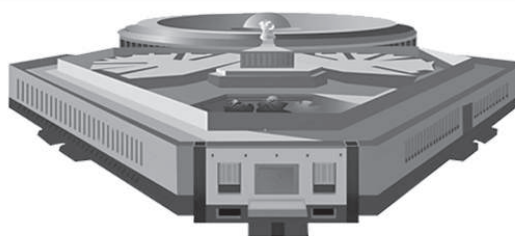
- **Article 105:** Grants privileges to Parliament and its members, including freedom of speech and immunity within Parliament.
- **Article 194:** Provides similar privileges to State Legislatures and their members, ensuring smooth functioning and immunity within the Legislature.
- The original Constitution, under **Article 105**, explicitly mentioned freedom of speech and the right to publish its proceedings.
- It provided that the **other privileges** would be the same as those of the **British House of Commons**, its members, and its committees at the commencement of the Constitution (i.e. **26th January 1950**) until the Parliament defined them.
- The **44th Constitutional Amendment Act of 1978**, replaced this and provided that other privileges of both the Houses of Parliament, its members, and its committee shall be the same as they were at the commencement of this Act (i.e. **20th June 1979**).

Classification of Parliamentary Privileges

- Privileges can be **collective or individual**. Collective privileges apply to Parliament as a whole, including the right to publish proceedings and conduct secret sittings. Individual privileges pertain to members, such as freedom of speech and immunity from arrest during sessions.

Need for codification of Parliamentary Privileges?

- This issue was also discussed in the Constituent Assembly, but the assembly decided against it.
- Benefits associated with the codification of privileges**
 - Will **bring transparency** to deciding the breach of privilege and remove any arbitrariness.
 - Allow freedom of speech to the citizens and **allow constructive criticism** on the working of the Parliament without fear of repercussions.
 - Open the door for **judicial review**.



- Some are against codification because**
 - Parliament will **lose some control** over their power to punish the breach of privilege.
 - The court's **intervention may increase** in the cases and dilute the **'separation of power'**.
 - It may impede the expansion of the ambit of privilege when the conditions necessitate it.

Importance of Parliamentary Privileges

- They ensure that MPs can freely express their views on any matter and represent the people with full conviction.
- It protects the members from unfair criticism and freedom to work without any intervention.
- It aids in upholding the respect and dignity the members deserve as lawmakers.

Issues with Parliamentary Privileges

- The breach of privileges is decided by the members themselves. This **violates the principle of natural justice**.
- What constitutes a breach is not codified anywhere, so the process seems **more arbitrary**.
- Could become a **tool for political vendetta** against the members. Members could be suspended or punished for raising some important matters.

Recent observations made by the Supreme Court

Sita Soren vs Union of India case

- In this case, the Supreme Court opined that **bribery cannot be protected** by Article 105 or Article 194 of the Constitution.
 - It cited a 'necessity test'. It means that a privilege without which a member of Parliament cannot function is said to be a necessary function.
 - Also, if bribery and corruption are allowed at the legislator level, it will **erode parliamentary democracy** in India.

Conclusion

The recent Supreme Court ruling overturning the blanket immunity for MPs and MLAs in bribery cases marks a **significant step towards promoting probity in public life**. It underscores the **necessity for clarity and accountability in the exercise of parliamentary privileges**. Moving forward, the onus is on Parliament to address these issues, potentially through codification, to uphold the integrity of legislative processes and democratic principles.

Expected Question for UPSC CSE

Prelims MCQ

- Q. Consider the following statements with reference to the Committee of Privileges:
- It is a statutory body established under the Parliamentary Legislation.

- The maximum number of members allowed for this body is fifteen.

Which of the statements given above is/are correct?

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

Answer: (b)

Descriptive Question

- Q. The 'Powers, Privileges and Immunities of Parliament and its Members' as envisaged in Article 105 of the Constitution leave room for a large number of un-codified and un-enumerated privileges to continue'. In the light of this statement, discuss the constitutional provisions related to parliamentary privileges in India. What is the need for codification of parliamentary privileges? [15 marks] [250 words]

CRIMINALIZATION OF POLITICS

Why in News: The Association for Democratic Reforms (ADR), an NGO, released data highlighting the concerning trend of criminalization of politics in India, along with other issues impacting electoral transparency and accountability.

Understanding Criminalization of Politics

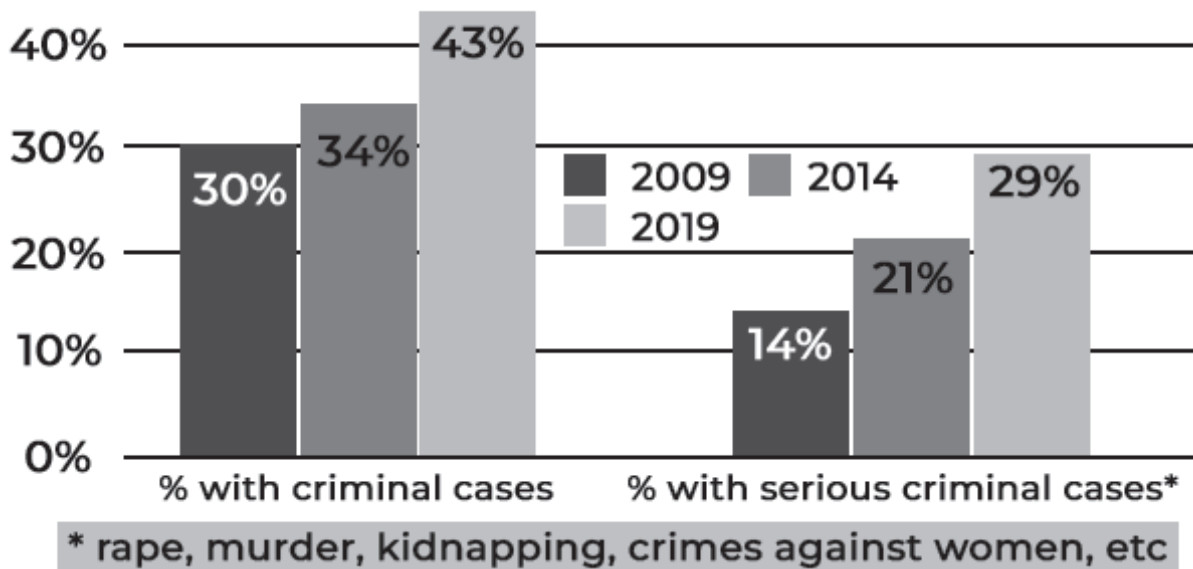
- Criminalization of politics refers to the **entry of individuals with criminal charges or backgrounds into the political system.**
- This phenomenon undermines democratic principles and raises concerns about fair elections, rule of law, and ethical governance.

Key Findings

- **Rajya Sabha Candidates:** A significant **36% of Rajya Sabha candidates** in the analyzed data declared criminal cases against themselves.
- **High Assets of Candidates:** The **average assets of candidates analyzed stood at a staggering ₹127.81 crore.**
- **Electoral Bonds Scheme:** The Supreme Court deemed the Electoral Bonds Scheme unconstitutional, highlighting its violation of voters' right to information.
- **Unrecognized Political Parties:** The number of registered **unrecognized political parties has doubled between 2010 and 2019.** This surge requires investigation into the motivations behind their formation and potential misuse of the system.

Under the Scanner

Close to **43%** winners of the 2019 Lok Sabha polls have criminal cases against them, according to the **Association for Democratic Reforms.**



Reasons for CoP

- **Lack of inner-party democracy:** Political parties often lack transparent selection processes, allowing individuals with criminal backgrounds to rise through the ranks.
- **Weak law enforcement and loopholes:** Ineffective implementation of existing laws and legal loopholes allow individuals with criminal backgrounds to enter politics.
- **Narrow self-interest of voters:** In some cases, voters prioritize factors like caste, religion, or local influence over a candidate's criminal record.
- **Nexus between criminals and politicians:** Politicians often seek support from criminal elements during elections, leading to a dangerous entwinement.
- **Vote-bank politics:** Parties may prioritize short-term political gains by choosing candidates based on caste, religion, or community, overlooking criminal records.
- **Political control over state machinery:** This control can be used to influence investigations and manipulate the judicial system, creating a shield for criminal politicians.
- **Lack of ethical values:** A decline in ethical values and political will to address the issue further aggravates the problem.

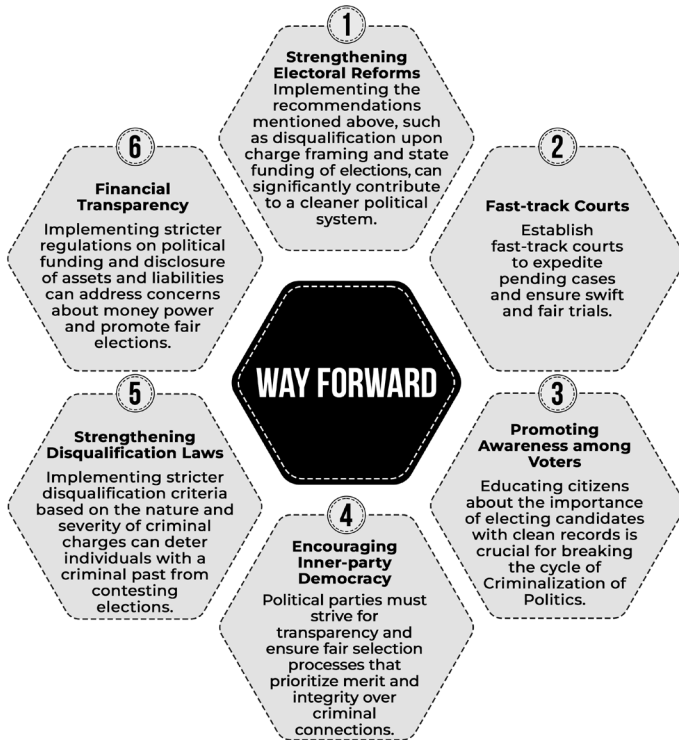


Measures Taken & Recommendations

- **Legislative:** Section 8(3) of the Representation of People Act, 1951 disqualifies convicted legislators for a period of six years after their release.
- **Judicial:** The Supreme Court has given a series of judgements:
 - **2002:** Mandated candidates to declare **criminal records, financial details, and educational qualifications.**
 - **2005:** Disqualified MPs/MLAs **convicted and sentenced to imprisonment for two years or more.**
 - **2014:** Accepted Law Commission recommendations and directed **fast-track trials** for criminal cases against MPs/MLAs within one year.
 - **2017:** The government established **12 special courts** for speedy trials of such cases.
 - **2021:** Directed political parties to publish **criminal case details and reasons for candidate selection** on their online platforms.
- **Vohra Committee (1993):** Warned about the increasing trend of individuals with criminal links entering politics and recommended measures to curb it.
- **State funding of elections:** Committees like **Dinesh Goswami (1990)** and **Indrajit Gupta (1998)** proposed state funding to reduce the influence of money and potentially criminal elements in politics.
- **Law Commission's 179th Report (1999):** Proposed amendments to the **Representation of People Act, 1951**, including:
 - Disqualification of individuals with criminal backgrounds for **five years or until acquittal.**
 - Mandatory disclosure of **pending criminal cases and assets** by candidates, including FIR/complaint details.

Latest guidelines by Election commission (2024)

- **C-VIGIL app** to report irregularities.
- **Candidates of criminal background** have to mandatorily publish at least three advertisements published in the newspapers.
- Political parties have to **furnish details of criminal background candidates** on the website and in the newspaper.



Conclusion

Criminalization of politics in India poses a grave threat to democratic institutions. The intertwining of money, muscle power, and criminal networks undermines fair elections and erodes public trust. Even though supreme court interventions and various acts such as Representation of People’s Act, 1951 more reforms are needed to safeguard the integrity of the electoral process and uphold democratic values.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. How many of the following are regarded as the main features of the “Rule of Law”?

1. Limitation of powers
2. Equality before law
3. People’s responsibility to the Government
4. Liberty and civil rights

Select the correct answer using the code given below:

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

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

Q2. Consider the following Acts:

1. The Commission of Sati (Prevention) Act, 1987
2. The Prevention of Corruption Act, 1988

3. The Prevention of Money Laundering Act, 2002
4. The Prevention of Terrorism Act, 2002

According to the Representation of the People Act, 1951, the conviction of an offence punishable under how many of the above acts specifically disqualifies a person for the membership of Parliament?

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

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

Descriptive Question

Q. Electoral reforms is one of the way parliamentary democracies can be strengthened. In this light, examine how money, coercion, and criminal networks contribute to the ongoing relationship between Indian politics and crime. [15 marks] [250 words]

ELECTION COMMISSION OF INDIA

Why in News: A few days before the Lok Sabha elections were announced, the Indian Election Commissioner unexpectedly stepped down from his position.

Election commission of India

- On **January 25, 1950**, the Election Commission was **founded in compliance with the Constitution**.
- The **independent constitutional authority in charge of overseeing Union and State election procedures in India** is the Election Commission of India.
- The organisation oversees **elections for the nation’s president and vice president as well as for the Lok Sabha, Rajya Sabha, State Legislative Assemblies, and State Legislative Councils**.
- The Election Commission, as outlined in **Part XV of the Constitution (Article 324 to 329)** and the Representation of People Act, is responsible for supervising, directing, and controlling elections.
- Elections to **state municipalities and panchayats are not associated with ECI**.

Members of the Election Commission

- At first, there was **just one Chief Election Commissioner on the commission**.
- There are **two Election Commissioners and the Chief Election Commissioner at present**.
- Two more Commissioners were **appointed for the first time on October 16, 1989**. However, their term was only **very brief, ending on January 1, 1990**.
- Two more **Election Commissioners were subsequently appointed on October 1, 1993**.
- Since then, a **multi-member Commission with majority vote decision-making authority has been in place**.

The Commissioner Appointment, Tenure, and Privileges

- In accordance with the **CEC and Other ECs (Appointment,**

Conditions of Service and Term of Office) Act, 2023, the President appoints Commissioners for Elections and CECs.

- Their term is set at six years, or until they are 65, whichever comes first.
- The CEC and ECs will have the same salary and working conditions as the Cabinet Secretary.
- It was the same as a Supreme Court judge’s remuneration under the 1991 Act.

Removal of CECs and ECs

- They have the option to leave at any moment, or they can be removed before their term is over.
- While ECs can only be removed on the CEC’s recommendation, CECs can only be removed from office following a procedure by Parliament similar to that of a SC judge.

Functions and Powers of the ECI

The Election Commission of India is responsible for:

- Delimiting constituency boundaries, managing voter registration, and conducting elections.
- The Election Commission is responsible for granting recognition to political parties, allocating them election symbols, and providing advisory oversight on disqualification of elected officials.
- The Commission issues a Model Code of Conduct in elections to prevent unfair practices and power abuse, and has advisory jurisdiction in post-election disqualification of Parliament and State Legislatures members.
- The Commission’s opinion on disqualification and disqualification of corrupt individuals in elections is binding on the President or Governor, and is also referred to the Supreme Court and High Courts.
- The Commission can disqualify a candidate for failing to submit election expenses within the prescribed time and manner, and can adjust the disqualification period.

Difference between RPA, 1950 and RPA, 1951

RPA, 1950	RPA, 1951
The RPA, 1950 specifies the actual distribution of seats in these houses, whereas articles 80, 170, and 171 set the maximum and minimum number of representatives in Parliament, state legislative assemblies, and legislative councils, respectively.	Governs the actual conduct of elections and by-elections.
Specifies the necessary qualifications for voters.	Provides administrative mechanism for holding elections.
Establishes the processes for creating electoral rolls and allocating seats.	Pertains to political party registration.
Procedures for delimiting constituencies.	Measures to stop election offenses such as corrupt practices.

Limitations to the power of ECI

- The Election Commissioners’ selection process lacked transparency. There is no set standard for moving up from the position of Election Commissioner to Chief

Election Commissioner.

- **Crisis of Credibility and Inaction:** Events such as the 2019 general election’s violation of the Model Code of Conduct sparked questions about the efficacy of the ECI and its alleged incapacity to take decisive action against influential political figures.
- **Lack of Autonomy in Appointments:** The current administration’s appointment of Election Commissioners may give rise to feelings of obligation or prejudice towards the appointing government, which could compromise the institution’s perceived independence.
- Even in cases of the most serious infractions, the Election Commission is authorized by Section 29A of the RPA to register political parties but not to de-register them.

Way Forward

- **Protections for ECs equivalent to CECs:** ECs and CECs must wield the same powers unless expressly granted by law, and they must follow comparable election and removal processes.
- **Financial independence from the Law Ministry is required.** The ECI, like the UPSC and CAG, wants its budget to be “charged” to the Consolidated Fund rather than going through a vote and approval process in Parliament.
- To strengthen the institution, the government should take into account the recommendations made in the reports of the Law Commission and the Administrative Reform Commission-II regarding the modifications that must be made to the appointment and removal of ECs.

Conclusion

Election Commission of India stands as a beacon of democracy, ensuring fair, transparent, and inclusive electoral processes across the nation. Through its tireless efforts, it upholds the fundamental principles of democracy, safeguarding the rights of citizens to participate freely in elections. Its commitment to integrity, impartiality, and innovation has been pivotal in shaping India’s electoral landscape, fostering trust in the democratic system.

Descriptive Question

Q. Bring out the constitutional protections in place to guarantee the impartiality and independence of the Indian Election Commission [10 marks] [150 words]

NEW LOKPAL CHAIRPERSON

Why in News: Justice A.M. Khanwilkar, former Supreme Court judge, was recently appointed as the Chairperson of the Lokpal, India’s anti-corruption ombudsman.

Key details

- The Lokpal had been operating without a regular chief for nearly ten months, with Justice Pradip Kumar Mohanty serving as the Acting Chairperson.

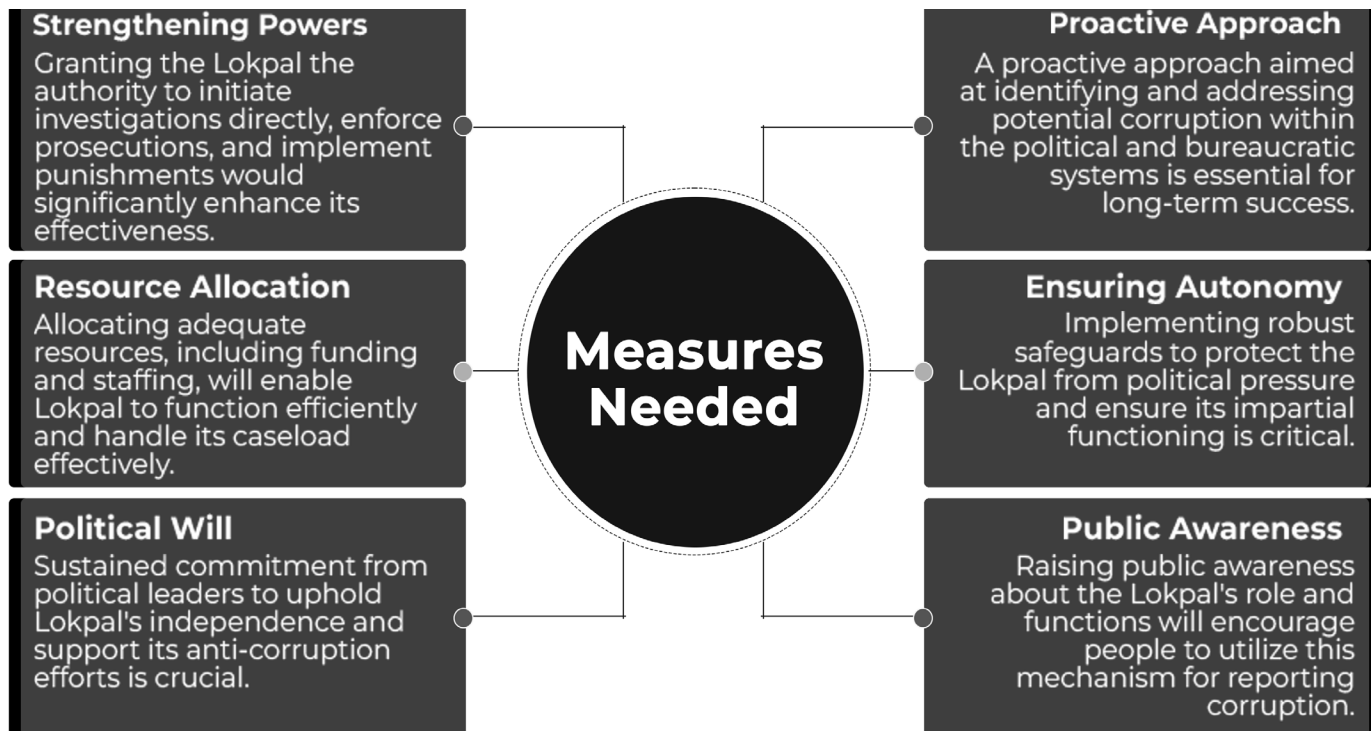
- This appointment strengthens the institution of Lokpal, allowing it to function at full capacity in investigating corruption allegations against public officials, including the Prime Minister (with certain exceptions).

Understanding the Lokpal

- **Background**
 - The term “Lokpal” translates to “protector of the people” and signifies an independent anti-corruption body.
 - Its counterpart at the state level is known as the Lokayukta.
- **Establishment** The Lokpal was established under the Lokpal and Lokayuktas Act, 2013, following a strong public demand for an effective anti-corruption mechanism. This demand was fueled by social activist Anna Hazare’s movement against corruption in 2011.
- **Aim and Mandate**
 - The Lokpal Act aims to eradicate corruption at all levels of governance in India.
 - It establishes a multi-member Lokpal at the national level and Lokayuktas in each state to investigate allegations of corruption against specific public officials.
- **Structure and Composition of the Lokpal**
 - **Statutory Body:** Established by the Lokpal Act, 2013.
 - **Multi-Member Body:** Comprises a chairperson and a maximum of eight members.
 - **Chairperson:** Selected from among former Chief Justices of India, former Supreme Court Judges, or eminent individuals with impeccable integrity and outstanding abilities.

- **Members:** Half are judicial members (former Supreme Court or High Court judges). **At least 50% must be from SC/ST/OBC communities**, minorities, and women. Non-judicial members are chosen for their integrity and outstanding abilities.
- **Selection Process**
 - The Chairperson and members are appointed by the President based on the recommendation of a selection committee consisting of:
 - ◆ Prime Minister (Chairperson)
 - ◆ Speaker of Lok Sabha
 - ◆ Leader of Opposition in Lok Sabha
 - ◆ Chief Justice of India (or nominee)
 - ◆ Eminent jurist
 - Term of office is five years or until age of 70
- **Jurisdiction of the Lokpal**
 - **Broad Coverage:** Includes the Prime Minister (excluding matters related to international relations, security, public order, atomic energy, and space), Ministers, MPs, and all categories of public servants within and outside India.
- **Powers over CBI**
 - Supervises and directs the Central Bureau of Investigation (CBI) in corruption-related investigations referred to by the Lokpal.
 - Ensures the investigating officer’s independence by preventing their transfer without Lokpal’s approval.

C H A L L E N G E S	<p>Limited Powers</p> <p>Critics point out that the Lokpal lacks crucial powers, like initiating investigations on its own (<i>sua moto</i>) and enforcing punishments.</p>	<p>Delays in Appointments</p> <p>Resource constraints and delays in appointments, as seen in the 21-month gap before the recent appointment, hampers Lokpal's operational efficiency.</p>
	<p>Jurisdictional Conflicts</p> <p>Conflicts can arise with existing vigilance agencies over who has the authority to investigate specific cases.</p>	<p>Political Influence</p> <p>The composition of the Lokpal's selection committee, which includes political representatives, raises concerns about potential political interference.</p>
	<p>Wide Criteria for Selection</p> <p>The broad criteria for choosing an "eminent jurist" or "person of integrity" leave room for manipulation, potentially leading to politically influenced appointments.</p>	<p>Whistleblower Concerns</p> <p>The Lokpal and Lokayukta Act, 2013, lacks concrete protection for whistleblowers. The possibility of facing inquiries if the accused is found innocent discourages individuals from reporting corruption.</p>
	<p>No Constitutional Backing</p> <p>The Lokpal lacks the constitutional strength of other institutions, potentially impacting its effectiveness.</p>	<p>Limited Complaint Window</p> <p>The Act restricts filing complaints to within seven years of the alleged offense, potentially allowing corrupt practices to go unchecked beyond this timeframe.</p>



Conclusion

The Lokpal holds immense significance in India’s fight against corruption. A well-equipped and independent Lokpal can significantly contribute to fostering a culture of transparency and accountability within the government.

MARATHA RESERVATION BILL 2024

Why in News: The Maharashtra Assembly unanimously passed the **Maharashtra State Reservation for Socially and Educationally Backward Classes Bill, 2024**, granting a 10% quota to the Maratha community in education and government jobs.

Key features of the Bill

- **10% Reservation:** The Bill provides a 10% reservation for the Maratha community in **both** education and government jobs, separate from the existing reservation categories.
- **Not from Existing OBC Quota:** This reservation will not be carved out from the existing **Other Backward Classes (OBC) quota**, addressing concerns of OBC communities losing their share.
- **Creamy Layer Exclusion:** Individuals categorized as “creamy layer” within the Maratha community will be ineligible for the reservation benefit.
- **Justification:** The Bill cites a report by the **Justice (retd.) Sunil B. Shukre Commission**, which claims to have surveyed over 1.5 crore families and concluded that “exceptional circumstances” warrant exceeding the 50% reservation limit set by the Supreme Court.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to Lokpal:

1. Lokpal cannot start investigations on his own initiative (suo moto) against any public servant.
2. The Lokpal is composed of 12 members, half of which shall be judicial members.
3. The Prime Minister is covered within the jurisdiction of the Lokpal.

How many of the above statements are correct?

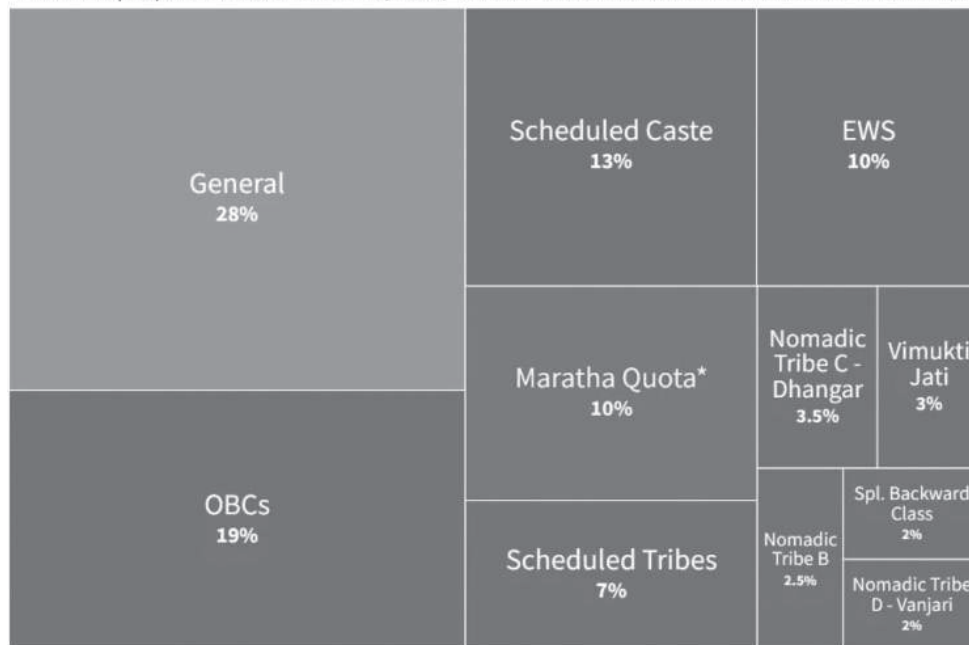
- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (b) (1 and 3 only)

Descriptive Question

Q. Effective Lokpal is cornerstone of good governance. Examine the challenges faced by the office of Lokpal in India and suggest some measures. [15 marks] [250 words]

With the proposed 10% Maratha Quota, the total reservation in the State will reach 72%



Challenges and Concerns

- **Legal Scrutiny:** The Bill faces the challenge of passing judicial scrutiny, as similar attempts in 2014 and 2018 were struck down by the Supreme Court.
- **Opposition from OBCs:** Some OBC groups have expressed concerns that the Maratha reservation might indirectly impact their share.
- **Legal Scrutiny:** Experts believe the Bill might face legal hurdles, similar to the previous attempt.
 - The Supreme Court’s judgment in **Jaishri Laxmanrao Patil v. Chief Minister, Maharashtra** established a 50% cap on reservations, with limited scope for exceeding it.
 - Additionally, the Court questioned the Marathas’ classification as SEBCs and highlighted the absence of compelling data to support their claim of social backwardness.

Important Judicial Pronouncement in context of reservation

- In the **Indra Sawhney** case of 1992, the judicial pronouncement upheld a 27% quota for **Other Backward Classes (OBCs)** and emphasized that **reservations should not exceed a 50% limit**. The judgment also **advocated for the elimination of the creamy layer** from backward classes and ruled against reservation in promotions.
- In the **Nagraj** case of 2006, the constitutional **validity of reservations for Scheduled Castes (SCs) and Scheduled Tribes (STs) was upheld, extending to promotions with three conditions**. These conditions included the requirement for quantifiable data on the backwardness of SCs and STs, consideration of inadequate representation, and an evaluation of overall administrative efficiency.

- In the **Janhit Abhiyan v Union of India** case in 2022, it was determined that reservations **based solely on economic criteria did not violate the Basic Structure of the Constitution**. Economically Weaker Sections (EWS) were recognized as a separate and distinct category. The exclusion of SC/ST and Socially and Educationally Backward Classes (SEBC) from this criterion was deemed a reasonable classification necessary to prevent double benefits.
- Additionally, the **judgment clarified that the concept of reservations cannot be dismissed in private institutions where education is imparted**. The 50% rule established in the 1992 **Indira Sawhney** judgment was noted not to be inflexible and inviolable; it specifically applies to SC/ST/SEBC/OBC categories and not to the general category.

Way Forward

- **Addressing Shortcomings:** The Maharashtra government needs to strengthen the Bill by providing robust data and evidence to support the Maratha community’s classification as SEBCs.
 - This could involve **conducting fresh socio-economic surveys and providing empirical data on factors like literacy rate, school enrollment, and occupational distribution** within the community.
- **Exploring Alternative Options:** While reservation remains a contentious issue, exploring alternative measures for uplifting disadvantaged communities is crucial.
 - This could involve focusing on improved access to **quality education, healthcare, and employment opportunities** through targeted interventions that do not rely solely on quota-based systems.

- **Collaborative Approach:** Effective dialogue and collaboration among various stakeholders including the government, political parties, and representatives from different communities, are essential to reach a consensus on addressing social and educational inequalities while ensuring adherence to the existing legal framework.

Conclusion

While the intention to **address the concerns of disadvantaged communities is commendable**, ensuring compliance with legal limitations and exploring alternative avenues for social upliftment remain crucial challenges that need to be addressed through a comprehensive and inclusive approach.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. The Maharashtra State Reservation Bill, 2024 provides the 10 percent reservation for socially and educationally backward classes in government jobs and education.
2. Article 15(4) of the Constitution empowers the State to make special provisions for the advancement of any socially and educationally backward class of citizens.

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

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

Answer: (d)

Descriptive Question

Q. The ability of the reservation policy to actually improve the most disadvantaged groups in society determines how effective it is. Discuss this statement in the context of the Maharashtra State Reservation Bill, 2024. [15 marks] [250 words]

THE MODEL CODE OF CONDUCT

Why in News: Model Code of Conduct comes into force for 2024 Lok Sabha elections as the Election Commission of India (ECI) announced the schedule for the **General Elections-2024**.

What is model code of conduct

- The Model Code of Conduct (MCC) is a set of **guidelines** issued by the Election Commission of India for the conduct of political parties and candidates during elections.

- It covers various aspects related to election behavior and ensures **fair and ethical practices**.
- These rules primarily **address speeches, meetings, processions, polling day, polling booths, observers, the ruling party, election manifestos, and general behavior**.

Historical evolution of MCC

- The Model Code of Conduct (MCC) **originated in Kerala** during the 1960 Assembly elections, later evolving under the Election Commission of India (ECI).
- Initially **titled 'Code of Conduct'**, it was circulated nationwide during the **1962 Lok Sabha elections**.
- To combat electoral corruption, the ECI revised it, particularly regulating the 'party in power' **from 1962 to 1991**. Renamed the MCC, its enforcement mechanisms were enhanced, yet legislative integration remained elusive.
- Post-1991, the ECI bolstered enforcement, empowered by Chief Election Commissioner **T.N. Seshan's interventions**.
- In 2013, the **Supreme Court mandated** the inclusion of manifesto guidelines, further solidifying MCC's role, notably evident in the 2014 general elections.

Key provisions of the MCC

- **Campaigning Restrictions:** It imposes strict restrictions on campaigning activities, prohibiting hate speech, personal attacks, and appeals to communal or religious sentiments. Additionally, the use of government resources for campaign purposes is strictly banned, and limitations are placed on the use of loudspeakers to maintain public tranquility.
- **Public meetings and processions:** It requires prior permission to prevent disruptions to traffic and public movement.
- **Media regulations:** Media regulations mandate equal access to state media, prohibit paid news, and ensure impartial news coverage, along with pre-certification of political advertisements.
- **Code for Political Parties:** Political parties are barred from distributing bribes, using government vehicles for campaigning, or engaging in violence or intimidation.
- **Candidate Conduct:** Candidates must disclose criminal records and financial assets, adhere to secular and democratic principles, and refrain from using government buildings for election propaganda.
- **Polling Day Regulations:** On polling day, campaigning near polling booths is prohibited, as is displaying party symbols, ensuring voters can cast their ballots freely.
- **Post-election Period:** Post-election, the MCC prohibits the use of government resources for celebrations, mandates timely submission of expenditure reports, and ensures a smooth transition of power without disruption.

Mechanism to enforce MCC

- Appoints election **observers** to oversee the conduct of elections.
- Empowers the Election Commission to take action against violations promptly.
- **Allows citizens to report** violations through dedicated helplines and complaint mechanisms.
- **Imposes penalties** such as fines or disqualification for violations of the MCC.
- **Empowers law enforcement agencies** to take action against offenders.
- Provides for **swift resolution** of complaints through election tribunals.

Some of the issues with MCC

- **Enforcement** mechanisms are often insufficient, leading to violations with minimal consequences. Political parties may find loopholes to circumvent its provisions, undermining its effectiveness.
- The MCC's **static nature** also struggles to keep pace with evolving electoral practices and technologies.
- Moreover, enforcement across **diverse regions with varying socio-political landscapes** poses a challenge, resulting in inconsistent implementation.
- Additionally, the MCC's **voluntary nature** means that compliance relies heavily on the goodwill of parties and candidates, leaving room for manipulation and abuse during elections. The MCC evolved as part of **the ECI's drive** to ensure free and fair elections and was the result of a consensus among major political parties.
- It has **no statutory backing**. Anybody breaching the MCC **can't be proceeded against under any clause of the Code**.
- The EC uses **moral sanction** or censure for its enforcement and efficacy of is the eminent question.

Way Forward

- **The Standing Committee on Personnel, Public Grievances, Law and Justice** advocated in 2013 for the legal enforcement of the Model Code of Conduct (MCC), proposing its integration into the **Representation of the People Act, 1951**.
- Though direct legal enforcement is lacking, certain MCC provisions can be upheld through existing **legal frameworks like the Indian Penal Code of 1860 and the Representation of the People Act of 1951**.
- **The Law Commission's 2015 recommendation** urged a ban on pre-election government-sponsored advertisements to ensure fairness.
- **Technology, including AI**, could bolster MCC enforcement on social media.
- Granting **the Election Commission more autonomy** akin to the Comptroller and Auditor General would fortify MCC implementation.

- **Public Awareness and Education:** There is need of conducting voter education programs to inform citizens about their rights and responsibilities.
- **Raising awareness** about the importance of ethical conduct in elections through media campaigns and outreach initiatives.
- **Making MCC legally binding** can enhance its seriousness and fear of law can help in check often found violations of MCC.

Conclusion

While the Model Code of Conduct (MCC) serves as a vital tool in promoting ethical conduct and fairness in elections, its effectiveness is hindered by enforcement challenges, loopholes, and its static nature. Strengthening enforcement mechanisms and adapting to evolving electoral dynamics are crucial for enhancing its efficacy in ensuring truly free and fair elections.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the "The Model Code of Conduct":

1. The Model Code of Conduct (MCC) originated in Nagaland during the 1960 Assembly elections.
2. Initially titled 'Code of Conduct,' it was circulated nationwide during the 1962 Lok Sabha elections.
3. Election commission imposes penalties such as fines or disqualification for violations of the MCC.

How many of the above statements are correct?

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

Answer: (b) (2 and 3 only)

Descriptive Question

Q. Discuss the historical evolution and key elements of model code of conduct. What are the issues associated with the Model Code of Conduct? [15 marks] [250 words]

DIGITAL CRIMINAL CASE MANAGEMENT SYSTEM (CCMS)

Why in News: The Ministry of Home Affairs (MHA) has taken a significant step towards modernizing the criminal justice system in India with the launch of a unique Digital Criminal Case Management System (CCMS) Platform.

Key details

- This initiative, **designed by the National Investigation Agency (NIA)**, promises to improve investigation efficiency, foster better coordination between agencies, and ultimately expedite justice delivery.
- The new CCMS platform addresses these concerns by offering a **user-friendly, web-based solution specifically tailored to the needs** of law enforcement agencies.

The Digital CCMS Platform

The CCMS platform offers several benefits for the NIA and State Police forces:

- **Enhanced Coordination in Complex Cases:** The system facilitates better collaboration between NIA personnel leading to more effective investigations.
- **Streamlined Data Management:** The platform allows for the organization, integration, and digitization of various investigation-related data, including case documents, extracted information, collected evidence, and chargesheets.
 - This eliminates data silos and ensures centralized access for authorized personnel.
- **Stronger Inter-Agency Cooperation:** CCMS fosters collaboration between central agencies like the NIA and state-level Anti-Terrorism Squads.
 - This enables a unified approach to combating terrorism and organized crime.
- **Standardization and Improved Conviction Rates:** The platform promotes standardized investigation procedures, leading to more robust case files and potentially higher conviction rates in sensitive and complex cases across the country.
- **Adaptability for New Laws:** The CCMS is designed to be adaptable to upcoming new criminal laws like the Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita, and Bharatiya Sakshya Sanhita.
 - This ensures that law enforcement agencies are well-equipped to handle cases under these new legal frameworks.

Complementary Launch of Sankalan App

- Along with the CCMS platform, the MHA has also launched the **Sankalan app, developed by the National Crime Records Bureau (NCRB)**.
- This mobile application serves as a comprehensive resource for navigating the complexities of the new criminal laws.
- It acts as a **bridge between the old and new legal systems**, providing crucial information for law enforcement personnel even in offline mode, ensuring accessibility in remote areas.

Way Forward

However, to ensure its success, several key considerations need to be addressed:

1. **State-Level Integration:** Encouraging smooth integration of the CCMS platform across all state police forces is crucial for nationwide implementation.
2. **Capacity Building:** Comprehensive training programs for law enforcement personnel on using the CCMS platform and the Sankalan app are necessary to ensure optimal utilization of these digital tools.
3. **Cybersecurity Measures:** Robust cybersecurity measures need to be implemented to safeguard sensitive case data stored within the CCMS platform.
4. **Data Privacy & Sharing Protocols:** Clear guidelines for data privacy and secure data sharing protocols between central and state agencies are essential.
5. **Continuous Upgradation:** The CCMS platform should be continuously upgraded to adapt to evolving criminal trends, incorporate new technologies.

Conclusion

By effectively addressing these considerations, the MHA can leverage the CCMS platform and the Sankalan app to usher in a new era of efficient investigation, improved inter-agency coordination, and ultimately, a more robust criminal justice system in India.

Expected Question for UPSC CSE

Prelims MCQ

- Q. Consider the following statements with reference to the "Digital Criminal Case Management System"
1. It is launched under the provisions of the Bharatiya Nyaya Sanhita Act, 2023.
 2. It is designed by the National Investigation Agency (NIA).
 3. It is primarily developed to be used by personnels of the law enforcement agencies.

How many of the above statements are correct?

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

Answer: (b) (2) and 3 only

Descriptive Question

- Q. Discuss the importance of digitalization of crime records for the effective law and order. What are some of the impediments in its implementations? State some of the government initiatives. [15 marks] [250 words]

SMART GRAM PANCHAYAT

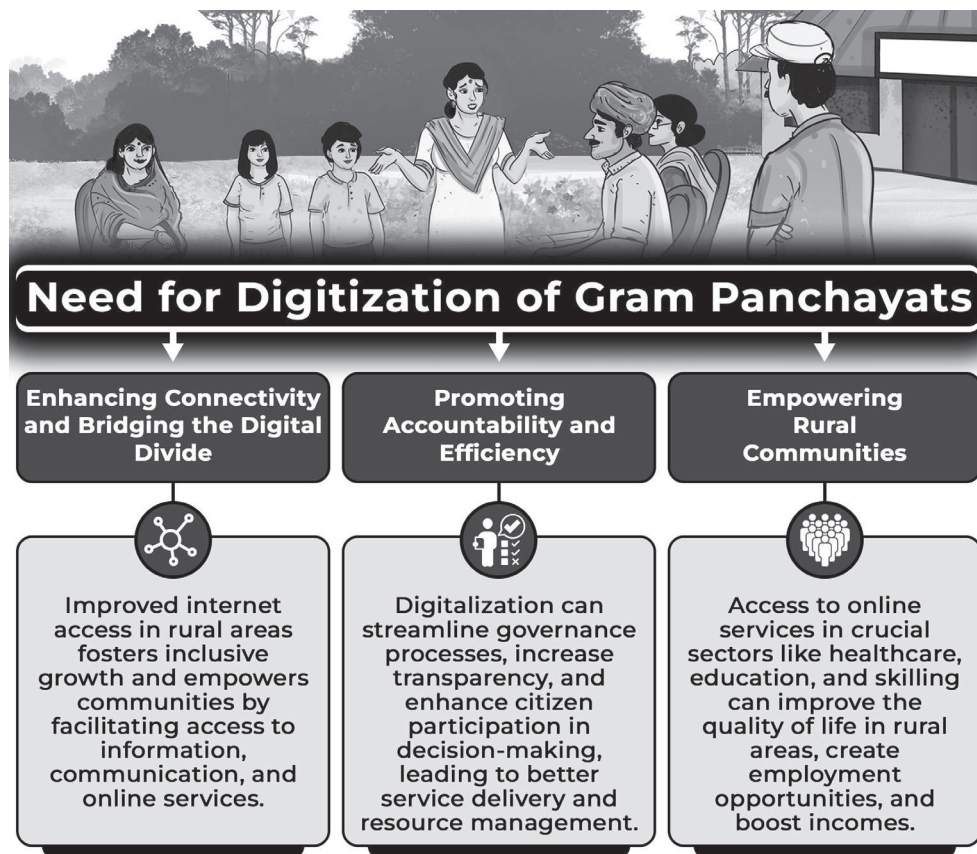
Why in News: The Ministry of Panchayati Raj (MoPR) launched the “Smart Gram Panchayat” pilot project in Begusarai district, Bihar, aiming to revolutionize rural connectivity through the Prime Minister’s Wi-Fi Access Network Interface (PM-WANI) scheme. This initiative is funded through the Rashtriya Gram Swaraj Abhiyan (RGSA), focusing on rural development.

Key details



Rashtriya Gram Swaraj Abhiyan (RGSA)

- The RGSA, initiated in 2018 and revamped later, aims to enhance the governance capabilities of Panchayats.
- It focuses on achieving Sustainable Development Goals (SDGs) at the grassroots level.
- Under the scheme, Panchayat representatives receive training to effectively fulfill their roles. This includes orientation and refresher training within specific timeframes.
- The funding for RGSA is shared between the Central and State governments. It emphasizes strengthening Panchayat-SHG convergence, promoting digital literacy, and utilizing emerging technologies for capacity building.



PM-WANI Scheme and its Role in the Project

The PM-WANI scheme, launched in 2020, aims to establish a robust public Wi-Fi infrastructure, particularly in rural areas. It comprises four key elements

- **Public Data Office (PDO):** Establishes and operates Wi-Fi hotspots, providing internet access to subscribers.
- **Public Data Office Aggregator (PDOA):** Aggregates services for PDOs, including authorization and accounting.
- **App Provider:** Develops an app for user registration and discovery of Wi-Fi hotspots.
- **Central Registry:** Maintains a database of app providers, PDOAs, and PDOs.

The Begusarai pilot project leverages PM-WANI to extend

Wi-Fi connectivity across all gram panchayats in the district. This initiative has the potential to

- **Enhance access to online government services:** Citizens can access various government services like ration card applications, land record verification, and grievance redressal online.
- **Improve healthcare delivery:** Telemedicine consultations, online appointment booking, and access to health information can be facilitated.
- **Empowerment through education:** Online learning platforms, access to educational resources, and digital literacy programs can be promoted.
- **Boost rural entrepreneurship:** Online marketplaces, digital marketing tools, and access to financial services can empower small and medium businesses.

CHAHAL's PERSPECTIVE Smart Gram Panchayat

Challenges and Concerns

While the project holds immense potential, certain challenges need to be addressed:

- Security Threats**
 Extensive public Wi-Fi networks are vulnerable to cyberattacks and data breaches. Robust cybersecurity measures and user education are essential.
- Affordability and Pricing**
 Encouraging private sector participation in PM-WANI might lead to increased internet costs for users. Sustainable pricing models and government subsidies need consideration.
- Digital Literacy and Infrastructure**
 Lack of digital literacy and inadequate infrastructure, including electricity and devices, can hinder project adoption. Capacity building initiatives and infrastructure development are crucial.
- Content Accessibility**
 Ensuring access to localized content in local languages is essential for wider participation and inclusivity.



Measures for Successful Implementation

To ensure the project's success, the following measures are recommended:

- Community Engagement and Capacity Building**
 Extensive awareness campaigns and training programs are needed to equip communities with the necessary digital skills and knowledge to utilize the available services effectively.
- Public-Private Partnerships**
 Collaborative efforts between government agencies, private companies, and civil society organizations can leverage expertise, resources, and ensure wider reach.
- Focus on Local Content and Language**
 Development of localized content in regional languages is crucial for promoting inclusivity and ensuring wider participation from diverse communities.
- Robust Cybersecurity Framework**
 Implementing robust cybersecurity measures, including data encryption, user authentication, and regular security audits, is essential to safeguard against cyber threats.
- Sustainable Pricing Models**
 Exploring government subsidies, public-private partnerships, and innovative pricing models can ensure affordability and wider accessibility of internet services.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the 'Smart Gram Panchayat: Revolution towards Digitization of Gram Panchayat' initiative:

1. It aims to provide rural internet connectivity through the Prime Minister's Wi-Fi Access Network Interface (PM-WANI) scheme.
2. It is funded through the Rashtriya Gram Swaraj Abhiyan (RGSA).

Which of the statements given above is/are correct?

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

Answer: (c)

Descriptive Question

Q. Discuss the need for digitization of Gram panchayats. What are the challenges in this regard? [10 Marks] [150 words]

CINEMATOGRAPH (CERTIFICATION) RULES, 2024

Why in News: Pursuant to the Cinematograph (Amendment) Act, 2023, **Ministry of Information and Broadcasting**, Government of India has notified the Cinematograph (Certification) Rules, 2024, in supersession of the Cinematograph (Certification) Rules, 1983.

Key details

- India's film industry is a major player on the world stage, producing over **3,000 films a year in more than 40 languages**.
- The Indian government recognizes the film industry's potential for promoting **Indian culture, society, and values around the world**.

Highlights of the Rule

- **Streamlined Online Certification:** The Rules embrace online processes for film certification, enhancing transparency, efficiency, and **ease of doing business**. Processing timelines are reduced, and digital processes eliminate unnecessary delays.
- **Accessibility and Age-Based Ratings:** Films are required to incorporate accessibility features for disabled individuals. **Age-based sub-categories (UA 7+, 13+, 16+)** are introduced to guide parents while maintaining freedom of expression.

- **Gender Representation:** The **Central Board of Film Certification (CBFC)** and its advisory panels will have greater female representation, aiming for **at least one-third and ideally half** of all members being women.
- **Priority Screening and Perpetual Validity:** A system for priority screening facilitates expedited certification in urgent cases. Film certificates issued by the CBFC now have perpetual validity.
- **Television Broadcast Recertification:** Films intended for television broadcast require **recertification after editing**, and only films categorized for unrestricted public exhibition can be televised.

Central Board of Film Certification (CBFC)

- A government body regulating film exhibition under the Ministry of Information and Broadcasting as per the Cinematograph Act 1952.
- Grants certification to films after reviewing content against legal guidelines.
- **Headquartered in Mumbai** with regional offices across India.

Indian Film Industry

- A significant market valued at over 172 billion rupees in 2022.
- Navigating the impact of the pandemic and the rise of video streaming platforms.
- Video streaming services (OTT) gained popularity during the pandemic, attracting over 400 million users.
- The industry employs over 4 million people, showcasing substantial growth.

Way Forward

In recognition of evolving film technology and audience needs, the government has introduced completely revised Cinematograph (Certification) Rules, 2024. These modernized regulations complement the recent amendment to the Cinematograph Act, promoting a simpler, more transparent, and inclusive film certification process for the benefit of the Indian film industry.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the regulation of Indian cinema

1. Cinematograph (Certification) Rules, 2024 introduced age-based sub-categories (UA 7+, 13+, 16+) to guide parents.
2. Central Board of Film Certification (CBFC) is headquartered in Mumbai.

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

(c) :answAr

Descriptive Question

Q. Cinematograph (Certification) Rules of 2024 is conscious effort towards regulation of cinema industry on one hand and protection of freedom of expression on the other hand. Elucidate. [10 Marks] [150 words]

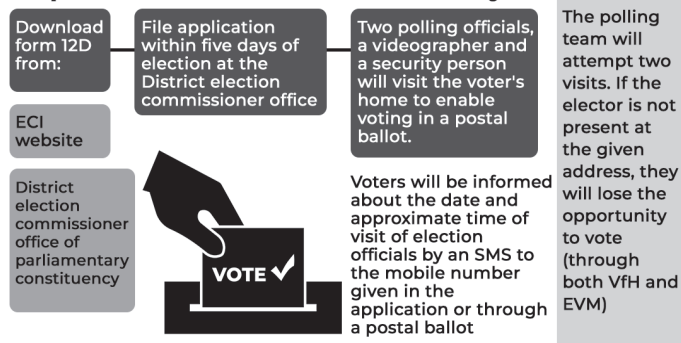
VOTE FROM HOME

Why in News: For the first time in the Lok Sabha election’s history, the Election Commission of India (ECI) has allowed senior persons 85 years of age and more and people with disabilities to use the “**vote-from-home**” option.

Key details

- Those who are **85 years of age or older**.
- **Individuals with impairments:** The disability must be verified by the certifying authority and cannot be less than **40% of the allowed handicap**.
- Reporters covering the “**activities of polling day**”: bringing letters of authorization from the Election Commission.
- **Employees from key service providers:** Transportation services like **subways, trains, and hospitals**.
- Voters who provide services include members of the armed forces stationed outside of their hometowns, members of the Central Armed Police Forces deployed overseas, and those performing poll duty.

Steps to avail the vote-for-home facility



Remote Electronic Voting Machine (RVM)

- The new RVM concept will allow voters who are registered in constituencies to exercise their voting rights using a single machine.
- The RVMs will have a similar voting experience to the EVM, but with an electronic ballot display featuring candidates and symbols instead of a fixed paper sheet. The system will also count and store votes.
- A public sector undertaking created the multi-constituency remote EVM, which can manage up to 72 constituencies from a single remote voting booth.
- If the remote electronic voting equipment is effectively implemented, migrant voters will not be required to travel to their home districts to exercise their voting rights.
- To implement remote voting, the Representation of the People Act, the Conduct of Election Rules, and the Registration of Electors Rules will all need to be revised.

Conclusion

The introduction of the “vote from home” option by the Election Commission of India signifies a progressive step towards enhancing electoral accessibility and inclusivity. This innovative initiative empowers citizens to exercise their voting rights conveniently, ensuring broader participation and strengthening the democratic fabric of the nation.

Expected Question for UPSC CSE

Prelims MCQ

- Q. Consider the following statements with reference to the “vote-from-home” option provided by the Election Commission of India:
1. It is mandatory for government officials to record video footage of each voter’s vote-from-home process.
 2. Voters who have applied for the vote-from-home option cannot vote at the polling station for the same electoral poll.

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

(c) :answAr

Descriptive Question

Q. Election reforms is evolutionary process. In the light of this statement, discuss in detail about the Vote from Home option.[10 Marks] [150 words]

INTERNATIONAL RELATIONS

G-4 MODEL FOR UN SECURITY COUNCIL REFORM

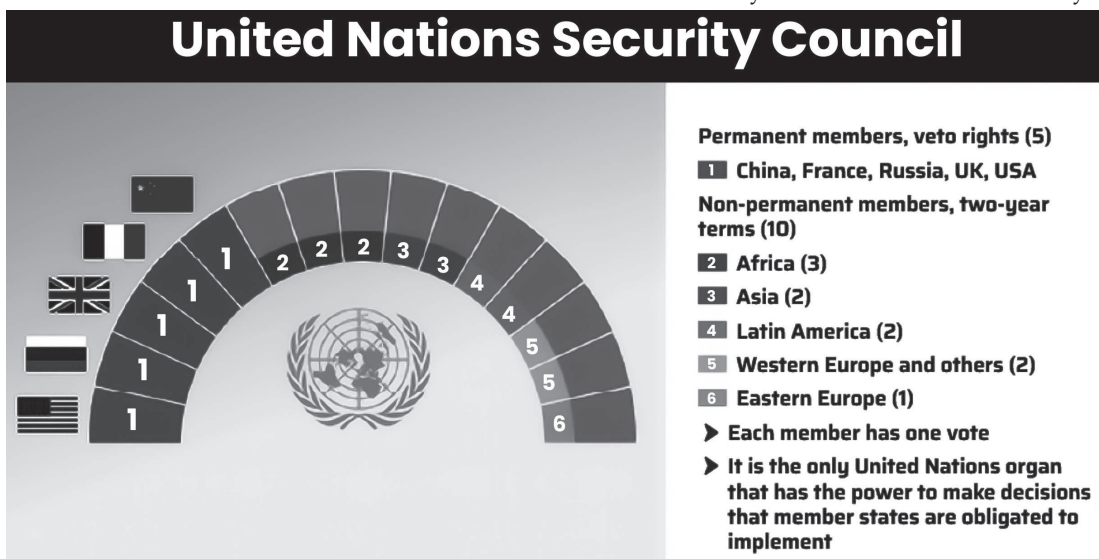
Why in News: Recently **India, along with Brazil, Germany, and Japan (G4 nations)**, has proposed a detailed UNSC reform model that addresses key concerns and offers a novel approach to the contentious veto power.

Key details

- **Enlarged Membership:** The model proposes increasing the number of **permanent members to 11**, along with **14-15 non-permanent members** elected for two-year terms.
- **Equitable Regional Representation:** Six new permanent seats would be allocated geographically: **2 for Africa, 2**

for Asia-Pacific, 2 for Latin America and the Caribbean, and 1 for Western Europe and Other Member States.

- **Working Methods:** Decisions within the Council would require an affirmative vote of 14 or 15 members out of a total of 25 or 26.
- **Veto Power for New Members:** A unique aspect of the proposal is the **delayed access to veto power** for new permanent members.
 - They wouldn't exercise this right until a review process, **15 years after the reform's implementation**, decides on its continuation.
- **Relationship with UN General Assembly:** The proposal emphasizes closer cooperation between the UNSC and the UN General Assembly (UNGA) through regular consultations, annual reports, and special reports submitted by the Council to the Assembly.



Why there is a need of UNSC Reforms

- **Lack of Contemporary Representation:** The five permanent members (P5) - China, France, Russia, the United Kingdom, and the United States - wield immense power but don't encompass the full spectrum of global influence.
- **Inadequate Regional Representation:** Regions like Africa and Latin America lack permanent representation, hindering their voice in crucial decisions.
- **Misuse of Veto Power:** The P5's veto power allows them to block resolutions, even in critical situations, raising concerns about accountability.
- **Inability to Address Conflicts:** The current composition struggles to address critical conflicts effectively.
- **Recognition for Contributors:** The UN Charter emphasizes the role of major contributors in the Security Council. Countries like India, Germany, and Japan, with their significant contributions, are strong candidates for permanent seats.
- **Risk of Parallel Forums:** Without reform, decision-making might move to alternative forums, undermining the Security Council's effectiveness.

Weaknesses of the G4 Model

- **Lack of Specificity:** The G4 model avoids specifying which countries will hold the new permanent seats.
- **Veto Review Ambiguity:** The G4 proposal for a “review” on the veto power lacks details on the process and timeline. This vagueness might create uncertainty and resistance from existing veto-wielding members.
- **Implementation Challenges:** Achieving consensus on UNSC reform requires the approval of all permanent members. Given past instances of opposition (e.g., China’s stance against India’s permanent seat), securing widespread agreement remains a significant hurdle.

Way Forward

- **Building Consensus:** The G4 nations can build consensus by actively engaging with all UN member states, addressing their specific concerns, and highlighting the benefits of reform for global peace and security.
- **Phased Approach:** Initial steps could involve expanding the non-permanent membership and addressing the veto power through a time-bound review process.
- **Focus on Effectiveness:** The focus should be on creating a more effective UNSC that can promptly address contemporary threats.

Conclusion

Reform of the UNSC is **essential to ensure its continued relevance, legitimacy, and effectiveness in addressing the complex security challenges** of the 21st century. A pragmatic approach that addresses the concerns of all stakeholders is crucial for realizing a reformed UNSC capable of maintaining global peace and security in the years to come.

Expected Questions for UPSC CSE

Prelims MCQs

Q 1. How many of the following statements is/are correct?

1. The United Nations Security Council (UNSC) stands as a pivotal body within the United Nations, entrusted with the vital task of upholding global peace and security.
2. India, along with South Africa, Germany, and Japan (G4 nations), has proposed a detailed UNSC reform model.
3. UNSC in 1945 under the UN Charter, comprises 15 member states.

Select the correct answer using the code given below:

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

Answer: (b) 1 and 3 only

Q 2. With reference to the United Nations Security Council (UNSC), consider the following statements:

1. Each year the General Assembly elects fifteen non-permanent members for a five-year term.
2. The sanctions imposed on a particular country by the UNSC do not involve the use of armed force.

Which of the statements given above is/are correct?

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

Answer: (b)

Descriptive Question

Q. What are the key features of G4 Model? Discuss why there is a need for reforms at United Nations Security Council (UNSC)? [10 Marks] [150 Marks]

WTO MINISTERIAL CONFERENCE

Why in News: Recently, the WTO 13th Ministerial Conference (MC 13) was held in **Abu Dhabi**, UAE, which concluded with the adoption of the **Abu Dhabi Ministerial Declaration (ADMD)**.

Important outcomes of MC 13

- **Progress of the Agreement on Fisheries Subsidies**
 - Under the Geneva Package, at the 12th Ministerial Conference 2022 held in Geneva Switzerland, an agreement to **curtail harmful subsidies that contribute towards illegal, unreported, and unregulated (IUU) fisheries** was reached.
 - Switzerland became the first member to accept the agreement. This agreement will come into effect when two-third of the member states accept it.
 - At MC 13, the progress made on this agreement was noted. As of March 2024, 71 member states have accepted the agreement
- **Moratorium on E-Commerce**
 - The moratorium on imposing import duties on the e-commerce trade was agreed at the MC 11 until the MC 12. It was subsequently extended up to MC 13 at the MC 12.
 - Now the moratorium has been extended for two more years until MC 14 or March 31, 2026 (whichever is earlier).
- **Induction of new member**
 - The membership to the WTO of two countries, **Comoros and Timor-Leste**, was formally approved. After the joining of these two **Least Developed Countries (LDCs)** the membership of the WTO will increase to 166.

WORLD TRADE ORGANISATION (WTO)

- Headquartered at **Geneva, Switzerland**.
- Successor to the General Agreement on the Tariffs and Trade (GATT)
 - GATT was signed in 1947
 - It was aimed at promoting international trade by reducing trade barriers and duties.
- Discussions started in the Uruguay round in 1986.
- Final agreement was reached in Marrakech, Morocco, 1994 hence known as **Marrakech Agreement**. It started working in 1995.
- It deals with the trade rules and resolves disputes between member nations.
- Decisions are taken based on consensus.
- 164 member nations. (will increase to 166 after induction of **Comoros and Timor-Leste**)

What is the Ministerial Conference?

- It is the highest decision-making body of the WTO. It is held roughly every two years. It brings together all the member nations to take decisions on important trade related matters. The 13th Ministerial Conference was held in Abu Dhabi, United Arab Emirates (UAE) in February 2024. The conference concluded with the adoption of the **Abu Dhabi Ministerial Declaration (ADMD)**

Conclusion

MC 13 showcased both successes and disappointments. While agreements were made on certain issues, others remained unresolved. The WTO's effectiveness is questioned, emphasizing the need for reforms to build trust and confidence among member nations and ensure its relevance in the evolving global trade landscape. **Cooperation and compromise are essential for reaching consensus** and addressing pressing trade challenges.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. How are disputes between member countries resolved within the World Trade Organization (WTO)?
- Through arbitration by the United Nations
 - Through bilateral negotiations between the countries involved
 - Through panels of independent experts and the WTO's Dispute Settlement Body
 - Through direct intervention by the WTO Director-General

Answer: (c)

Descriptive Question

- Q. Assess the outcomes of the WTO 13th Ministerial Conference and suggest measures to enhance its effectiveness in promoting fair and equitable trade. [15 Marks] [250 Words]

MALDIVES SIGNS MILITARY PACT WITH CHINA

Why in News: The recent signing of a military pact between the Maldives and China has cast a shadow over India-Maldives relations.

Key details

- The Maldives signed a defence agreement with China to **receive non-lethal military equipment and training**.
- The development follows President **Muizzu's state visit to China**, where the two countries agreed to elevate their relationship to a **"comprehensive strategic cooperative partnership."**

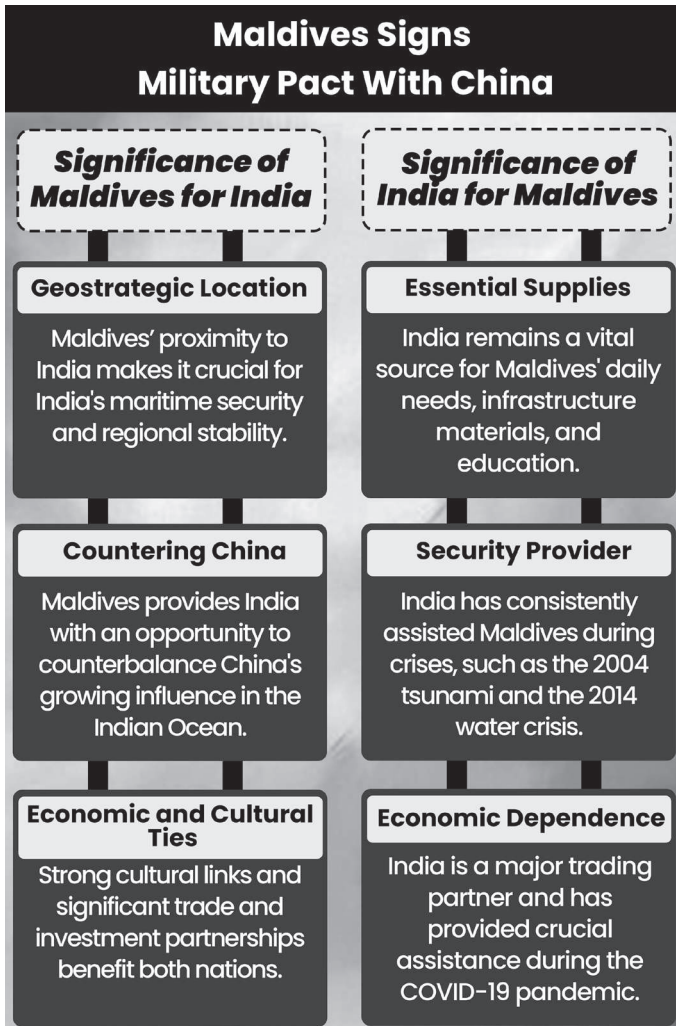
China's Expanding Footprint in the Maldives

- **Land Acquisition:** A Chinese firm secured a 50-year lease on **Feydhoo Finolhu islet**, raising concerns about potential military use.
- **Infrastructure Investments:** China has funded large-scale infrastructure projects, including the **\$200 million China-Maldives Friendship Bridge**, creating economic dependence.
- **Military Cooperation:** The recent military pact offers unspecified "military assistance," potentially including training and equipment.
- **Strategic Access:** Chinese **research vessels, like Xiang Yang Hong 03**, docking at Malé port could be used for strategic purposes.

Concerns for India

- **Threat to National Security:** A Chinese military presence in the Maldives could provide a strategic foothold for China, potentially threatening Indian maritime security.
- **Shifting Regional Balance:** China's growing influence could disrupt the regional balance of power, traditionally tilted towards India. This is evident in China's:
 - Establishment of a **military base in Djibouti**.
 - Development of **dual-use ports in Sri Lanka and Myanmar**, potentially for military use.
- **Strategic Competition:** The Indian Ocean is crucial for both India and China. China's growing footprint could intensify strategic competition in the region.
- **String of Pearls Strategy:** Some analysts view China's actions as part of its "String of Pearls" strategy, encircling India with a network of naval bases and infrastructure. This strategy also aims to:

- **Counter US Influence:** China seeks to challenge American dominance in the region.
- **Secure Trade Routes:** Securing vital trade routes for China's economic well-being is a key objective.



Steps taken by India to counter Chinese Influence

- **Strategic Partnerships**
 - **The Quad (Quadrilateral Security Dialogue):** This informal grouping of India, the United States, Japan, and Australia focuses on maritime security cooperation, humanitarian assistance, and promoting a free and open Indo-Pacific region.
 - **India-Japan and India-Australia Strategic Partnership:** This partnership focuses on economic cooperation, infrastructure development, and maritime security cooperation in the Indian Ocean.
- **Multilateral Engagement**
 - **Indian Ocean Naval Symposium (IONS):** This forum provides a platform for regional navies to collaborate on maritime security issues, promoting a cooperative approach to maintaining regional stability.
 - **Indian Ocean Rim Association (IORA):** This organization focuses on promoting economic

cooperation, disaster risk reduction, and sustainable development among Indian Ocean littoral states.

- **Diplomatic Outreach**
 - **Strengthening ties with South Asian Neighbours:** India has been working to improve relations with countries like Bhutan, Nepal, and Sri Lanka, which face increasing Chinese pressure.
 - **Boosting ties with Southeast Asian Nations:** India has expanded its defense and economic ties with Vietnam, Indonesia etc.

Way Forward

- **Strengthen Diplomatic Ties:** India should re-evaluate its relationship with the Maldives, addressing any grievances and fostering stronger diplomatic ties.
- **Economic Cooperation:** India should continue to offer competitive development assistance packages to counter China's economic influence in Maldives.
- **Multilateral Engagement:** India should work with regional partners to ensure a rules-based order in the Indian Ocean, promoting collective security.
- **Focus on Common Interests:** Prioritizing areas like maritime security, climate change, and economic development can strengthen the partnership.
- **Respect for Sovereignty:** Both nations must respect each other's internal affairs and avoid interference.

Conclusion

The recent developments highlight the need for India and the Maldives to navigate the complexities of their relationship. By acknowledging and addressing the challenges, they can build a stronger, more resilient, and mutually beneficial partnership for the future.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. The terms "Ekuverin", "Dosti" and "Ekatha" relates to

- Joint Exercises between India and Maldives
- Medical Assistance mission between and India and Maldives
- Boosting Tourism initiatives between India and Maldives
- Cultural and Historical epics exchange programme between India and Maldives

(a) Answer:

Q2. Consider the following statements regarding India – Maldives relations :

- The Indian Armed Forces assisted the Maldivian government in neutralizing the coup attempt as part of Operation Cactus.

2. In terms of trade, India-Maldives trade has doubled since 2014.

Choose the **incorrect** statement from the following:

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

Descriptive Question

Q. What are the implications of military pact between the Maldives and China on India? What should be India's approach to this evolving geopolitical development? [15 Marks] [250 Words]

SHANGHAI COOPERATION ORGANISATION

Why in News: India to host SCO Start up Forum 5.0 in January 2025.

Key details

- The initiative is aimed at **promoting start up interactions** among the **nine-member SCO** which comprises China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, India, Iran, Pakistan and Uzbekistan.
- The fourth edition of the Start-up Forum, organised in New Delhi on March 19, 2024 focused on **building partnerships among SCO Member States**.
- The creation of a **Special Working Group for Start-ups and Innovation (SWG)** at the Summit of SCO Heads of State in **Samarkand**, Uzbekistan, in September 2022, was a key step in the development of the SCO Start up Forum.

- The **SWG**, with the vision of promoting collaboration among SCO Member States and accelerating regional economic development, is **permanently chaired by India**.

About SCO

- SCO is a **permanent intergovernmental** organisation, created in **2001**.
- It is a **Eurasian political, economic and military** organisation aiming to maintain peace, security and stability in the region.
- **Goals of SCO**
 - To strengthen **mutual trust, friendship and good-neighbourliness** between the Member States;
 - To encourage **the effective cooperation** between the Member States in such spheres as **politics, trade, economy, science and technology, culture, education, energy, transport, tourism, environmental protection**, etc.;
 - To jointly ensure and maintain **peace, security and stability** in the region; and
 - To promote a new **democratic, fair and rational international political and economic order**.
- **The Organization has 2 standing bodies**
 - The **Secretariat in Beijing**
 - The Executive Committee of the **Regional Anti-Terrorist Structure (RATS) in Tashkent**.
- **Currently, the SCO countries include**
 - **9 Member States** — India, the Islamic Republic of Iran, the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, the Republic of Uzbekistan;

- **3 Observer States**
- **4 Dialogue Partners**

- It enjoys '**observer status**' at the UN General Assembly.

Significance of the Shanghai Cooperation Organization (SCO)

It holds great significance due to its multifaceted focus and vast reach.

Areas of Cooperation

- **Security:** The SCO prioritizes regional security issues, combating terrorism, ethnic separatism, and religious extremism.
- **Development:** The organization also actively promotes regional development through various initiatives.



Connectivity

- The SCO actively promotes improved infrastructure connectivity between member states. This is facilitated through various projects, including the China-Pakistan Economic Corridor (CPEC) and the International North-South Transport Corridor (INSTC).
- These initiatives aim to streamline trade and transportation flows within the region.

Strategic Importance

- **Regional Integration:** The SCO has the potential to serve as a catalyst for achieving greater integration and cooperation among Asian countries.
- **Stability and Connectivity:** The organization's efforts can contribute to enhanced stability and improved connectivity across its vast territory.

Security Cooperation

- **Multilateral Approach:** The SCO tackles security threats not only through counter-terrorism measures but also by addressing drug trafficking, fostering military cooperation, and promoting economic collaboration.
- **Effectiveness:** The SCO's range of initiatives, such as the joint military exercises known as "Peace Mission" drills, demonstrates a greater capacity for advancing shared security goals compared to the recent efforts of the Quadrilateral Security Dialogue (QUAD).

Challenges for India within the SCO

- **Balancing Major Powers:** As a member of the Quadrilateral Security Dialogue (Quad), India must carefully navigate its relations with China and Russia within the SCO. These two member states possess distinct regional and global priorities, potentially creating friction for India.
- **Regional Security Cooperation:** Combating security threats like terrorism, separatism, and extremism effectively necessitates collaboration among SCO member states. However, achieving consensus and coordinated action can be challenging.
- **Managing Relations with Pakistan:** India's historical animosity with Pakistan creates a significant hurdle within the SCO. Fostering cooperation amidst this complex relationship requires diplomatic finesse.
- **Economic Integration:** Several issues impede India's economic integration with the SCO. These include ensuring market access, developing robust infrastructure, and enhancing overall connectivity within the region.
- **Strategic Autonomy:** India, traditionally a champion of non-alignment, faces the challenge of balancing its commitment to the SCO with its independent foreign policy.
- **Sovereignty Concerns:** India's opposition to China's Belt and Road Initiative (BRI) stands in contrast to the support for the project expressed by other SCO members. This divergence in stance can potentially create friction.

- **Limited Trade:** India's bilateral trade with Central Asian nations and Russia lags significantly behind China's trade volume with these regions. This disparity presents an obstacle to India's economic goals within the SCO.

Way Forward

- India views the SCO as a crucial regional organisation for advancing cooperation in a range of areas based on internationally acknowledged norms, good governance, the rule of law, openness, transparency, and equality.
- Thus, it is important that all members adhere to and uphold the charter's ideals.

Conclusion

By offering mentoring, **access to investors, and corporate engagement activities**, India seeks to add tangible value to start-ups and empower the local start up ecosystems across the SCO member states and thus strengthen regional cooperation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. SCO is a permanent intergovernmental organisation, created in 2010.
2. Special Working Group for Start-ups and Innovation (SWG) which was formed at the Summit of SCO Heads of State in Samarkand, Uzbekistan, in September 2022 is permanently chaired by India.

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

(b) :Answer

Descriptive Question

Q. Critically examine 'SCO Start up Forum' within the Shanghai Cooperation Organization (SCO). Assess the potential benefits and challenges for India in enhancing start up ecosystem with SCO member states. [15 Marks] [250 Words]

ASEAN

Why in News: Australia invested \$1.3 billion in Southeast Asia to boost trade in the region during a 10-nation ASEAN forum summit in Melbourne, which will have an impact on India's bilateral relations with ASEAN.

Key details

- Australia, a trading partner of India, is concentrating on expanding economic ties outside of China, which has been a traditional commercial partner.
- Southeast Asia's energy needs are primarily met by fossil fuels, and Australia is a significant exporter of thermal coal and gas.

- The desire to switch to **renewable energy sources** is growing in both regions.
- This expenditure is in line with **international initiatives** to address **climate change** and meet **Paris Agreement commitments**.

ASEAN
Association of Southeast Asian Nations

Established in Bangkok, Thailand, on August 8, 1967.

1
The Association of Southeast Asian Nations, ASEAN is an **intergovernmental association** made up of **ten Southeast Asian countries**.

2
It provides a forum for these countries' **cooperation and coordination** on a range of **regional and global concerns**.

3
By means of **diplomatic discourse and multilateral agreements**, member states collaborate to tackle shared difficulties and attain mutual objectives.

Objectives

By supporting the **values of justice and deference to the rule of law** in interstate relations, the organization hopes to **foster peace and stability** in the Southeast Asian region and accelerate:-

Economic growth		Social progress, and cultural development in the area	
Solid partnerships with well-established international organizations		Southeast Asian studies are encouraged	

ASEAN's importance for India

- **Trade:** Being **India's fourth-largest trading partner**, ASEAN is significant for India in this regard.
 - India **exports** a wide range of products, including **jewellery, electronics, stones, pharmaceuticals, wheat, and spices**.
 - Similar to this, India imports items from ASEAN, including **natural rubber, newsprint, vegetable oils, pearls, and precious stones**. It also imports **electronic goods**.
- **China's Influence:** Due to its **connections, economics, and geographic location**, China has a big impact on

Southeast Asia. Nonetheless, India's capacity to achieve its objectives may be limited by an over-reliance on China.

- **Partnership diversification:** A number of ASEAN nations are **against China's claims to the South China Sea**. India can gain from strengthening its connections with other **ASEAN nations and lowering its dependency on China** in such a scenario.
- **Maritime Cooperation:** India and ASEAN's collaboration for the **Indo-Pacific region's sustainable use of ocean resources** will be beneficial for both ASEAN's interests and India's.
- **Opportunities for Economic growth:** The **rapid population increase of the ASEAN grouping is making it a rising economic powerhouse**. This can lead to a number of growth prospects, including expanded markets and increasing demand for goods and services.

Challenges in India-ASEAN relations

- **Trade Imbalances:** Over time, India's trade imbalance with ASEAN has grown. India is now worried about the advantages of the ASEAN-India Free Trade Agreement as a result of this. In **2021–2022, ASEAN imports total \$68 billion, while exports total \$42 billion**.
- **Type of engagement:** India continues to have more **bilateral interactions than multilateral ones with ASEAN nations**.
- **Rival regional accords:** Involvement in other accords such as the **Regional Comprehensive Economic Partnership (RCEP)** and the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)** takes focus and funds away from the ASEAN-Indian connection.
- **Chinese presence:** ASEAN's capacity to fully utilize **India's potential for regional stability** is hampered by the presence of other regional powers like China.
- **Limited Connectivity:** **Trade, investment, and people-to-people ties** are all impacted by the limited physical and digital connectivity that exists between India and the ASEAN countries, despite efforts to improve it.

Way Forward

- **Expanding QUAD:** The **QUAD+ arrangement** might be created by incorporating the ASEAN nations into the original QUAD proposal.
- **Maritime Security in the Indo-Pacific:** Because of maritime disputes, **ASEAN nations have little military contact with China**. India has the potential to close this gap and become as a key military ally in the area.
- **Strengthening cultural ties:** With some **innovative branding on both sides**, travel between India and the ASEAN region can be promoted even further.

- **Boost connectivity:** Improving the land, air, and sea links will improve the flow of people from one person to another and will also increase commerce, investment, and tourism.

Conclusion

India’s strategic engagement with the **Indo-Pacific region** is demonstrated by its commitment to ASEAN. **Regional peace and mutual progress** can be achieved through improving collaboration in trade, connectivity, defense, and socio-cultural aspects—even in the face of challenges from other countries.

Expected Questions for UPSC CSE

Prelims MCQ

Q. How many of the following statements about the Association of Southeast Asian Nations (ASEAN) is/are correct?

1. ASEAN was established in 1967 by five founding members: Indonesia, Malaysia, Philippines, Singapore, and Thailand.
2. ASEAN aims to promote regional peace, security, and stability through economic cooperation, cultural exchange, and mutual assistance.
3. The headquarters of ASEAN is located in Jakarta, Indonesia.
4. ASEAN comprises 12 member states, including Brunei Darussalam, Cambodia, Laos, Myanmar, and Vietnam.
5. ASEAN has a standing military force known as the ASEAN Armed Forces.

Select the correct answer using the code given below:

(a) Only two (b) Only three
 (c) Only four (d) All of the above

Answer: (b) (1, 2 and 3 only)

Descriptive Question

Q. Examine the relevance of ASEAN in the context of India’s Act East Policy. What are the challenges that lie ahead for India in this region? [10 Marks] [150 Words]

INDIA-THAILAND

Why in News: The Thai ambassador to World Trade Organisation (WTO) accused India of exporting rice at unfairly low prices funded by government subsidies.



Key details

- Thailand is a member of the **20-Nation Cairns Group**, which has time and again questioned India’s PDS programme at WTO. It has argued that the programme is “**highly subsidised**” and India’s farm support is “**distorting**” global food prices and “hurting” the food security of other countries.
- The **Cairns group comprises** Argentina, Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Pakistan, Paraguay, Peru, Philippines, South Africa, Thailand, Ukraine, Uruguay, and Vietnam. It has been lobbying for **agricultural trade liberalisation**.
- India informed the WTO that for its rice production in 2019-20, it gave subsidies of **13.7%**, as against the permitted 10%.
- After India, **Thailand** is the **second largest rice exporter** in the world.

India-Thailand Relations

- **Diplomatic:** Thailand and India have a **longstanding diplomatic relationship** that dates back to 1947. India’s ‘Act East’ and Thailand’s ‘Act West’ are strongly contributing to consolidating bilateral relations including economic & commercial linkages.
- **Economic:** Bilateral trade between India and Thailand reached an all-time high of around **USD 15 billion** in 2021-22. Currently, Thai goods have also benefited from **tax reduction** under **ASEAN-India FTA** in Goods, which came into effect in January 2010.

DISPUTES IN SOUTH CHINA SEA

- **Defence Exercises**
 - Exercise MAITREE (Army).
 - Exercise SIAM BHARAT (Air Force).
 - India-Thailand Coordinated Patrol (Navy).
- **Cultural:** An Indian Cultural Centre, now known as the **Swami Vivekananda Culture Centre**, was established in Bangkok in 2009. The 550th birth anniversary of **Sri Guru Nanak Dev Ji** was also celebrated in Thailand with various events and a grand Nagar Kirtan procession in Bangkok.
- **Common platforms**
 - Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
 - Mekong Ganga Cooperation (MGC)
 - Indian Ocean Rim Association (IORA)
 - East Asia Summit (EAS)

Conclusion

Thus, there is a need for peaceful resolution of the differences on AoA and for countries to collectively stand on principles of fair play and justice. All decisions taken at the WTO should also keep in mind the best interests of farmers of developing countries along with others.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding India-Thailand is correct?

- Thailand is the third largest rice exporter in the world after India.
- Exercise MAITREE and Exercise SIAM BHARAT are some of the defence exercises between India and Thailand.
- The diplomatic relations between the India and Thailand countries were established in 1960.
- None of the above

Answer: (b)

Descriptive Question

Q. Explain the Agreement on Agriculture (AoA) under the World Trade Organization (WTO), highlighting its objectives and provisions. Analyse its impact on INDIA-THAILAND relationship as Thailand openly accused India of unfair subsidies on rice. [15 Marks] [250 Words]

Why in News: Recently, Chinese coast guard ships were unsuccessful to block **two Philippine government vessels** carrying scientists in the **disputed South China Sea**.

Key details

- China's construction of a **barricade close to Scarborough Shoal** in the **South China Sea** has sparked a **new controversy**.
- **Since 2012, China and Philippines** have been involved in a **territorial dispute over the shoal**.

About South China Sea

- The **mainland of Southeast Asia** is surrounded by this arm of the **western Pacific Ocean**.
- **Bordering Countries:** The Asian countries of **Brunei, China, Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam** encircle the South China Sea, which is located just **south** of the Chinese mainland.
- It is connected to the **East China Sea** by the **Taiwan Strait** and the **Philippine Sea** by the **Luzon Strait**.
- The **Pearl (Zhu) River Delta's** tributaries, which include the **Xi, Red, and Mekong** rivers, are the main rivers that empty into the South China Sea.
- It is among the **most significant, vital, and divisive bodies of water** on the planet.
- It comprises of many islands, **atolls, reefs, and shoals**. The three most significant are **Scarborough Shoal, Spratly Islands, and Parcel Islands**.



China and Taiwan Malaysia Vietnam Brunei Philippines

Strategic Importance of South China Sea

- **Trade Routes and Shipping:** The South China Sea is the passageway for more than half of the world's yearly commercial fleet tonnage. Roughly 30% of the world's maritime commodities trade and 80% of China's oil imports are thought to pass via the South China Sea.
- **Strategic Location:** The South China Sea is one of the world's largest seas, spanning an area of around 3.5 million square kilometers. South China Sea is a major maritime choke point, through which around one-third of global shipping travels.

Importance for China

- In an official statement to the UN Secretary General back in May 2009, China asserted its claim to the islands in this area.
- Beijing needs to build strongholds in the sea to protect itself from potential threats given its expanding economy and the rising energy and raw material exports it ships over the Malacca Strait.
- India is becoming a more significant actor in the Indo-Pacific area as a result of its growing presence in the Pacific.
 - In order to investigate the South China Sea's petroleum resources, it has partnered with Vietnam.
 - Additionally, a significant portion of Indian trade passes through the Strait of Malacca.
- The Philippines' Department of Environment and Natural Resources claims that this sea is home to one-third of all marine biodiversity worldwide and has rich fisheries that provide Southeast Asian countries food security.

What exactly is the Scarborough Shoal conflict about?

Dispute between China and Philippines

- **Nine dash line:** In 1947, China's nationalist Kuomintang party issued a map with the so-called "nine-dash line".
 - It encircles Beijing's claimed South China Sea islands and waterways, extending up to 2,000 kilometers from the Chinese mainland. Beijing claims up to 90% of the sea.
- China's assertion in recent decades: China has begun to refer to the marine feature as **Huangyan (Yellow Rock) Island** and has claimed historic rights as one of the first people to discover the area.
- It was taken over by Beijing in 2012, forcing Filipino fisherman to travel further in search of lesser catches.

Other disputes in South China Sea

- **Paracel Islands :** China and Vietnam both assert territorial claims to the Paracel Islands.
- **Spratly Islands :** Six nations—China, Vietnam, Taiwan, Malaysia, Brunei, and the Philippines—have made claims to the Spratly Islands, a group of more than 700 reefs, islets, atolls, and islands.

Conclusion

To gain more confidence from its neighbours in Southeast Asia and to establish a stronger presence in this region of the world, India would need to interact and engage more with the other Quad members that have a similar level of influence in the region as part of its Act East policy.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements. How many of the following statements regarding South China Sea is/are NOT correct?

1. Seven nations—China, Vietnam, Taiwan, Malaysia, Brunei, USA, and the Philippines—have made claims to the Spratly Islands.
2. In 1947, China's nationalist Chinese Communist party issued a map with the so-called "nine-dash line".
3. It is connected to the East China Sea by the Taiwan Strait and the Philippine Sea by the Luzon Strait.

Select the answer using the codes below:

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

Answer: (b) (2 and 3 only)

Descriptive Question

Q. Discuss the geopolitical significance of the South China Sea region in the context of global maritime trade and security. Analyse the key stakeholders and their respective interests in the South China Sea dispute. [15 Marks] [250 Words]

SWEDEN OFFICIALLY JOINS NATO

Why in News: Following Russia's invasion of Ukraine, Sweden applied to join NATO two years ago and was accepted as the organization's thirty-second member. Sweden's application to join NATO was eventually approved.

Key details

Ultimate goal behind the formation of NATO

- **Political:** NATO fosters democratic ideals and allows members to confer and work together on military and security-related matters in order to resolve disputes, foster confidence, and ultimately avoid war.
- **Military:** NATO is dedicated to resolving conflicts peacefully. If diplomatic attempts prove fruitless, it possesses the military might to carry out crisis management actions.

NATO	Details
Formation	1949 (H. Q.: Brussels, Belgium)
Members	32 member countries (as of 2023, including Finland and Sweden)
Founding Members	Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States
Objective	NATO's essential and enduring purpose is to safeguard the freedom and security of all its members by political and military means.
Article 5 of NATO	A key provision of the NATO treaty states that an attack on one member is an attack on all members. It has been invoked only once after the 9/11 terrorist attacks in the United States. However, NATO's protection does not extend to members' civil wars or internal coups.
Alliance	Euro-Atlantic Partnership Council (EAPC), Mediterranean Dialogue, Istanbul Cooperation Initiative (ICI)

Expected Questions for UPSC CSE

Prelims MCQs

Q1. How many of the following statements regarding NATO (North Atlantic Treaty Organization) is/are correct?

- NATO was established in 1949 as a collective defence alliance.
- The NATO headquarters is located in Brussels, Belgium.
- The NATO member countries commit to the principle of collective defence, wherein an attack on one member is considered an attack on all.
- NATO primarily focuses on economic cooperation among member states to promote stability in the North Atlantic region.

Select the correct answer using the codes below:

- (a) Only one (b) Only two
 (c) Only three (d) All of the above

Answer: (b) 1 and 2 only

Q2. Consider the following statements with reference to the North Atlantic Treaty Organization (NATO):

- Its membership is open to European countries intending to contribute to the security of the North Atlantic area.
- NATO has the military power to undertake crisis-management operations.
- Belarus is one of the founding members of NATO.

How many of the above statements are correct?

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

Answer: (b) 1 and 2 only

Descriptive Question

Q. Recently, Sweden has joined NATO. Discuss how Sweden's integration into NATO will benefit the alliance. [10 Marks] [150 Words]

UNGA RESOLUTION ON AI

Why in News: UN General Assembly unanimously adopted the first ever landmark resolution on artificial intelligence on 21 March 2024 and highlighted the need for **respect, protection and promotion of human rights** in the design, development, deployment and the use of AI.

Key details

- The report is titled **"Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development"** and aims to strike a balance between leveraging AI for global advancement and mitigating the inherent risks associated with its deployment.
- Its resolution also called for **"increasing media and information literacy"** to enable users to determine when digital content has been generated or manipulated by AI.

Component of Resolution	Description
Data Protection	Initiatives to fortify the security of personal data.
Privacy Enhancements	Measures to boost privacy through improved policy frameworks.

Monitoring for Risks	Systems for the continuous assessment of AI's potential dangers.
Human Rights Safeguards	Commitments to ensure AI development does not compromise human rights.

Significance

- The **consensus-based adoption** of the resolution signifies a rare moment of unity despite initial resistance from nations such as Russia and China.
- The resolution, proposed by the US and backed by China and over 120 countries, focuses on **data protection, privacy, risk monitoring, and human rights**.
- Industry leaders, including Microsoft's Brad Smith, have expressed strong support for the resolution, seeing it as essential for **ethical AI development**.
- While the resolution does not include the word "**deepfake**," it recognized the risks of AI-generated content that may be indistinguishable from authentic content, and promoted the development of tools, standards or practices for "**reliable content authentication**," specifically noting "**watermarking or labelling**" as examples.

Other Efforts

- **Bletchley Declaration**, signed by 28 nations during the UK's inaugural AI Summit in November, previously set the stage for international dialogue on AI governance
- European Parliament approved the **European Union AI Act**, which imposed risk-based requirements for providers of AI systems, including bans on some uses and mandated labelling of AI-generated media like deepfakes.
- Additionally, recent agreements among the **US, Britain, and other nations** focus on creating AI systems that are "secure by design," a proactive approach to countering misuse.
- The **Global Partnership on Artificial Intelligence (GPAI)**, an alliance of 29 members, has unanimously adopted the New Delhi declaration underscoring the need to mitigate risks arising from the development and deployment of artificial intelligence (AI) systems, and promoting equitable access to critical resources for AI innovation, including computing and high-quality diverse datasets

Conclusion

Despite being nonbinding, the resolution is a step towards more concrete international agreements and regulations on AI. As we look to the future, the principles and aspirations set forth in this resolution will serve as a compass to ensure that AI development is aligned with the common good, protecting individual rights while promoting sustainable and equitable progress worldwide.

Expected Questions for UPSC CSE

Prelims MCQs

- Q1. In the context of Artificial Intelligence (AI), what does the term "deep learning" refer to?
- (a) A form of machine learning that uses neural networks with multiple layers to learn complex patterns from data.
 - (b) An AI technique that mimics the human brain's ability to learn and adapt.
 - (c) A method of programming computers to follow specific instructions without explicit programming.
 - (d) A process by which AI systems are trained to improve their performance over time.

Answer: (a)

- Q2. The resolution titled "Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development" is associated with

- (a) United Nations General Assembly
- (b) International Committee of the Red Cross (ICRC)
- (c) European Council for Nuclear Research
- (d) International Science Council

Answer: (a)

Descriptive Question

- Q. "UNGA resolution is Way Forward in the arena of AI governance." Discuss. [10 Marks] [150 Words]

UNEMPLOYMENT IN INDIA

Why in News: The Periodic Labour Force Survey (PLFS) offers vital insights into India's employment landscape. In 2023, a significant drop in the unemployment rate to 3.1% was reported, marking a positive trend post-Covid-19.

Key details

- This recovery aligns with India's robust economic growth, surging to 8.4% in the third quarter of 2023-24.
- The PLFS, initiated by the National Sample Survey Office (NSSO), has become instrumental in understanding employment dynamics, surpassing the previous five-year surveys conducted by the National Statistical Office (NSO).

Key findings				
Indicator		2021 (Jan -Dec)	2023 (Jan -Dec)	Trend
LFPR	Total	55.2%	59.8%	Increase
	Rural	57.6 %	63.4 %	Increase
	Urban	49.4 %	51.4 %	Increase
	Male	77.4 %	78.3 %	Increase
	Female	32.8 %	41.3 %	Increase
WPR	Total	52.9%	58.0%	Increase
UR	Total	4.2%	3.1%	Decrease

What is the Periodic Labour Force Survey?

- This survey, which measures India's employment and unemployment rate, is carried out by the National Statistics Office (NSO) on behalf of the Ministry of Statistics and Programme Implementation (MoSPI).
- The PLFS was introduced by the NSO in April 2017.

Objectives of PLFS: The PLFS has two primary objectives

- **Short-Term Estimates for Urban Areas:** To estimate key employment and unemployment indicators (such as Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) within a short time interval of three months, focusing on urban areas only, and using the 'Current Weekly Status' (CWS).
- **Annual Estimates for Both Rural and Urban Areas:** To estimate employment and unemployment indicators, considering both 'Usual Status' and CWS, for both rural and urban areas annually.

Key Indicators of the Periodic Labour Force Survey Data



Flagship Programmes for Employment Generation

- **Digital India by Ministry of Electronics and Information Technology:** Aims to ensure broadband connectivity at the village level, enhance access to services through IT-enabled platforms
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) by Ministry of Housing and Urban Affairs:** AMRUT focuses on providing basic services to households and developing amenities in cities to enhance the quality of life for all residents, with a particular emphasis on improving infrastructure in urban areas
- **Make in India by DPIIT, Ministry of Commerce & Industry:** Make in India seeks to facilitate investment, foster innovation, enhance skill development, protect intellectual property, and build world-class manufacturing infrastructure to promote indigenous manufacturing and job creation.
- **Shyama Prasad Mukherji Urban Mission by Ministry of Rural Development:** This mission aims to deliver integrated infrastructure projects in rural areas, including the development of economic activities and skill enhancement, to bridge the rural-urban divide and promote holistic rural development.

Conclusion

A multi-faceted approach involving **education reforms, industry alignment, startup support,** and long-term policy interventions is crucial to addressing employment challenges and fostering sustainable economic growth. Prioritising labour-intensive industries over capital-intensive ones and bridging the gap between college education and industry requirements is imperative for Indian youth to achieve their true potential and to realize the goal of **Viksit Bharat.**

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Which of the following statements about employment indicators is incorrect?
- (a) Labour Force Participation Rate (LFPR) is percentage of persons in the labour force (i.e., working or seeking or available for work) in the population.
 - (b) Worker Population Ratio (WPR) is percentage of employed persons in the population.

- (c) Unemployment Rate (UR) is percentage of persons unemployed among the persons in the labour force.
- (d) None of these

(d) :Answer

Descriptive Question

Q. The majority of India's unemployment is caused by structural factors. Evaluate the approach used to calculate the nation's unemployment rate and make recommendations for improvements. [15 Marks] [250 words]

INDIA - EUROPEAN FTA DEAL

Why in News: India's recent signing of the Trade and Economic Partnership Agreement (TEPA) with the European Free Trade Association (EFTA) marks a significant milestone in its trade relations.

MAJOR TRADE AGREEMENTS OF INDIA

Free Trade Agreement (FTA) With Neighbouring Countries

- ↳ India-Sri Lanka FTA
- ↳ India-Nepal Treaty of Trade
- ↳ India-Bhutan Agreement on Trade, Commerce, and Transit

A free trade agreement is a comprehensive deal between countries, offering preferential trade terms and tariff concessions, with a negative list excluding specific products and services.

Regional FTA's of India

- ↳ **India ASEAN Trade in Goods Agreement (11):** 10 ASEAN countries + India
- ↳ **South Asia Free Trade Agreement (7):** India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, and the Maldives
- ↳ **Global System of Trade Preferences** (41 countries + India)

India's CECAs and CEPAs

- **Comprehensive Economic Cooperation Agreement (CECA)**
- **Comprehensive Economic Partnership Agreement (CEPA)**

CECA/CEPA is broader than FTAs, addressing regulatory, trade, and economic aspects comprehensively, with CEPA having the widest scope including services, investment, etc while CECA mainly focuses on tariff and TRQs (Tariff Rate Quotas) rates negotiation.

- **CEPA with UAE, South Korea, Japan**
- **CECA with Singapore, Malaysia**

↳ **Others:**

- India-Australia Economic Cooperation and Trade Agreement (ECTA)
- India-Thailand Early Harvest Scheme (EHS)
- India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA)

An EHS precedes an FTA/CECA/CEPA, where negotiating countries select products for tariff liberalisation, paving way for broader trade agreements and fostering confidence.

Preferential Trade Agreements (PTAs)

Partners in a PTA grant preferential access to specific products by lowering duties on agreed tariff lines, maintaining a positive list of products eligible for reduced or zero tariffs.

- ↳ **Asia Pacific Trade Agreement (APTA):** Bangladesh, China, India, S. Korea, Lao PDR, Sri Lanka, and Mongolia
- ↳ **SAARC Preferential Trading Agreement (SAPTA):** Same as SAFTA
- ↳ **India-MERCOSUR PTA:** Brazil, Argentina, Uruguay, Paraguay and India
- ↳ India's PTA with **Chile, Afghanistan**

What is EFTA?

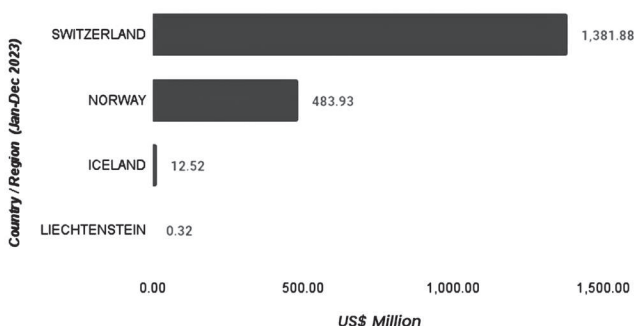
- The **European Free Trade Association (EFTA)**, established in **1960**, comprises four member states – Iceland, Liechtenstein, Norway, and Switzerland.
- EFTA fosters free trade and economic integration among its members and serves as a platform for trade agreements with external partners like India.



India and EFTA

- India’s trade with the European Free Trade Association (EFTA) countries witnessed **exports amounting to USD 1.92 billion and imports totaling USD 16.74 billion** in the fiscal year 2022-23.
- The bilateral trade between **India and EFTA reached USD 18.65 billion** during the same period.
- Notably, **Switzerland emerges as India’s primary trading partner**, closely followed by Norway.
- India experiences a trade deficit with Switzerland primarily due to significant gold imports.

Country wise exports from India in 2023



Trade and Economic Partnership Agreement (TEPA)

- **Purpose:** The TEPA seeks to foster trade and investment opportunities between India and EFTA by **eliminating or reducing tariffs and non-tariff barriers across a broad spectrum of goods**.
- Its goals include ensuring equitable and transparent market access for service providers and investors, as well as bolstering collaboration on the protection and enforcement of intellectual property rights.
- The agreement also **aims to streamline trade procedures and enhance customs cooperation**, while establishing effective mechanisms for resolving disputes.
- **Scope:** Comprising **14 chapters**, the agreement covers various aspects such as **trade in goods, rules of origin, intellectual property rights (IPRs), trade in services, investment promotion and cooperation, government procurement, technical barriers to trade, and trade facilitation**.

The agreement offers a multitude of advantages

- **Economic Growth and Job Creation:** The anticipated **USD 100 billion in FDI** from EFTA countries promises

to bolster **India's infrastructure, technological advancement**, and job creation.

- **Market Access and Trade Expansion:** Indian exporters will gain access to EFTA markets for goods like IT services, pharmaceuticals, and processed food at lower prices.
 - Conversely, Indian consumers will benefit from a **wider variety of imported goods** at potentially competitive prices.
- **Strategic and Technological Benefits:** The deal strengthens India's economic ties with Europe, fostering a more balanced global trade landscape. It also facilitates knowledge sharing, **joint research ventures, and access to cutting-edge technologies** in EFTA nations.
- **Setting a Precedent:** The successful implementation of TEPA can serve as a model for **future trade agreements with other European nations like the UK** and potentially even the EU.
 - It reinforces India's image as a champion of free trade, attracting further foreign investment.

Challenges Associated with the India-EFTA Deal

- **Exclusion From FTA:** Sensitive sectors like agriculture and dairy in India face limited tariff reductions, potentially hindering some EFTA exports.
- **The USD 100-Billion Legal Commitment:** The agreement hinges on the fulfillment of a USD 100 billion investment target. If not met, India can revoke concessions.
- **Data Exclusivity:** The proposed data exclusivity for EFTA countries could delay the production of generic medicines in India, raising public health concerns.
- **The Difference in Income Level:** The vast disparity in per capita income between India and EFTA countries could widen the development gap.
- **Non-Tariff Barriers (NTBs):** Differences in product standards and technical regulations can create hurdles for businesses exporting goods.
- **Domestic Resistance:** Indian sectors facing stiff competition from EFTA imports might express concerns about job losses and unfair competition.

Way Forward for Successful Implementation

- **Addressing Asymmetries:** Negotiate investment protection measures and consider phased tariff reductions for sensitive sectors in India.
- **Bridging the Regulatory Gap:** Reduce non-tariff barriers, establish mutual recognition agreements for specific products, and form joint committees for harmonizing regulations.
- **Building Capacity:** Invest in training programs and upgrade infrastructure to facilitate smooth implementation and efficient handling of increased trade volume.
- **Fostering Collaboration:** Maintain regular stakeholder

dialogues and encourage knowledge sharing programs for mutual benefit.

Conclusion

The India-EFTA TEPA holds **immense potential for economic growth and strategic cooperation**. By proactively addressing challenges, building capacity, and fostering collaboration, both sides can unlock the true potential of this agreement and forge a thriving economic partnership.

Expected Questions for UPSC CSE

Descriptive Question

- Q. Discuss some of the major trade agreements of India with various countries. In this regard explain challenges associated with the India-European Free Trade Association (EFTA) trade deal. [15 Marks] [250 Words].

"VOCAL FOR LOCAL" INITIATIVE

Why in News: The NITI Aayog, India's premier policy think tank, has launched a new initiative called "**Vocal for Local**" as part of its Aspirational Blocks Programme (ABP).

Key details

- **Partnering with Digital Platforms:** The program collaborates with existing platforms like Government e-Marketplace (GeM) and Open Network for Digital Commerce (ONDC) to provide:
 - **E-commerce Onboarding:** Assisting local businesses in joining online marketplaces.
 - **Market Access:** Connecting them with a wider customer base.
 - **Skill Development & Literacy:** Equipping them with the necessary digital and financial skills.
 - **Documentation & Certification:** Facilitating compliance and quality standards.

Digital Platforms

- **Government e-Marketplace (GeM):** A public procurement portal for government entities to purchase goods and services. GeM's participation will facilitate procurement of local products by government bodies.
- **Open Network for Digital Commerce (ONDC):** An open-protocol platform allowing local businesses to be discovered and engaged by various online applications. This will provide crucial market access to local entrepreneurs.

Benefits of Vocal for Local

- **Economic Growth:** Prioritizing local products strengthens domestic businesses, artisans, and manufacturers, leading to economic expansion.
- **Empowering SMEs:** Small and medium-sized enterprises (SMEs) are the backbone of India's economy. This initiative increases their visibility and market access, fostering their growth.
- **Environmental Sustainability:** Locally made goods often require less transportation, reducing carbon footprint and promoting environmental responsibility.
- **Cultural Preservation:** Many local products are deeply rooted in India's rich heritage. "Vocal for Local" helps safeguard these traditions and cultural diversity.
- **Community Empowerment:** The initiative fosters a sense of community pride by encouraging people to support local businesses and products.

The Aspirational Blocks Programme (ABP)

- It was launched in 2023, the ABP targets **500 blocks across 27 states and 4 Union Territories**, focusing on India's most underdeveloped and challenging regions. The program aims to:
 - **Improve Governance:** By enhancing governance practices to improve the quality of life for citizens in these areas.
 - **Convergence of Schemes:** Ensure existing government schemes are effectively combined for maximum impact.
 - **Outcome-Oriented Monitoring:** Continuously monitor progress based on 40 key performance indicators (KPIs) across five key themes.

Way Forward

- **Raising Awareness:** Extensive public awareness campaigns are needed to educate citizens about the initiative's benefits and encourage them to prioritize local products.
- **Quality Control & Certification:** Mechanisms to ensure quality standards of locally produced goods are essential to build consumer trust.
- **Logistics & Infrastructure:** Developing efficient logistics and infrastructure within these blocks will be crucial for smooth product movement and market access.
- **Financial Support:** Providing financial assistance and credit facilities to local businesses will be critical for scaling up production and operations.
- **Skill Development Programs:** Continued skill development programs in areas like digital marketing, e-commerce management, and product design will empower local entrepreneurs.

Conclusion

By implementing these measures, the "Vocal for Local" initiative has the potential to significantly empower grassroots entrepreneurs, strengthen local economies, and contribute to the overall development of India's aspirational blocks.

Expected Questions for UPSC CSE

Descriptive Question

- Q. "Vocal for Local initiative can promote make in India and Atmanirbhar Bharat as well as can tackle issue of jobless growth." Elucidate. [15 marks] [250 words].

PROMOTION OF ORGANIC FARMING

Why in News: The Agricultural and Processed Food Products Export Development Authority (APEDA) recently formed a dedicated organic promotion division, highlighting India's growing focus on promoting organic exports.

Key details

- The **Food Safety and Standards Authority of India (FSSAI) is the apex food regulator**, responsible for overseeing organic food domestically and for imports. In 2017, FSSAI established the current certification system through the "Food Safety and Standards (Organic Foods) Regulations."
- **Existing Certification Systems: National Programme for Organic Production (NPOP)**
 - Grants organic farming certification through **third-party certification bodies**.
 - Functions include accreditation of certification bodies, standards for organic production, and promotion of organic farming.
 - **Implemented by the Agricultural and Processed Food Products Export Development Authority (APEDA) under the Ministry of Commerce and Industry.**
 - NPOP standards and accreditation systems are recognized by the European Commission, Switzerland, and the USA, facilitating international trade.
- **Participatory Guarantee System for India (PGS)**
 - Implemented by the **Ministry of Agriculture and Farmers' Welfare**.
 - **Empowers organic farmers with control over the certification process.**
 - **Applies to groups** of at least five farmers, excluding individual or smaller groups.
 - Covers on-farm activities like crop production, processing, and livestock rearing.

- Excludes off-farm activities like storage, transportation, and value addition handled by entities outside the PGS group.

About APEDA

- **Establishment:** Established in 1986 under the **Agricultural and Processed Food Products Export Development Authority Act, 1985.**
- **Functioning:** Operates under the **Ministry of Commerce and Industry**, with **headquarters in New Delhi.**
- **Collaboration:** Signed an MoU with the **Small Farmers Agribusiness Consortium (SFAC)** in 2020 to enhance synergy in agricultural activities.

Functions of APEDA

- **Export Promotion and Development:** Focuses on the export of various scheduled products.

Composition of APEDA Authority

- Chairperson appointed by the Central Government.
- Agricultural Marketing Advisor to the Government of India (ex-officio member).
- One member representing NITI Aayog.

What is Organic Farming?

- Organic farming, a **method that utilizes natural inputs and processes**, has emerged as a promising solution to address the concerns of environmental degradation and food security.

CHAHAL'S PERSPECTIVE

ORGANIC FARMING

Significance of Organic Farming	Challenges in Organic Farming
<p>Improved soil fertility Organic practices like composting enrich the soil, promoting long-term productivity.</p>	<p>Lower yields Organic yields are generally 18.4% lower compared to conventional methods.</p>
<p>Healthier Food Products Organic farming eliminates the use of synthetic fertilizers and pesticides, resulting in safer food free from harmful residues.</p>	<p>High certification costs Organic certification can be expensive for farmers, posing an economic barrier.</p>
<p>Reduced soil erosion Organic farming practices like cover cropping help protect soil from erosion.</p>	<p>Inadequate supporting infrastructure Limited access to organic inputs and market infrastructure can hinder growth.</p>
<p>Lower environmental pollution It eliminates the use of synthetic fertilizers and pesticides, minimizing environmental contamination.</p>	<p>Increased labor needs Organic methods require more time and effort for pest management and other aspects.</p>
<p>Reduced greenhouse gas emissions Organic farming contributes to mitigating climate change by reducing carbon emissions associated with synthetic input production.</p>	<p>Weed Control Weed management is a significant challenge as synthetic herbicides cannot be used. Organic farmers rely on labor-intensive methods like manual weeding, mulching, and cover cropping, increasing production costs.</p>
<p>Biodiversity Conservation Organic farming fosters biodiversity by creating habitats for beneficial insects, birds, and other wildlife, promoting a healthy and balanced ecosystem.</p>	<p>Access to Organic Inputs Availability of certified organic seeds, fertilizers, and other inputs can be limited, especially in remote areas. This can hinder the adoption and scalability of organic farming practices.</p>

India's Position in Organic Agriculture

- India ranks **5th globally in terms of organic agricultural land**, showcasing its potential in this sector.
- The leading organic product-producing states are **Madhya Pradesh, Maharashtra, Rajasthan, Karnataka, and Odisha.**
- Sikkim is the first fully Organic state.

Initiatives to Promote Organic Farming

- **Revising National Programme for Organic Production (NPOP) guidelines:** This aims to enhance accessibility of Indian organic products in international markets. The NPOP plays a crucial role in:
 - **Accreditation of Certification Bodies:** Ensuring certification bodies meet stringent standards.
 - **Fixing standards for organic production and packaging:** Maintaining quality and preventing misleading claims.

- **Paramparagat Krishi Vikas Yojana 2015:** This scheme provides financial assistance to states for organic farming promotion.
- **Mission Organic Value Chain Development for Northeast Region:** This initiative focuses on developing the organic value chain in the Northeast states.
- **Jaivik Kheti organic e-commerce portal:** Launched by the Ministry of Agriculture and Farmers Welfare, this online platform facilitates the marketing and sale of organic products.

Way Forward

- **Strengthening research and development:** Investments in research to develop higher-yielding organic varieties and effective pest and disease management techniques are crucial.
- **Improving infrastructure:** Building robust infrastructure for organic production, processing, storage, and transportation is essential to minimize post-harvest losses and enhance overall efficiency.
- **Promoting consumer awareness:** Educating consumers about the benefits of organic products can create a larger market and motivate farmers to adopt organic practices.
- **Financial incentivization:** Providing financial assistance to farmers during the transition period and offering subsidies for organic certification can encourage wider adoption.

Conclusion

Organic farming offers a **promising path towards achieving sustainable agriculture** and contributing to several national goals, including public health, environmental protection, and rural income generation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Participatory Guarantee System for India (PGS) is related to:

(a) Cooperative Society (b) Municipal bonds
(c) Organic farming (d) None of the above

(c) Answer

Descriptive Question

Q. What are the principles of organic farming? Discuss its opportunities for India along with the government efforts to promote organic farming. [15 Marks] [250 words]

INDIA EMPLOYMENT REPORT 2024

Why in News: Recently, a report “India Employment Report 2024” has been jointly released by the **Institute of Human Development (IHD)** and the **International Labour Organization (ILO)**.

Key details

- The **India Employment Report 2024**, the third in a series published by the **Institute for Human Development**, focuses on **young employment, education, and skills**.
- It examines improvements over the last two decades to meet issues in **India’s growing economic, labor market, educational, and skills landscapes**.

Insights from the Report

- India’s youth account for **approximately 83%** of the unemployed workforce, with the proportion of educated youth in total unemployment doubled from 35.2% in 2000 to 65.7% in 2022.
- **Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR), and Unemployment Rate (UR)** witnessed a sustained decline between 2000 to 2018, only to show signs of improvement post 2019, corresponding with economic crisis periods.
- Despite some improvements in **labor market indicators**, the primary employment concern remains the **non-farm sector’s limited growth and ability to absorb agricultural workers**.
- **Approximately 90% of workers are engaged in informal work**, with the proportion of regular job decreasing after 2018. Livelihood insecurity is **pervasive, with little coverage from social protection measures, notably in the non-agriculture, organized sector**.
- Despite the **demographic dividend**, a **sizable section of India’s young workforce lacks critical skills**. Many young people struggle with simple computer skills such as sending emails or working with spreadsheets.
- India has a **significant gender gap in the labour market**, with **low levels of female labour force participation**, particularly **among highly educated women**. This contributes to **high rates of unemployment among young women**.
- Despite **affirmative action and targeted legislation**, **Scheduled Castes and Scheduled Tribes continue to face barriers to better jobs**, with a **higher proportion** of them working in **low-wage temporary casual work and informal employment**.
- Despite **increased educational attainment across all demographics**, **social stratification continues**.

About International Labour Organization

- It is the **only tripartite organization** within the **United Nations**, bringing together **officials from 187 member states’ governments, businesses, and labor unions to create global labor standards**.
- In 1946, it was designated as the UN’s first specialized agency.
- Constituted by the **Treaty of Versailles in 1919** is a **League of Nations (LoN) associated organization**.

- Became the United Nations' first associated specialized agency in 1946.
- Headquartered in Geneva, Switzerland
- **Founders' Mission:** Achieving universal and sustainable peace requires social justice.
- Promotes labor and human rights that are acknowledged globally.
- Awarded the 1969 Nobel Peace Prize.

Institute for Human Development (IHD)

- In 1998, the Indian Society of Labour Economics (ISLE) sponsored the founding of the Institute for Human Development (IHD).
- It is an independent, non-profit organization that seeks to support the development of a society devoid of poverty and deprivation that promotes and values an inclusive social, economic, and political structure.
- The Board of Governors, which is made up of renowned academics, specialists, decision-makers, and development professionals, directs the Institute's operations.
- IHD receives advice on its academic programs from an Academic Committee made up of distinguished academicians from a variety of human development topics.

CHAHAL's PERSPECTIVE on India Employment Report 2024



Challenges for Youth Employment

• India is predicted to remain in the potential demographic dividend zone for at least another ten years, and a sizable section of the population is of working age.

▶ However, the youth population, which made up 27% of the overall population in 2021, is predicted to drop to 23% by 2036, putting the nation at a turning point.

• Compared to adults, youth labor market involvement has been significantly lower and has been dropping over the long run (2000–19), mostly as a result of higher rates of education.

• **Educational Disparities**

There are significant differences in the level of education in India, and many graduates do not possess the information and abilities that businesses demand. The young unemployment issue is made worse by the mismatch between the requirements of the industry and the educational system.

• **Dominance of the Informal Sector**

The issue is made more complex by the informal sector's predominance in India's economy, which is typified by low-paying and frequently unstable jobs. Many young people are stuck in low-wage, unregulated jobs with low productivity and no social security benefits.

Way Forward

• Five important policy areas - promoting job creation, improving employment quality, addressing labor market inequalities, strengthening skills and active labor market policies, bridging the knowledge gaps on labor market patterns and youth employment—are highlighted in the report as areas that require further action.

• **Skill Development Programs**

It is imperative to put in place extensive programs for skill development that are in line with industry demands. By working together, businesses and educational institutions can close the skills gap and increase the employability of young people.

• **Education Reforms**

It is imperative to restructure the educational system to better meet the demands of the labor market. The inclusion of internships, practical experiences, and vocational training in the curriculum can improve graduates' employability.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. India Employment Report is published by,
- (a) International Labour Organization (ILO).
 - (b) World bank.
 - (c) Reserve bank of India.
 - (d) Labour ministry.

(a) Answer

Descriptive Question

- Q. What are the reasons for high youth unemployment in India? What measures should be taken to address them? [10 Marks] [150 words]

BOOSTING EXPORTS FROM MSMEs

Why in News: NITI Aayog, a premier policy think tank, released a report titled "Boosting Exports from MSMEs".

Key details

- Micro, Small and Medium Enterprises (MSMEs) are the lifeblood of the Indian economy, contributing a significant 33.4% of GDP and employing over 120 million people, they contribute a significant chunk to the GDP (27%). [MSME Ministry].
- However, their share of India's exports remains modest, hovering around 48%.

- Recognizing this, NITI Aayog released a report titled “Boosting Exports from MSMEs” which highlights the opportunities and challenges faced by MSMEs in exporting and suggests recommendations for improvement.

Definition of Micro, Small and Medium Enterprises

Parameters	Micro	Small	Medium
Investment in Plant and Machinery	< 1 Crore INR	< 10 Crore INR	< 50 Crore INR
Annual Turnover	< 5 Crore INR	< 50 Crore INR	< 250 Crore INR

Opportunities for MSME Exports

- Unique Products:** India boasts a rich cultural heritage reflected in its wood products and handloom textiles, which hold immense potential due to their unique aesthetics and cultural appeal to international consumers.
- Global Demand Shift:** The growing global demand for natural and sustainable products presents a significant opportunity for Indian MSMEs, known for their traditional craftsmanship and use of natural materials.

CHAHAL's PERSPECTIVE

Boosting Exports from MSMEs

Challenges	Recommendations
<div style="margin-bottom: 10px;"> <p>Limited Access to Finance MSMEs face a significant credit gap, with commercial banks fulfilling only 16% of their credit demand. This lack of access to working capital and other financial resources hinders their ability to scale up production for exports.</p> </div> <hr/> <div style="margin-bottom: 10px;"> <p>Limited Market Access MSMEs often lack the exposure and resources to navigate the complexities of the global export market. Challenges related to meeting stringent international quality standards, limited understanding of foreign regulations, and inadequate marketing networks further restrict their export potential.</p> </div> <hr/> <div style="margin-bottom: 10px;"> <p>Business Environment Numerous regulatory compliances, delays in customs clearance due to complex procedures, and a shortage of credible and internationally accredited testing labs add to the time and cost burden of exporting.</p> </div> <hr/> <div> <p>Taxing Export Procedures The current export procedures are cumbersome, involving high volumes of paperwork, approvals from multiple authorities, and a lack of transparency, making it a deterrent for potential exporters.</p> </div>	<div style="margin-bottom: 10px;"> <p>One-Stop Information Channel Establishing a centralized knowledge base for export procedures, product-specific regulations, and market information would empower MSMEs to navigate the export process effectively.</p> </div> <hr/> <div style="margin-bottom: 10px;"> <p>National Trade Network Portal A digital platform can streamline the export process, improve efficiency, and reduce costs associated with documentation, approvals, and logistics.</p> </div> <hr/> <div style="margin-bottom: 10px;"> <p>E-commerce Promotion Encouraging e-commerce platforms for MSME exports can provide greater access to international markets and simplify participation for first-time exporters.</p> </div> <hr/> <div> <p>Better Measurement of MSME Exports Accurate data on the contribution of MSMEs to exports is crucial for identifying areas for improvement and evaluating the effectiveness of policy interventions.</p> </div> <div style="text-align: center; margin-top: 20px;"> </div>

Way Forward

- Realizing the potential of MSME exports requires a multi-pronged approach. **Financial institutions need to develop MSME-specific credit products** and simplify loan processes.
- Government initiatives like **skill development programs and export promotion schemes** can enhance the competitiveness of MSMEs in the global market.

- Improving trade infrastructure, simplifying regulations, and expediting customs clearance** will further ease the path for MSME exporters.
- By addressing these challenges and **implementing the recommendations outlined in the NITI Aayog report**, India can unlock the vast potential of MSME exports and contribute significantly to its economic growth and global trade footprint.

Conclusion

MSMEs are the **engine of India's growth, and their potential for export contribution** is immense. By recognizing the opportunities, addressing the existing challenges, and implementing effective policy measures, India can empower MSMEs to become significant players in the global marketplace.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding MSMEs in India:

1. MSME sector in India is the most significant driver in India contributing to the tune of 15% to GDP.
2. Almost 86% of manufacturing MSMEs in the country are unregistered.

Which of the above sentence is/are Correct?

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

Answer: (b)

Descriptive Question

Q. Discuss the contribution of MSMEs to the Indian economy. Also highlight the challenges faced by MSMEs and the ways to address them. [15 Marks] [250 words]

NATIONAL URBAN CO-OPERATIVE FINANCE AND DEVELOPMENT CORPORATION

Why in News: The Union Cooperation Minister recently launched the National Urban Co-operative Finance and Development Corporation Limited (NUCFDC) in New Delhi.

What is NUCFDC

- It was established in March 2024 **under the Ministry of Cooperation**. It aims to **modernize and strengthen** the urban cooperative banking sector in India.
- It functions as both a **Non-Banking Finance Company (NBFC)** and a **Self-Regulatory Organization (SRO)** for the sector.

Objectives of NUCFDC

- **Raise Capital:** With a target **capital base of Rs. 300 crores**, NUCFDC will provide financial support to Urban Cooperative Banks (UCBs).
- **Offer Specialized Services:** They will offer financial

assistance, consultancy services, and capacity building programs to UCBs.

- **Develop Shared Technology Platform:** This platform will enable UCBs to offer a wider range of services at lower costs and improve their efficiency.
- **Facilitate Communication and Regulation:** It will act as a bridge between UCBs and regulatory bodies, promoting smoother communication and streamlined regulations.

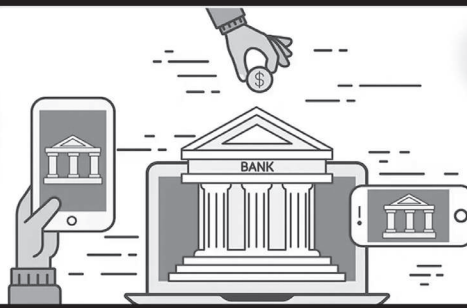
Understanding of Cooperative Banks in India

- **Role:** Cooperative banks are **small financial institutions playing a vital role in financial inclusion**, especially in areas where commercial banks might not have a presence. They cater to specific need and offer services like:
 - Credit and financial services to farmers, contributing to agricultural development.
 - Savings opportunities, promoting savings habits, especially in rural and semi-urban areas.
 - Loans for small businesses, housing, and other purposes, addressing specific local needs.
- **Current status:** Over 1,500 scheduled and non-scheduled UCBs operate in India with a deposit size of over Rs. 5.33 lakh crore and total lending exceeding Rs 3.33 lakh crore.
- **Regulation and Supervision:** UCBs face **dual regulation:**
 - **RBI** oversees financial aspects like licensing, capital adequacy, and regulations under the **Banking Regulations Act 1949**.
 - **State governments** handle **registration, governance**, and some administrative aspects through their Registrar of Cooperative Societies.

Significance of NUCFDC

- **Modernization:** UCBs can access the latest technology and offer new products and services, enhancing their competitiveness.
- **Grassroots Development:** NUCFDC has the potential to empower communities and bring positive change at the grassroots level.
- **Improved Services:** NUCFDC can contribute to improved financial services for urban customers by enhancing UCB capabilities.
- **Strengthening Cooperative Banking:** A stronger UCB sector can play a more significant role in India's financial landscape, offering competitive services and contributing to financial inclusion.

CHAHAL'S PERSPECTIVE Urban Cooperative Banks



Challenges Faced by UCBs

Limited Capital Base

Smaller capital reserves compared to commercial banks can restrict their lending

Governance Issues

Concerns regarding governance practices in some cooperative banks exist.

Competition

Increased competition from commercial banks and microfinance institutions in some areas.

Technology Adoption

Lag in adopting modern technologies can hinder efficiency and customer service.

Way Forward

• Strengthening Regulatory Framework

Addressing the issue of dual regulation through a collaborative approach between the RBI and State Governments can enhance governance and oversight.

• Phased Implementation

Prioritizing support to UCBs based on their financial health and potential for growth can ensure efficient utilization of resources.

• Focus on Capacity Building

Investing in capacity building programs for UCBs' management and staff is essential to improve governance, risk management, and technological adoption.

• Promoting Innovation

Encouraging UCBs to explore innovative financial products and services tailored to local needs can enhance their competitiveness and relevance.

• Adapt to the evolving financial landscape by offering competitive products and services.

Conclusion

The NUCFDC holds immense potential for revitalizing the UCB sector and contributing to financial inclusion. However, addressing the challenges and ensuring effective implementation of its initiatives will be critical for its success.

Expected Questions for UPSC CSE

Prelims MCQs

Q. Consider the following statements about Urban Cooperative Banks:

1. RBI oversees financial aspects like licensing, capital adequacy, and regulations under the Banking Regulations Act 1949.
2. State governments handle registration, governance, and some administrative aspects through their Registrar of Cooperative Societies.

Which of the above statement(s) is/are correct?

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

(c) : Answer

Descriptive Question

Q. Discuss the significance of urban cooperative societies in addressing urban poverty in India. Give suggestions to improve their efficiency. [10 Marks][150 words]

INDUSTRIAL OUTPUT GROWTH SLOWS TO 3.8% IN JANUARY

Why in News: Eight of the 23 manufacturing segments tracked by the NSO to compute the IIP contracted in January

Key details

- The latest factory output, based on the **Index of Industrial Production (IIP)**, India's industrial growth **dipped in January 2024**. Overall output slowed to 3.8%, compared to a revised December increase of 4.24%.
- This decline was driven by a **slowdown in manufacturing** (3.2% growth from 4.5% in December) and a contraction in

consumer non-durables – essential goods for households – for the second time in the past three months.

- **Factory output** increased 5.9% between April and January of this year, slightly more than the 5.5% growth seen during the same period last year.

Highlights of 8 core sectors by the IIP's report 2024

India's industrial sector displayed a mix of growth and decline in January 2024 compared to the same month in 2023. Here's a quick insight given below:

- **Strong performers:** Coal (10.2% increase), Cement (5.6% increase), Steel (7.0% increase), Electricity (5.2% increase), and Natural Gas (5.5% increase) all witnessed healthy growth.

SEMICONDUCTOR MISSION

- **Mixed results:** Fertilizer production saw a slight dip (0.6% decrease) despite a positive year-to-date performance (5.5% increase).
- **Lagging sector:** Petroleum Refinery production declined by 4.3%, although it maintained a positive trend year-to-date (3.9% increase).
- **Crude oil flatlines:** Crude oil production saw a marginal increase (0.7%) but has a negative year-to-date performance (-0.2% decrease).

Way Forward

This mixed picture suggests that while some key sectors are expanding, others are facing challenges. The positive year-to-date trends for most sectors offer a glimmer of hope for continued recovery in the coming months.

Index of Industrial Production (IIP)

- **The Central Statistical Organisation (CSO)** is responsible for the compilation and publication of the Index of Industrial Production (IIP) since 1950.
- The monthly figure of production value in such cases is first deflated by the **Wholesale Price Index (WPI)** of the corresponding categories, released by the Office of the **Economic Adviser, Ministry of Industry**.
- The scope of the IIP as recommended by the **United Nations Statistical Office (UNSO)** includes mining, manufacturing, construction, electricity, gas and water supply. But due to constraints of data availability, the IIP compiled in India has excluded construction, gas and water supply sectors.
- **Current Status of IIP (Base 1993-94) on the recommendation of United states and executed under guidance of Technical Advisory Committee (TAC)** constituted by the CSO in June 1995.
- Apart from the monthly IIP compiled by the CSO, a number of State Directorates of Economics and Statistics are engaged in the compilation of State-level Indices of Industrial Production (IIPs).

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about Index of Industrial Production:

1. The Central Statistical Organization (CSO) is responsible for the compilation and publication of the Index of Industrial Production (IIP)
2. Base Year for IIP is 2015-2016.
3. IIP is the only measure on the physical volume of production.

How many of the above statement(s) is/are correct?

- a. Only one
- b. Only two
- c. All of the above
- d. None of the above

ANSWER: (b) (only 1)

Why in News: The Indian government recently approved setting up three new semiconductor plants in Gujarat and Assam, marking a significant step towards building a domestic chip manufacturing ecosystem.

Key details

- **Dholera, Gujarat:** A fabrication plant by Tata Electronics and Taiwan's Power chip Semiconductor Manufacturing Corp. (PSMC).
- **Morigaon, Assam:** A chip assembly plant by the Tata Group costing Rs 27,000 crore.
- **Sanand, Gujarat:** A semiconductor plant by CG Power and Japan's Renesas, with an estimated cost of Rs 7,600 crore.

What are Semiconductors?

- Semiconductors, often called "**chips**," are the brains of modern electronic devices. They are intricate products, essential for processing, storing, and transmitting data.
- These chips comprise interconnected **transistors, diodes, capacitors, and resistors layered on a silicon wafer**.

Global Scenario

- Currently, the global semiconductor manufacturing landscape is heavily concentrated, with **70% of the capacity** residing in South Korea, Taiwan, and China and **the US and Japan** making up for a significant portion of the remaining share.
- **Taiwan and South Korea** dominating the foundry base (chip production) at around **80%**.
- Only **one company (ASML, Netherlands)** possesses the technology (EUV lithography) crucial for advanced chips.

Challenges for India

- **Competition:** India's close allies, like the US and EU, offer more attractive incentive schemes, potentially hindering Indian competitiveness.
- **Talent Pool:** While India has a strong pool of design engineers, skilled personnel for fabrication plant operations are scarce.
- **Research and Development:** India lags in original research, crucial for future chip development.
- **Infrastructure**
 - **Uninterrupted power supply:** Fluctuations can cause significant losses.
 - **Water scarcity:** Chip-making is water-intensive, posing challenges in drought-prone regions.

Significance of the Project

- **Job creation:** The industry requires skilled personnel, generating direct and indirect employment opportunities.

- **Reduced dependence on imports:** A domestic industry can enhance self-reliance and mitigate risks associated with global supply chain disruptions.
- **Export potential:** A competitive industry can generate revenue through chip exports, improving the trade balance.
- **Strategic importance:** Domestic production ensures greater control over the supply chain for critical sectors like defense, aerospace, and telecommunications.

India's Initiatives in this regard

The government has taken several steps to support the semiconductor industry:

- **India Semiconductor Mission:** This mission will formulate strategies and drive long-term development in this sector.
- **Production Linked Incentive (PLI) scheme:** This scheme offers incentives for semiconductor design and packaging.
- **QUAD Semiconductor Supply Chain Initiatives:** This collaboration aims to assess capacities, identify vulnerabilities, and enhance supply chain security.

Way Forward

- **Skill Development:** Invest in skill development programs to bridge the talent gap.
- **Collaboration:** Partner with global leaders for technology transfer and knowledge sharing.
- **Focus on R&D:** Encourage research and development in advanced chip design and manufacturing techniques.
- **Streamlining Regulations:** Facilitate ease of doing business for chip manufacturers.
- **Infrastructure Development:** Ensure reliable power supply, water availability, and efficient logistics networks.

Conclusion

By addressing the **existing challenges and building a robust domestic semiconductor industry**, India can position itself as a major player in the global technology landscape. This initiative will have significant implications for the country's economic growth, strategic security, and technological advancement.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following elements/compounds:

- | | |
|---------------------|--------------|
| 1. Gallium Arsenide | 2. Germanium |
| 3. Gallium Nitride | 4. Carbon |

How many of the above can be used as semiconductor(s)?

- (a) Only one (b) Only two
(c) Only three (d) All of the above

(d) :Answer

Descriptive Question

Q. Discuss the importance of semiconductors in the global and Indian economy. What are the opportunities and challenges faced by India in the semiconductor sector? [15 Marks] [250 words]

COMMON CURRENCY FOR D-8 COUNTRIES

Why in News: Prime Minister of Bangladesh suggested that the Muslim countries of D-8 grouping should introduce a common currency like the euro of the European Union to facilitate trade and commerce among them.

What is D-8 grouping

- The D-8 Organization for Economic Cooperation, commonly referred to as Developing-8, is a cooperative organization focused on development among **Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan, and Turkey.**
- The establishment of D-8 Organization for Economic Cooperation was announced officially through the **Istanbul Declaration** of Summit of Heads of State/ Government on June 15, 1997.
- Headquarters- **Istanbul, Turkey.**

Advantages of common currency

- **Elimination of Currency Exchange Costs:** With a common currency, member countries within the same region no longer need to incur costs associated with currency exchange. For example, the adoption of the euro in the Eurozone has saved businesses and consumers an **estimated €20 billion annually** in currency conversion fees.
- **Price Transparency:** Common currencies promote price transparency by eliminating exchange rate fluctuations. This allows businesses and consumers to make informed decisions based on consistent pricing across borders. The adoption of the euro has led to increased price transparency, making it easier for consumers to compare prices across Eurozone countries. Eliminating accusations of **price manipulation in WTO.**
- **Stimulated Trade and Investment:** By removing currency conversion barriers, common currencies stimulate intra-regional trade and investment.
- **Enhanced Economic Stability:** Common currencies mitigate exchange rate fluctuations and reduce currency

speculation, leading to greater economic stability within the region. The West African Economic and Monetary Union (WAEMU), has experienced relatively lower inflation rates and greater price stability compared to non-WAEMU countries in the region.

- **Increased Foreign Direct Investment (FDI):** Due to reduced currency risk and increased market transparency.
- **Less dependency on the US dollar** and other global currencies recognised by IMF.
- **Buffer for western sanctions** as it impacts the basic principles of Market economy, Free trade, and threat to private property as is seen in case of US and EU sections against Iran and Russia in recent times.

Issues with common currency

While common currencies offer advantages, they also pose significant challenges.

- One major issue is the **loss of independent monetary policy**. Member countries relinquish control over their own monetary policy, limiting their ability to respond to domestic economic conditions such as **inflation or recession**.
- Additionally, common currencies may exacerbate **economic disparities** among member states, as regions with weaker economies may struggle to compete or adjust to the monetary policies set by stronger economies.
- Another concern is the risk of **asymmetric shocks**, where economic disturbances affect member countries differently, leading to divergent economic outcomes.
- Furthermore, common currencies require **strong fiscal coordination** and **political unity** to be sustainable, which can be difficult to achieve among diverse nations.
- The **Eurozone**, for instance, has faced challenges due to these issues, with **debates over fiscal discipline and bailouts** highlighting the complexities of managing a common currency across diverse economies.

Examples of common currency found across the world

- **Eurozone (Euro):** The European Union’s adoption of the euro as a common currency among its member states has streamlined trade and financial transactions.
- **East African Community (EAC) - East African Shilling:** The East African Community’s plan to introduce a common currency, the East African Shilling, aims to boost intra-regional trade and investment. By removing currency conversion barriers, it fosters economic growth and integration among member states like **Kenya, Uganda, Tanzania, Rwanda, Burundi, and South Sudan**.
- **West African Economic and Monetary Union (WAEMU) - CFA Franc:** The WAEMU, comprising eight West African countries, shares the CFA franc as a common currency. It facilitates trade within the region, enhances price stability, and promotes economic cooperation among member states.

- **Caribbean Community (CARICOM) - Eastern Caribbean Dollar:** Some members of CARICOM, such as members of the Eastern Caribbean Currency Union, share the **Eastern Caribbean Dollar**.
- **Gulf Cooperation Council (GCC) - Gulf Currency Union (proposed):** The GCC nations have proposed the establishment of a common currency, the Gulf Currency Union. six Arab countries – **Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates**.

Way Forward

- The D-8 countries can move forward towards a common currency by prioritizing economic convergence, fiscal coordination, and political cooperation.
- Establishing a **framework for monetary integration, harmonizing fiscal policies, and fostering trust** among member states are essential steps.
- Additionally, conducting thorough **feasibility studies**, addressing economic disparities, and engaging in **transparent dialogue** can **help build consensus** and pave the way for the successful implementation of a common currency within the D-8 Organization for Economic Cooperation.

Conclusion

- The D-8 group’s proposal for a common currency could enhance economic integration and cooperation, but requires **careful consideration of economic disparities, fiscal coordination, and political unity** for sustainability.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. What is one of the disadvantages commonly associated with the adoption of a common currency among member states?
- (a) Increase in currency exchange costs
 - (b) Decreased price transparency
 - (c) Loss of independent monetary policy
 - (d) Reduction in foreign direct investment (FDI)

Answer: (c)

Descriptive Question

- Q. “The D-8 countries can move forward towards a common currency by prioritizing economic convergence, fiscal coordination, and political cooperation.” Discuss. [10 Marks][150 Words].

GLOBAL ECONOMIC PROSPECTS REPORT

Why in News: World Bank urges developing nations to enhance their investment by **\$2.4 trillion** in order to make a course correction.

Key details

- By the **end of 2024**, the world economy might be performing poorly – the slowest half-decade of GDP growth in 30 years.
- Using the World Bank's income classification, the world currently comprises of 26 low-income, 108 middle-income, and 83 high-income economies.
- **About 75 percent** of the world's population, middle-income countries now account for about 40 percent of global economic activity, 50 percent of the world's extremely poor people, and 60 percent of global CO₂ emissions.

Reasons behind slowdown of Global economy

- **Global gross domestic product (GDP)** growth is predicted by the report to slow down, from an estimated 2.7% in 2023 to 2.4% in 2024.
- **South Asia's** economic growth is expected to remain steady at 5.2% in 2024, led by **India's** strong performance as the **world's fastest-growing large economy** (projected at 6.2% growth) with the help of robust domestic demand and thriving manufacturing and service sectors.
- After being a major concern for the past two years, **global inflation** is projected to fall from 8.1% in 2022 to 3.9% in 2024, due to a decrease in global commodity prices and reduced demand caused by stricter monetary policies. However, food prices remain a challenge, worsening food insecurity and poverty in developing countries.
- **Climate change** is projected to cause significant economic damage worldwide, with studies suggesting (IPCC) a potential 10-23% decrease in global GDP by 2100 due to extreme weather events and rising temperatures. (Climate change's extreme weather – wildfires, floods, droughts – is projected to slash global GDP by up to 23% by 2100, impacting infrastructure, agriculture, and livelihoods.)
- **Global investment** is sluggish due to economic worries, high debt, and rising interest rates. Developed countries favour green energy and infrastructure, while developing nations struggle with capital flight and less foreign investment. Geopolitical tensions add to the slowdown, even though massive investment is needed for clean energy by 2050.
- **The global job market** is recovering unevenly. Developed nations boast low unemployment (US 3.7%, EU 6%) and rising wages, while developing nations face mixed progress and high youth unemployment. Women's participation fell globally (47.2% in 2023 vs 48.1% in 2013). AI's rapid rise in firms (1/3 use it now) could

further impact low-skilled jobs, especially for women and developing countries.

Way Forward

The 2024 WESP report calls for **strong international collaboration** to tackle climate change, finance sustainable development, and ease the debt burden of developing countries, ultimately aiming to achieve the UN's Sustainable Development Goals (SDGs) on a global scale.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following reports:

1. Human Capital Index
2. World Economic Outlook
3. Global Economic Prospects

How many of the above report(s) is/are published by World Bank?

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

Answer: (b) (only 1 and 3)

Descriptive Question

Q. Discuss the reasons for global economic slowdown. Also highlight India's opportunities in this context. [10 Marks] [150 words]

DIGITAL MARKETS ACT

Why in News: The European Union recently launched investigations into Alphabet, Apple and Meta for potentially breaching the Digital Markets Act.

About Digital Markets Act

- The Digital Markets Act (DMA) is a key component of the **European Union's digital strategy**, aimed at regulating the **"gatekeepers,"** to ensure fair competition and innovation in digital markets.
- In 2023, EU designated **six companies as "gatekeepers"** under the act, meaning they were big and powerful enough to warrant extra regulation: Alphabet, Amazon, Apple, Meta, Microsoft and TikTok owner ByteDance.
- They were given six months, until 7 March 2024, to comply with the rules, which aim to open up commonly used popular tech platforms and give users greater choice.
- Areas of current investigation
 - **Anti-Steering:** Whenever a user makes an in-app purchase on an iPhone or an Android device – such as ordering food for delivery – Apple or Alphabet will usually take a cut of the fee. To get around this, app developers sometimes "steer" consumers towards

their own websites, encouraging them to make payments to them directly so they can swerve the big tech companies' extra charges.

- **Self-Preferencing:** In online marketplaces, tech companies have been accused of displaying their own products more prominently than those of their rivals, giving themselves an unfair competitive edge.

• **Consequences of Non-Compliance**

- Fines up to 10% (or 20% for repeated breaches) of global annual turnover.
- Daily penalties up to 5% of average daily turnover.
- Remedial actions, including possibly restructuring parts of the business.

Efforts by Government of India

- **Competition Commission of India**, a statutory body of the Government of India responsible for enforcing the Competition Act, 2002, constituted in 2009,

takes cognizance of cases of anti-competitive conduct by large digital enterprises markets

- The **53rd Parliamentary Standing Committee Report** in December 2022 identified 10 anti-competitive practices commonly engaged in by Big Tech companies.
- **Committee on Digital Competition Law** was constituted in February 2023 to examine the need for an ex-ante competition framework to specifically regulate digital markets.

DIGITAL MARKETS ACT

Do's

- Allow third-party services to work with the gatekeeper's services.
- Let business users access their data on the platform.
- Provide advertisers with necessary tools and information for independent advertisement verification.
- Permit business users to directly promote and sell to customers outside the gatekeeper's platform.

Do Not's

- Preferentially treat their products or services over those of others in rankings.
- Bar consumers from connecting with businesses outside the platform.
- Restrict users from removing pre-installed software or apps.
- Track users for targeted advertising without explicit consent.




Benefits of Digital Markets Act

For Business Users	A fairer environment for businesses relying on gatekeepers, promoting competition.
For Innovators and Start-ups	More opportunities to compete and innovate without facing unfair terms.
For Consumers	Access to more services, the ability to easily switch providers, and enjoy fair prices.
For Gatekeepers	While maintaining their ability to innovate, they must avoid using their position to disadvantage others unfairly.

Conclusion

The DMA addresses the **previously unregulated or inconsistently regulated activities of gatekeepers**, offering clearer obligations and reducing compliance costs. It marks a significant step towards ensuring that digital markets in the EU are fair, competitive, and innovative.

Expected Questions for UPSC CSE Prelims

Prelims MCQ

Q. Consider the following statements regarding 'gatekeeper':

1. It refers to big and powerful companies that warrant extra regulation.

2. It is defined under IT Rules, 2000.

Which of the following statement(s) is/are correct?

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

Answer: (a)

Descriptive Question

Q. Discuss the need for regulation of online companies. Also highlight the efforts by the government of India to regulate them. [15 Marks] [250 words]

THE RISE OF THE CARE ECONOMY

Why in News: A recent report titled **"Formulating a Strategy for India's Care Economy: Unlocking Opportunities,"** prepared by the **Confederation of Indian Industry (CII)** in collaboration with the Ministry of Women and Child Development, sheds light on care economy.

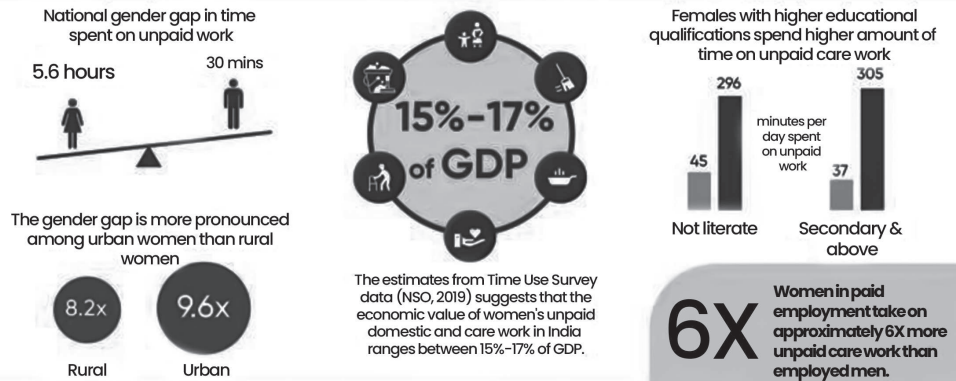
Key details

- The care economy encompasses the **paid and unpaid labor that supports caregiving in all its forms.**
- This includes **domestic chores, childcare, eldercare, and care for individuals with disabilities or illnesses.**

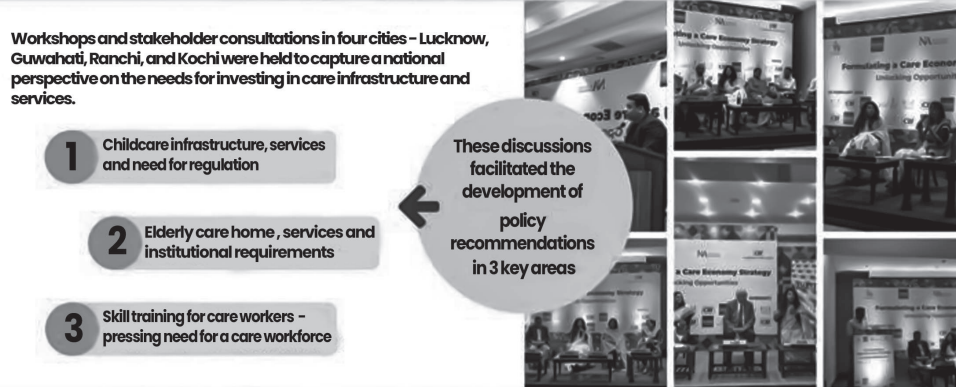
Formulating a Care Economy Strategy for India

In support of the Government of India

R A T I O N A L E



F I E L D C O N S U L T A T I O N S



R O A D M A P - 5 P I L L A R F R A M E W O R K

Based on a review of over 50 interventions for care economy investments and services across G20 countries, complemented by consultations and focus group discussions with over 60 stakeholders in government agencies, private sector, care service providers, and NGOs across India, a 5-pillar roadmap for reimagining India's care economy has been recommended.



Conclusion

The care economy presents a unique opportunity for India to address social and economic needs simultaneously. By recognizing its value, investing in infrastructure, and addressing existing challenges, India can unlock the immense potential of this sector

Government Initiatives

- **Maternity Leave:** The Maternity Leave Amendment Act, 2017, offers 26 weeks of leave, exceeding the International Labour Organization's (ILO) standard of 14 weeks. Additionally, it mandates crèche facilities for employees.
- **Extending Rights:** The Sexual Harassment of Women at Workplace Act and minimum wage legislations have been made applicable to domestic workers.

Expected Questions for UPSC CSE

Descriptive Question

Q. What is care economy? Discuss ways of accounting it into the national GDP. Also highlight the associated challenges. [10 Marks] [150 words]

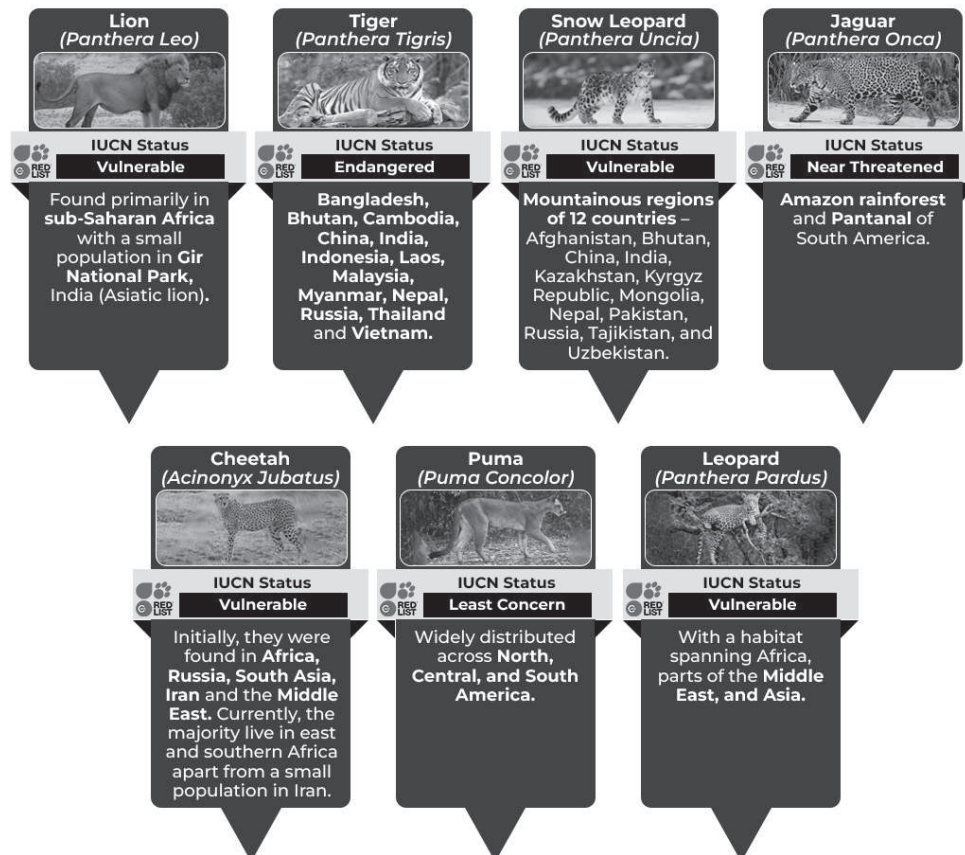
ENVIRONMENT & GEOGRAPHY

INTERNATIONAL BIG CAT ALLIANCE (IBCA)

Why in News: Recently the Indian government has announced to establish the **International Big Cat Alliance (IBCA)** with headquarters in India.

About IBCA

- **Background:** It was launched in April 2023 to commemorate the 50th year of India's successful tiger conservation project that is Project Tiger (1973).
- **Aim:** It aims to strengthen the global cooperation for the conservation of **seven big cat species (Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, and Puma)** and their vital habitats.
 - Notably, **India boasts five of these magnificent creatures**, excluding the puma and jaguar.
- **Structure:** IBCA is a multi-country, multi-agency coalition encompassing:
 - **96 Big Cat Range Countries:** Nations where these species naturally occur.
 - **Non-Range Countries with Interest:** Countries not having big cats within their borders but committed to their conservation.
 - **Conservation Partners and Scientific Organizations:** Individuals and institutions actively involved in big cat conservation research and protection efforts.
- **Funding**
 - **Initial Support:** India has provided a **one-time grant of Rs. 150 crore for five years (2023-24 to 2027-28)**.
 - **Future Funding:** Exploring contributions from bilateral and multilateral agencies, public sector organizations, and other potential donors.
- **Governance**
 - **Assembly of Members:** The primary decision-making body comprising representatives from all member countries and organizations.



- **Standing Committee:** Oversees the day-to-day functioning of the alliance.
- **Secretariat:** Provides administrative and technical support to the alliance.

- **Engaging local communities:** Empowering local communities living in proximity to big cat habitats through education, livelihood opportunities, and participation in conservation efforts.

Significance of Big Cat Conservation

- **Ecological Balance:** As apex predators in the food chain, big cats maintain healthy ecosystems by controlling prey populations and preventing herbivore overgrazing.
- **Water Security:** Habitats like the Himalayas, home to snow leopards, are the source of major Asian rivers. Millions of people will have access to clean water if these areas are protected for the benefit of large cats.
- **Climate Change Mitigation:** Big cat habitats are often forested landscapes that store significant amounts of carbon dioxide, contributing to climate change mitigation efforts.
- **Cultural Importance:** Big cats are deeply ingrained in various cultures around the world, with numerous faiths and folktales centered around them. Their preservation safeguards this rich cultural heritage.
- **Economic Benefits:** Big cats attract tourists, generating revenue through ecotourism and supporting local livelihoods.

India’s Conservation Leadership

India has a rich history of big cat conservation, with initiatives like:

- **Project Tiger (1973):** This flagship program led to a significant increase in tiger populations, demonstrating the success of focused conservation efforts.
- **Project Cheetah (2022):** Reintroduction of cheetahs to India from Africa marks a significant step towards restoring ecological balance.
- **Transboundary collaborations:** India cooperates with neighboring countries (Nepal, Bhutan, Bangladesh) on conservation initiatives across shared landscapes.

Way Forward

- **Active participation from all member countries:** Contributing resources, expertise, and implementing national conservation plans aligned with IBCA’s goals.
- **Securing sustainable funding:** Exploring diverse funding sources to ensure long-term financial stability for the alliance’s activities.
- **Effective collaboration and knowledge exchange:** Fostering partnerships between governments, conservation organizations, and scientific communities to share best practices and implement innovative solutions.

Conclusion

By taking these steps, IBCA can play a pivotal role in securing a future where big cats continue to roam free and contribute to the health and well-being of our planet.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Which international organization is actively involved in the conservation of big cats through initiatives such as the Global Tiger Recovery Program?

- (a) World Bank
- (b) International Union for Conservation of Nature (IUCN)
- (c) United Nations Environment Programme (UNEP)
- (d) Wildlife Conservation Society (WCS)

(a) Answer

Descriptive Question

Q. What is International Big Cat Alliance (IBCA)? What is the significance of Big Cat Conservation? [10 Marks] [150 Words]

FIFTH MASS CORAL BLEACHING EVENT

Why in News: The Great Barrier Reef (GBR), the world’s largest coral reef system, is facing a critical threat – its fifth mass bleaching event in just eight years.

Key details

- The GBR, stretching over 2,300 kilometers along Australia’s northeast coast, is a UNESCO World Heritage Site (1981).
- However, it faces significant threats due to repeated bleaching events. These events have caused widespread coral mortality, with some areas experiencing over 50% coral loss.
- The GBR has suffered mass bleaching events in 1998, 2002, 2016, 2017, 2020, and now in 2024. The increasing frequency and severity of these events pose a significant threat to the reef’s health and survival.



Understanding Coral Reefs

- Coral reefs are breathtaking underwater ecosystems teeming with life.
- These vibrant structures are **not single organisms**; rather, they are colonies formed by thousands of **tiny invertebrates called coral polyps**.
- Each polyp has a hard **exoskeleton made of calcium carbonate**, and together they build the reef's intricate formations.
- India boasts its own share of coral reefs, gracing the **Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar Islands, Lakshadweep Islands, and even Malvan in Maharashtra**.

Understanding coral Bleaching

- Coral bleaching occurs when stressed corals expel these algae, turning white and losing their main source of sustenance.
- This can be triggered by factors like rising sea temperatures, pollution, and changes in water chemistry.

BLEACHING IN CORAL REEFS

Causes of Mass Bleaching Events

<p>Climate Change-Induced Warming Rising ocean temperatures are the leading cause of coral bleaching. The current underwater heatwave, particularly intense in the southern GBR, exemplifies this threat.</p>	<p>Increased El Nino Frequency El Nino events, characterized by warmer than average sea surface temperatures, exacerbate bleaching events.</p>	<p>Reduced Water Mixing Lack of wind and currents can lead to stagnant water, allowing for clearer seas and deeper penetration of sunlight, intensifying bleaching.</p>	<p>Infectious Diseases Rising sea temperatures provide fertile ground for harmful bacteria like Vibrio-shiloi. These bacteria can invade coral tissues and disrupt photosynthesis within zooxanthellae, ultimately leading to bleaching.</p>	<p>Ocean Acidification Increased atmospheric carbon dioxide dissolves in oceans, making them more acidic. This hinders coral's ability to build their calcium carbonate skeletons, vital for their body.</p>	<p>Pollution Pollutants like agricultural runoff and industrial waste can harm coral health.</p>	<p>Human Activities Overfishing depletes fish populations that graze on algae, allowing algae to smother corals. Additionally, coral mining for construction materials and the development of coastal areas directly damages and destroys these fragile ecosystems.</p>
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Way Forward

<p>Mitigating Climate Change Global efforts to reduce greenhouse gas emissions are crucial to prevent further ocean warming and acidification.</p>	<p>Sustainable Practices Reducing pollution by treating industrial waste and promoting sustainable agriculture minimizes stress on coral ecosystems.</p>	<p>Marine Protected Areas (MPAs) Establishing and enforcing Marine Protected Areas (MPAs) helps regulate fishing activities and protect critical coral reef habitats.</p>	<p>Community-based Conservation Empowering local communities through ecotourism and coral reef restoration projects fosters a sense of ownership and promotes responsible management.</p>	<p>Continued research on coral resilience, bleaching triggers, and restoration techniques is vital for developing effective conservation strategies.</p>
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Initiatives for Coral Conservation

The fight to protect coral reefs is not without hope. Several global and local initiatives are working towards conservation and restoration:

- **International Collaboration:** The International Coral Reef Initiative (ICRI), the Global Coral Reef Monitoring Network

(GCRMN), and the Global Coral Reef Alliance (GCRA) are promoting international cooperation and knowledge-sharing for coral reef conservation.

- **National Efforts:** In India, the **Ministry of Environment, Forests, and Climate Change (MoEF&CC)** supports research on coral reefs and restoration projects using innovative technologies like **“biorock” technology**.
- **Sustainable Practices:** Promoting sustainable fishing practices, responsible coastal development, and stricter regulations on pollution control are crucial steps to create a healthier environment for coral reefs.

Conclusion

Coral reefs are vital components of marine ecosystems. Protecting them requires a collaborative effort at local, national, and international levels. By addressing the root causes of coral bleaching and implementing sustainable practices, we can ensure the health of these underwater wonders for future generations.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. Consider the following statements regarding ‘Biorock Technology’:

1. It involves passing seawater through a high-voltage electric current.
2. This current causes the seawater to become slightly acidic, which promotes the precipitation of calcium carbonate onto the steel structures.

Which of the above statement(s) is/are correct?

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

(d) Answer

Q2. Consider the following statements regarding Great Barrier Reef (GBR):

1. It lies in the eastern coast of Australia and is surrounded by the Coral Sea.
2. It is a UNESCO World Heritage Site.
3. Snake Island, Lizard island and Pumpkin Island are some the islands present in Great Barrier Reef.

How many of the above statements are correct?

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

(a) (2 only) Answer

Q3. About coral bleaching, take following statements in consideration,

1. Great Barrier Reef along Australia’s coast, is a UNESCO World Heritage Site.
2. It is situated in the Atlantic Ocean.
3. Great Barrier Reef is a marine protected area, managed by the Great Barrier Reef Marine Park Authority of Australia.

How many of the above statements is/are NOT correct?

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

(a) (2 only) Answer

Q4. Coral bleaching is the concern for the ocean biodiversity. Coral bleaching occurs due to,

1. Temperature rise.
2. Pollution of water.
3. Invasive fishes.
4. Acidification of oceans.

How many of the above factors is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All of the above

(d) Answer

Descriptive Question

Q. Identify the key regions within Indian territorial waters that harbor significant coral reefs. Elaborate on the significance of coral reefs in the context of the blue economy, and outline the measures undertaken by the Government of India to safeguard these vital ecosystems. [15 Marks] [250 Words].

UNEA-6 Adopts Resolution on Promoting Sustainable Lifestyles

Why in News: The sixth session of the United Nations Environment Assembly (UNEA-6) adopted a resolution on promoting sustainable lifestyles, co-sponsored by India.

United Nations Environment Assembly (UNEA)

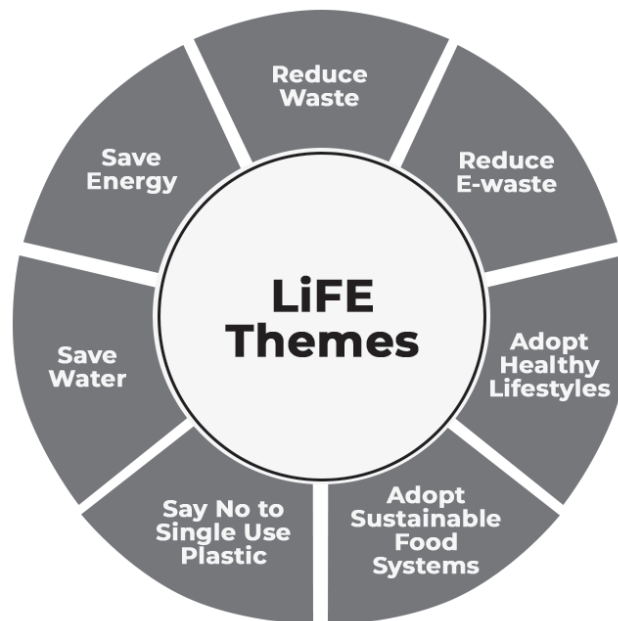
- Established in **2012**, UNEA is the **world’s highest-level decision-making body** on the environment.
- It serves as the governing body of the United Nations Environment Programme (UNEP).
- UNEA meets biennially in **Nairobi, Kenya**.
- UNEA-6, held in February 2024, adopted a Ministerial

Declaration aimed at tackling the **triple planetary crisis of climate change, biodiversity loss, and pollution and waste.**

UNEP spearheads the development and implementation of international agreements known as conventions. These conventions address diverse environmental concerns, including:

- **Conservation:** Minamata Convention (mercury), Convention on Biological Diversity (biodiversity), CITES (endangered species).
- **Pollution Control:** Basel Convention (hazardous waste), Stockholm Convention (persistent organic pollutants), Rotterdam Convention (hazardous chemicals).
- **Climate Change:** Montreal Protocol (ozone layer), Vienna Convention (ozone layer protection), Climate & Clean Air Coalition.
- **Other Conventions:** Convention on Migratory Species, Tehran Convention (marine pollution), Bamako Convention (drought and desertification), Carpathian Convention (mountain ecosystems).

- **Change in Supply:** Enabling industries and markets to adapt to the evolving demand for sustainable products and services.
- **Change in Policy:** Influencing government and industrial policies to support the transition towards a sustainable future.



Key details

- **India’s initiative:** This resolution is an important step forward for India’s “Mission LiFE” (Lifestyle for Environment) initiative, launched at COP26 in Glasgow.
 - Mission LiFE aims to nudge individuals and communities towards adopting sustainable practices in everyday life.
- **The Resolution:** The resolution acknowledges the potential of behavioral changes towards a sustainable future.
 - It also recognizes the ongoing work of the **10-Year Framework of Programmes on Sustainable Consumption and Production (SCP) Patterns**, adopted at **Rio+20 in 2012**.
 - This framework outlines **six key programs** - Public Procurement, Consumer Information, Tourism, Lifestyles and Education, Buildings and Construction, and Food Systems - to promote sustainable consumption and production practices.
- **Focus on Public-Private Collaboration:** The resolution encourages member states to foster collaboration between public and private entities to promote sustainable practices.

Mission LiFE: A Framework for Action: India’s Mission LiFE outlines a **three-pronged approach:**

- **Change in Demand:** Encouraging individuals to adopt simple yet impactful eco-friendly practices in their daily lives.

Limitations of UNEA-6 Resolution on Sustainable Lifestyles

- **Scalability and reach:** Effectively influencing individual behavior **across a vast and diverse population** in world as well as in India can be challenging.
 - Mission LiFE needs robust implementation strategies to ensure widespread adoption.
- **Addressing systemic issues:** While individual actions are crucial, tackling systemic issues like **industrial pollution and unsustainable infrastructure** also requires significant policy and infrastructural changes.
 - Mission LiFE, in its current form, might not adequately address these aspects. Thus, it needs to be supplemented with other initiatives.
- **Limited resources:** The success of Mission LiFE hinges on adequate resources for awareness campaigns, infrastructure development, and capacity building.
 - Sustainable financing mechanisms are necessary to ensure long-term sustainability.

Way Forward

- **Multi-stakeholder partnerships:** Collaboration between governments, civil society, and the private sector is crucial for developing and implementing effective strategies.
- **Knowledge sharing and capacity building:** Sharing best practices and successful initiatives like Mission LiFE can inspire and guide other nations.

- **Innovation and technological advancements:** Investing in research and development of sustainable technologies and infrastructure can make sustainable choices more accessible and affordable.
- **Focus on education and awareness:** Encouraging educational programs and awareness campaigns can empower individuals to make informed decisions and adopt sustainable practices.
- **Data-driven approach:** Regularly collecting and analyzing data on the impact of Mission LiFE can help refine strategies and measure progress.

Conclusion

The UNEA-6 resolution is a significant step towards promoting sustainable lifestyles globally. While challenges exist, initiatives like Mission LiFE provide valuable lessons. By fostering collaboration, knowledge sharing, and innovation, coupled with a focus on awareness and inclusivity, we can pave the way for a more sustainable future for all.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding UNEA-6 resolution:

1. It is resolution on promoting sustainable lifestyles.
2. Resolution is an important step forward for India’s “Mission LiFE” (Lifestyle for Environment) initiative.
3. Resolution recognizes the ongoing work of the 20-Year Framework of Programmes on Sustainable Consumption and Production (SCP) Patterns, adopted at Rio+20 in 2012.

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

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

Answer: (b) (1 and 2 only)

Descriptive Question

Q. What is the UNEA-6 Resolution? Discuss the significance of UNEA-6 Resolution on Sustainable Lifestyles. [10 Marks] [150 words]

WMO’S REPORT CONFIRMS 2023 WAS HOTTEST YEAR

Why in News: The World Meteorological Organization (WMO) reported in its annual State of the Climate Report that the Earth’s global mean surface temperature in 2023 was 1.45 degrees Celsius above the pre-industrial era (1850-1900 average).

Report highlights

- Data from Europe’s **Copernicus Climate Change Service (C3S)** confirms 2023 as the warmest year since global temperature records began in 1850. This surpasses the previous record held by 2016.
- C3S analysis suggests 2023 likely exceeded temperatures experienced during any year in the past 100,000 years.
- This confirmation aligns with preliminary indications from the **(WMO) in November 2023**, which projected 2023 as the warmest year on record based on data through October.
- Methane levels increased to 1,923 parts per billion, **nitrous oxide to 335.8 parts per billion**, and carbon dioxide to 417.9 parts per million.

What is Copernicus Climate Change Service (C3S)?

- A service provided by the **European Union’s Copernicus Programme**, which is aimed at monitoring the Earth’s environment and climate.
- Copernicus Programme is the Earth Observation Programme managed by the **European Space Agency (ESA)** in collaboration with the European Union (EU).
- Sentinels are family of satellites (1A, 1B, 2A, 2B, 3, 4, 5, 6) developed by the ESA, to help in the operational requirements of the Copernicus Programme.
- ESA will share the data from Sentinel satellites free of cost, **with ISRO and vice versa**.

Reasons behind 2023 being the warmest year

- The primary factor driving extreme warming is the continual increase of greenhouse gases in the atmosphere. These gases, like **carbon dioxide and methane, trap solar energy**, causing the planet to retain heat.
- Since the Industrial Revolution, human activities, primarily the burning of **fossil fuels like coal, oil, and gas**, have resulted in unprecedented levels of greenhouse gas emissions.
- Data from 2023 indicated record highs for greenhouse gas concentrations. **Carbon dioxide surpassed 2022** levels by **2.4 parts per million (ppm)**, and methane saw an increase of **11 parts per billion (ppb)**.
- The return of **El Niño in 2023**, characterized by warmer equatorial Pacific Ocean surface waters, further contributed to temperature extremes and record-breaking heat events worldwide and in the oceans.
- These factors combined with the long-term trend of global warming due to greenhouse gases made 2023 the hottest year on record.

World Meteorological Organization (WMO)

- WMO is the United Nations system’s authoritative voice on the state and **behaviour of the Earth’s atmosphere**.
- WMO provides consists **193 Member States and Territories**.

- HQ at **Geneva, Switzerland**, the WMO began operations in 1951.
- WMO regulates and facilitates free and unrestricted exchange of data and information, products, and services in real- or near-real time.
- The World Meteorological Organization (WMO) focuses on meteorology, hydrology, and related geophysical sciences. It fosters collaboration between national weather and water services, advancing their application for societal and economic benefit.
- The WMO plays a key role in international efforts to monitor and protect the climate and environment. Collaborating with UN agencies and national services, it supports environmental conventions, advises governments, and contributes to sustainable development.

Way Forward

Scientists predict **2024 may be even warmer than 2023** due to the persistence of El Niño and continued global warming trends. This raises the possibility of surpassing the **critical 1.5°C** warming threshold for the first time, potentially leading to more extreme weather events. Urgent action to curb greenhouse gas emissions is crucial to prevent such a scenario.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about WMO:

1. WMO is headquartered at Gland, Switzerland.
2. It is a specialized agency of the United Nations.

Which of the above statement(s) is/are correct?

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

Answer: (b)

Descriptive Question

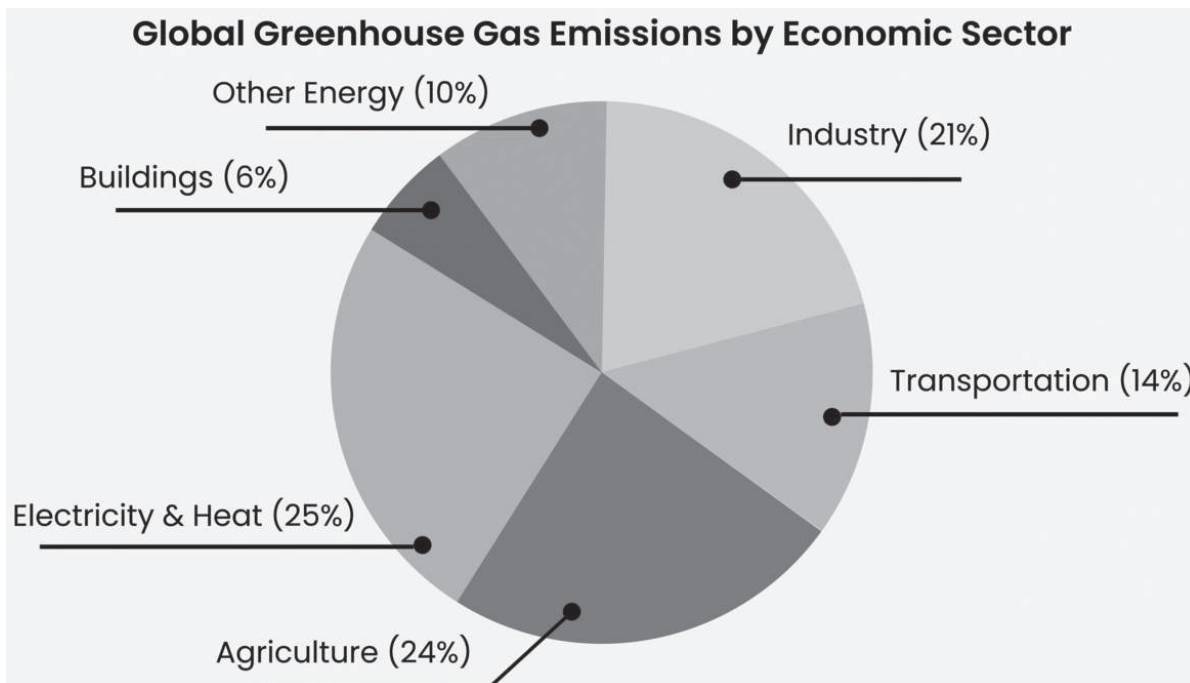
Q. What is the role of European Union’s Copernicus Climate Change Service (C3S) in preparing for the climate change in and around Europe? What are its latest findings? [150 word] [10 marks]

ZERO CARBON BUILDINGS ACTION PLAN (ZCBAP)

Why in News: Nagpur has become the **first city in India** to launch a **Zero-Carbon Buildings Action Plan (ZCBAP)**, aiming to achieve net-zero carbon emissions from buildings by 2050.

Understanding of ZCBAP

- **Goal:** Transform all buildings in Nagpur, both new and existing, into net-zero carbon structures by 2050.
- **Definition:** Net-zero carbon buildings aim to minimize embodied, operational, and end-of-life greenhouse gas (GHG) emissions throughout their lifecycle, while maintaining occupant comfort.

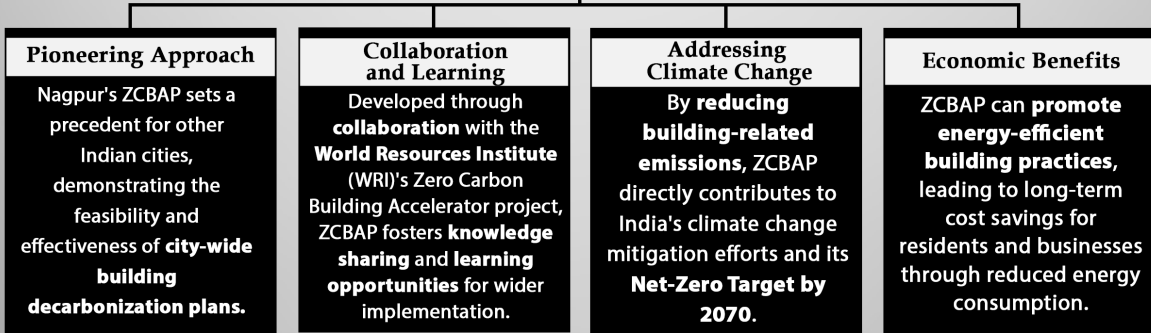


Need for ZCBAP

- **Rapid Growth in Building Sector Emissions:** India’s building sector GHG emissions have doubled from 2000 to 2017 and are projected to continue rising due to rapid urbanization and infrastructure development.
- **High Emissions from Construction Materials:** Industries like steel and cement, crucial for construction, are projected to see a significant increase in emissions over the next few decades.
 - Brick kilns further contribute to air pollution.
- **Alignment with National Policies:** ZCBAP aligns with national frameworks like India’s **Nationally Determined Contributions (NDCs)** and **Long-Term Low-Carbon Development Strategy**, aiming for decarbonization.

India's First City-Specific Zero Carbon Buildings Action Plan (ZCBAP)

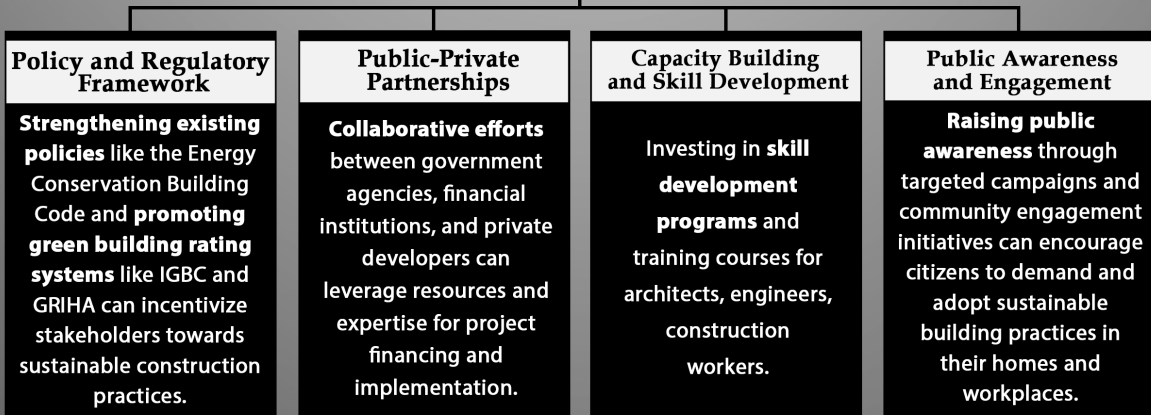
Significance of ZCBAP



Challenges in Implementation

- **Financial Resources**
Achieving **Net-Zero Carbon buildings** requires significant upfront investments in energy-efficient technologies and building retrofits.
- **Technological Capacity**
Implementing ZCBAP necessitates access to **advanced construction technologies** and expertise in areas like **green building design** and **energy-efficient materials**.
- **Public Awareness and Behavior Change**
Shifting mindsets and encouraging widespread adoption of **sustainable building practices** among citizens, developers, and construction workers will require effective **awareness campaigns** and **capacity building** initiatives.

Pathways for Successful Implementation



Building on Existing Frameworks

- **India's Nationally Determined Contributions (NDCs):** These international commitments outline India's plans to reduce GHG emissions and address climate change.
- **India's Long-Term Low-Carbon Development Strategy:** This strategy charts a course for achieving net-zero emissions by 2070.
- **Energy Conservation Building Code, 2017:** This code sets minimum energy efficiency standards for new buildings.
- **Green Building Rating Systems:** These voluntary systems, like IGBC (Indian Green Building Council), GRIHA (Green Rating for Integrated Habitat Assessment), and Eco-Niwas Samhita, provide benchmarks for sustainable building design and construction.

Way Forward

The ZCBAP in Nagpur presents a promising approach to achieving net-zero carbon buildings and fostering sustainable urban development in India. By realizing the full potential of ZCBAP, Nagpur can serve as a model for other Indian cities to embark on their journeys towards a sustainable future.

Expected Questions for UPSC CSE

Prelims MCQ

Q1. Consider the following statements regarding Zero Carbon Buildings Action Plan (ZCBAP):

1. The ZCBAP aims to mitigate GHG (Greenhouse Gas) emissions through strategic choices in building materials, design, construction, management, and deconstruction.
2. Nagpur is the first city to take this initiative.

Which of the above statement(s) is/are correct?

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

Answer: (c)

Q2. Zero Carbon Building Accelerator (ZCBA) project is launched by,

- (a) World Resources Institute (WRI)
 (b) Global Alliance on Health and Pollution (GAHP)

- (c) World Economic Forum
 (d) Asian Development Bank

Answer: (a)

Descriptive Question

Q. What is the necessity of Zero-Carbon Buildings Action Plan (ZCBAP), how it will facilitate the India's aim of BUILDING sustainable cities under United Nations SDG goals. Explain. [15 Marks] [250 Words].

WORLD AIR QUALITY REPORT 2023

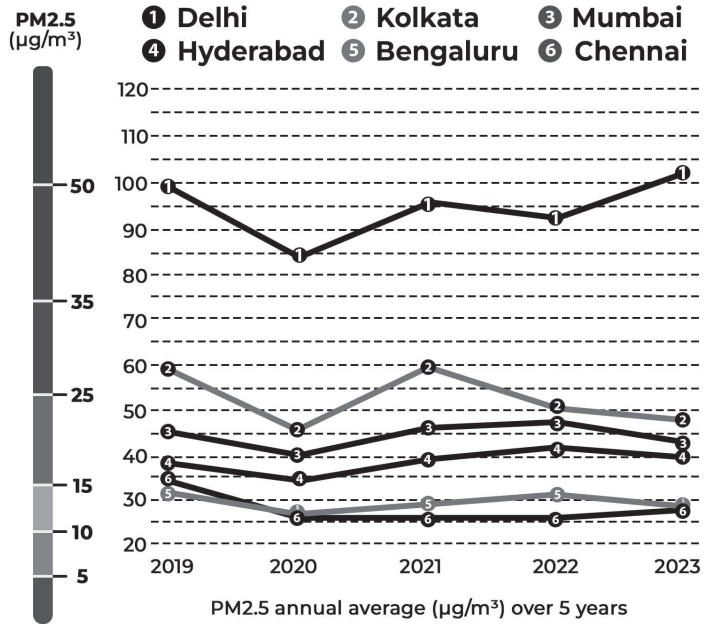
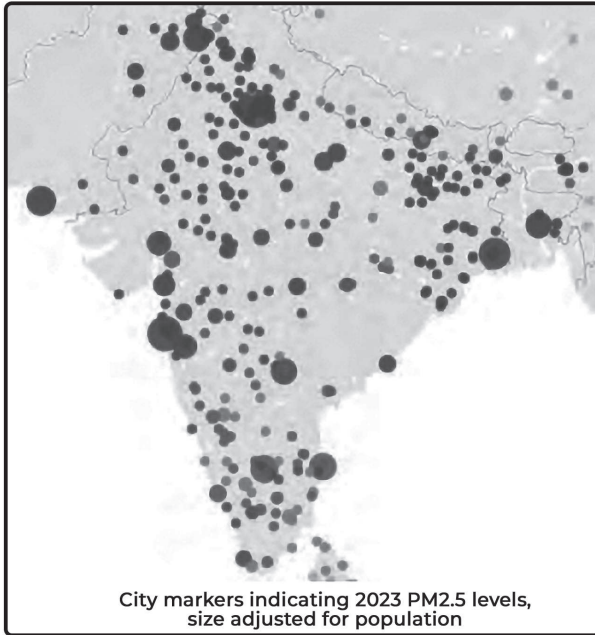
Why in News: India is IQAir's **third most polluted** country in the world, with 42 of its top 50 cities being Indian.

Key details

- The 2023 World Air Quality Report by **Swiss organisation IQAir** ranked India as the third most polluted country globally, with an average annual PM2.5 concentration of **54.4 micrograms per cubic meter. Bangladesh (79.9 µg/m³) and Pakistan (73.7 µg/m³) ranked worse.**
- Air quality in India has shown a year-on-year decline, with **Delhi** retaining its designation as the world's **most polluted capital city** for an unprecedented fourth year in a row.
- Furthermore, **Begusarai in Bihar** has emerged as the **world's most polluted metropolitan area**, surpassing all competitors with an alarmingly high average PM2.5 concentration of **118.9 µg/m³**.

Health Impacts of PM2.5 Pollutants in India (Based on WHO Guidelines)

- **Nearly all (96%)** of the Indian population, approximately 136 million people, are exposed to PM2.5 concentrations exceeding the **World Health Organization's (WHO) recommended safe limit by seven times**. This means the average Indian citizen breathes air with PM2.5 levels seven times higher than what the WHO considers healthy.
- Over two-thirds (66%) of Indian cities surpass the **WHO's annual safe limit of 35 (µg/m3) for PM2.5** concentration. This indicates a widespread issue of severe air pollution in urban areas.
- PM2.5 air pollution, largely attributed to the burning of fossil fuels, is linked to significant health problems. These include increased rates of heart attacks, strokes, and oxidative stress, all of which can have serious health consequences.



Guidelines of WHO regarding Air Quality

- The World Health Organization (WHO) establishes science-based air quality guidelines to protect public health from the detrimental effects of air pollution.
- Regularly updated, these guidelines serve as a vital tool for countries to manage air quality and achieve levels that minimize health risks.
- The most recent update occurred in 2021, superseding the previous guidelines published in 2005.
- The WHO air quality guidelines encompass both particulate matter (PM) and gaseous pollutants. Specific pollutants addressed include **PM_{2.5}, PM₁₀, ozone (O₃), nitrogen dioxide (NO₂), sulphur dioxide (SO₂), and carbon monoxide (CO)**.

Particulate Matter (PM)

- **PM** term encompasses a heterogeneous mixture of **microscopic solid particles and water droplets** suspended within the atmosphere.
- These particles originate from various sources, including **dust, dirt, soot, smoke, and even liquid droplets**.
- **PM₁₀ (Coarse Particles)**: These particles have a diameter of 10 micrometers (µm) or less. Their larger size generally prevents them from entering deep into the lungs.
- **PM_{2.5} (Fine Particles)**: These even finer particles, with a diameter of 2.5 (µm) or less, pose a greater health risk due to their ability to infiltrate the lungs and potentially even the bloodstream.

Expected Questions for UPSC CSE

Prelims MCQs

Q. Consider the following statements about World Air Quality Report 2023:

1. World Air Quality Report is published by Swiss organization IQAir.
2. India is third most polluted country in the world as per the report.

Which of the above statement(s) is/are correct?

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

Answer: (c)

Descriptive Question

Q. What are the health consequences of air pollution. Write about World Health Organization (WHO) air quality guidelines to protect public health from the detrimental effects of air pollution. [50 Marks] [250 words]

BIODEGRADABLE PLASTICS

Why in News: The Environment Ministry has introduced a new set of amendments to **India's Plastic Waste Management (Amendment) Rules, 2024** make it harder for makers of disposable plastic ware to label products as 'biodegradable.'

Key details

- In India, plastic is regulated under **Plastic Waste Management Rules, 2016**.
- **Plastic Waste Management (Amendment) Rules, 2022**, which notified the instructions on **Extended Producer Responsibility (EPR)** for plastic packaging.
- The **Plastic Waste Management (Amendment) Rules, 2024** make it harder for makers of disposable plastic ware to label such products as 'biodegradable', introducing a stipulation that they must not leave **any micro plastics** behind.

About Bio-plastics

- Bioplastics comprise of biodegradable plastic and compostable plastic. They are projected as the two broad kinds of technological fixes to India's burgeoning problem of plastic waste pollution.
- Unlike biodegradation, which is an entirely natural process, composting requires human intervention.
- While traditional plastic is made from petroleum-based raw materials, bioplastics are made from **20 percent or more** of renewable materials.
- Bioplastic containers, utensils, and cups etc. are typically made from materials like corn starch, cellulose, and soy. When properly composted, they break down into non-toxic carbon dioxide, biomass, and water.
- The often-cited advantages of bioplastic are reduced use of fossil fuel resources, a smaller carbon footprint, and faster decomposition. Bioplastic is also less toxic and does not contain **bisphenol A (BPA)**, a hormone disrupter that is often found in traditional plastics.

Types of Bioplastics

There are two main types of bioplastics:

- **PLA** (polylactic acid) is typically made from the sugars in corn starch, cassava or sugarcane. It is biodegradable, carbon-neutral and **edible**.
- **PHA** (polyhydroxyalkanoate) is made by microorganisms, sometimes genetically engineered, that produce plastic from organic materials. Because it is biodegradable and will not harm living tissue, PHA is often used for **medical applications** such as sutures, slings, bone plates and skin substitutes; it is also used for single-use food packaging.

About India's Plastic Waste Management (Amendment) Rules, 2024

- The Rules define biodegradable plastics as not only capable of "Degradation by biological processes in

specific environment such as soil, landfill" but also as materials that do not leave "any micro plastics"

- Microplastics are defined as **plastic particles obtained from breakdown of larger plastic material** between the dimensions of 1 to 1000 micrometres.
- The rules further expand the definition of Importer of Plastics to include any person who imports any material which contains plastic particles and not just only plastic packaging material.
- It also provides for the manufacturer for requiring a compulsory certificate from CPCB, before they sell their products manufactured from biodegradable or compostable plastics.
 - **Primary Micro plastics:** They are tiny particles **designed for commercial use and microfibers** shed from clothing and other textiles. E.g. **microbeads** found in personal care products, plastic pellets and plastic fibres.
 - **Secondary Micro plastics:** They are **formed from the breakdown of larger plastics** such as water bottles.

Expected Questions for UPSC CSE Prelims

Prelims MCQ

Q. Consider the following statements regarding 'biodegradable plastics':

1. PLA (polylactic acid) is a plastic typically made from the sugars in corn starch, cassava or sugarcane. It is biodegradable, carbon-neutral and edible.
2. PHA (polyhydroxyalkanoate) plastic is a biodegradable and made from crude oil.

Which of the following statement(s) is/are correct?

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

Answer: (a)

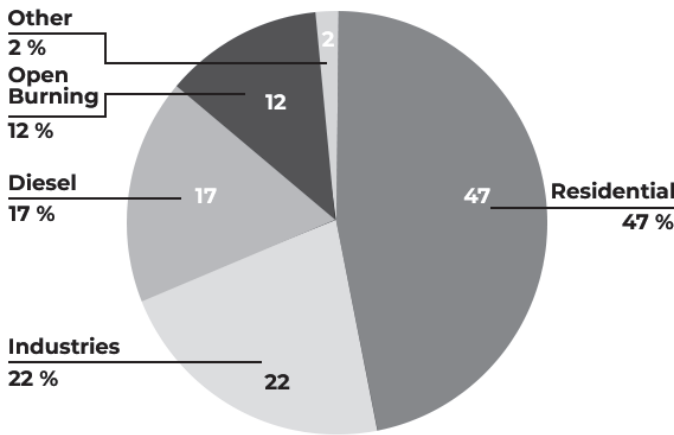
Descriptive Question

Q. What is bioplastic? How is it better than single-use plastics and mention the impacts of bioplastic. [10 Marks] [150 Words]

BLACK CARBON

Why in News: At the **COP26** climate talks in Glasgow in November 2021, India pledged to achieve **net-zero emissions by 2070**, positioning itself as a frontrunner in the race to **carbon neutrality**. In this context, emissions of black carbon need adequate attention.

Sources of Black Carbon Emission



About Black Carbon

- Black carbon is the **dark, sooty material** emitted alongside other pollutants when biomass and fossil fuels are **not**

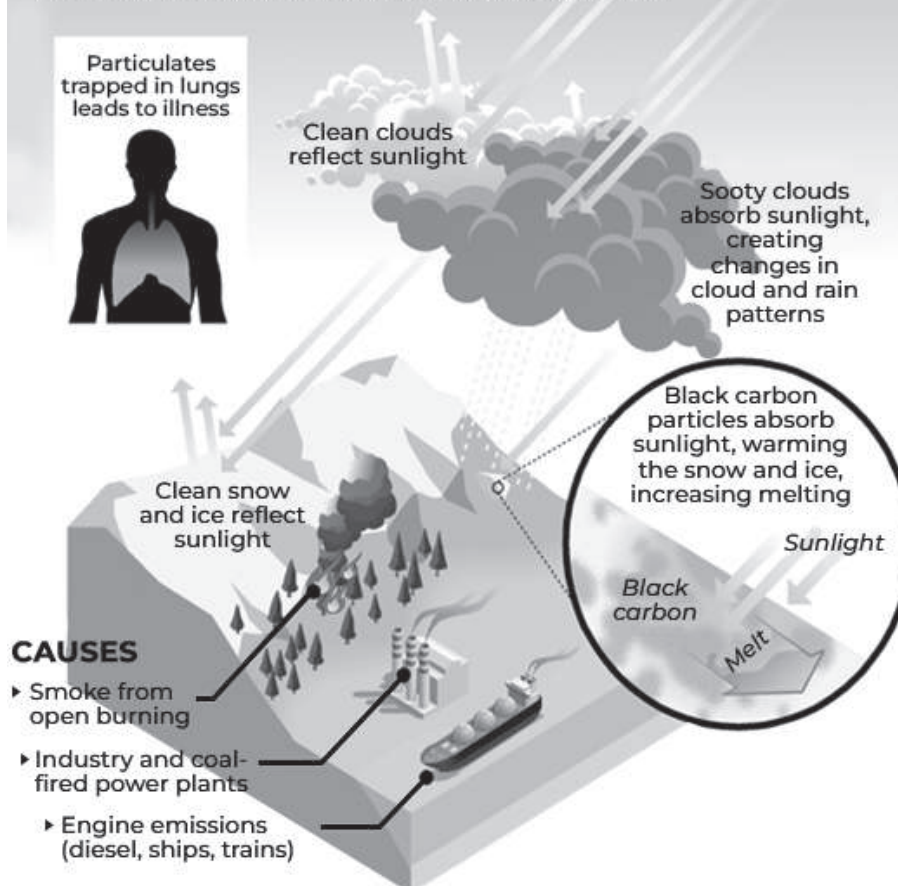
fully combusted. It is a component of **fine particulate matter** of the size 2.5 µm.

- Most black carbon emissions in India arise from burning biomass, such as cow dung or straw, in traditional cook stoves.
- Effects of Black Carbon emission:**
 - It contributes to **global warming**. Black Carbon (BC) is a **short-lived pollutant that is the second-largest contributor** to warming the planet behind **carbon dioxide (CO₂)**.
 - Black carbon absorbs solar energy, it warms the atmosphere. When it falls to earth with precipitation, it **darkens the surface of snow and ice, reducing their albedo** (the reflecting power of a surface), warming the snow, and hastening melting.
 - It poses severe health risks. Studies have found a direct link between exposure to black carbon and a **higher risk of heart disease, birth complications, and premature death**.

Black Carbon's Arctic Impact

Black carbon, commonly known as soot, is a particulate pollutant that negatively affects both the climate and human health. Soot particles suspended in the atmosphere absorb sunlight, adding to global warming. And when it collects on ice and snow, it hastens melting.

NEGATIVE IMPACTS OF BLACK CARBON



Other Types of Carbon

Brown Carbon: Brown carbon is brown smoke released by the combustion of **organic matter**.

Blue Carbon: It is the carbon captured by the world's oceans and coastal ecosystems. It is captured by living organisms in oceans and is stored in the form of aquatic biomass. Seagrasses, mangroves, and marshes are types of vegetated coastal blue carbon ecosystems.

Green Carbon: It is the carbon captured into **terrestrial plant biomass** in photosynthesis and stored in the plants and soil of natural ecosystems and is a vital part of the global carbon cycle. Green carbon reflects the carbon sequestered by land ecosystems and incorporates carbon in soils and within biomass such as trees in forests.

Government Efforts

- Pradhan Mantri Ujjwala Yojana (PMUY):** Launched in 2016, the primary objective was to make clean cooking fuel i.e. liquefied petroleum gas (LPG) available to rural and poor households and reduce their dependence on traditional cooking fuels.
- Under the **Indian Space Research Organization (ISRO) Geosphere Biosphere Programme**, the ISRO operates a network of aerosol observatories and black carbon mass concentration is one of the parameters being measured.

- **BS VI Emission Norms:** Leapfrogging from BS-IV to **BS-VI norms** for fuel and vehicles from 1st April, 2020.
- **Introducing Cleaner Fuels** like gaseous fuel (CNG, LPG etc.), ethanol blending.
- **SATAT ("Sustainable Alternative Towards Affordable Transportation") Scheme** has been launched to set up 5000 **Compressed Bio-Gas (CBG)** production plants and make CBG available in the market for use.
- **Managing Crop Residue:** Agricultural machines and equipment for in-situ crop residue management in Punjab, Haryana, Uttar Pradesh and NCT of Delhi are promoted under the Central Sector Scheme on **Promoting Agricultural Mechanization** for in-situ Crop Residue Management with 50% subsidy to individual farmers and 80% subsidy to the establishment of Custom Hiring Centres.
- **National Clean Air Programme** is a long-term, time-bound, national-level strategy to tackle the air pollution problem across the country in a comprehensive manner. The Centre has set a new target of a **40% reduction in particulate matter concentration in cities covered under the scheme by 2026**, updating the earlier goal of 20 to 30% reduction by 2024.
- **City specific Clean Air Action Plans** with time bound targets to control city specific air polluting sources have been rolled out in 131 cities identified by CPCB (Central Pollution Control Board)
- **Faster Adoption and Manufacturing of Electric Vehicles (FAME) Scheme** to incentivise electric and hybrid vehicles by offering subsidies and charging infrastructure.

Conclusion

Recent estimates have indicated that mitigating residential emissions will avoid **more than 6.1 lakh deaths** per year from indoor exposure to air pollution. Hence, prioritising black carbon reduction can help India become a global leader in **addressing regional health concerns** as well as help India meet its **Sustainability Development Goal** of providing affordable clean energy to everyone and contributing to global climate mitigation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Black Carbon:

1. Black Carbon decreases the albedo of snow.
2. It is a component of PM2.5
3. It cannot enter the bloodstream, but can be inhaled into lungs.

How many of the above statement(s) is/are correct?

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

Answer: (b) (1 and 2 only)

Descriptive Question

Q. What is Black Carbon. What are some of the Government Initiatives to curb the negative impacts of Black Carbon? [10 Marks] [150 Words]

ASIAN ELEPHANTS MOURN THEIR DEAD BY BURYING CALVES

Why in News: A new study reveals Asian elephants bury their dead calves, a first for this species.

Key details

- Researchers documented five cases in India, where **herds carried deceased calves and placed them in trenches**, possibly for mourning or hiding remains from scavengers.
- This behaviour, **previously known only in African elephants**, sheds light on the complex social lives of these intelligent animals.
- India is home to a **staggering 60% of the world's wild Asian elephants**, with an estimated population of 29,964 (2017 census by Project Elephant).
- **Karnataka leads the pack with the highest number of elephants**, followed by Assam and Kerala.

Initiatives taken by Government of India

- **Project Elephant:** Launched in 1991, this government program tracks elephant populations and creates protected areas.
- **Elephant Reserves:** These designated zones combine forests, parks, and corridors to provide safe elephant habitats. As of 2022, India has 33 Elephant Reserves.
- **Elephant Corridors:** A network of mapped corridors identified by Project Elephant to ensure safe elephant movement and reduce conflict with humans.
 - **India has a total of 88 elephant corridors distributed across the country.** As given breakdown of the distribution:
- **Gaj Gaurav Awards:** Recognize individuals and groups making significant contributions to elephant conservation.
- **Monitoring of Illegal Killing of Elephants (MIKE) Programme:** Monitors illegal elephant killings to help authorities fight poaching. Ten sites across India participate in this international program.
- **Coordination Committee:** The Union Environment Ministry set up a permanent coordination committee involving the Ministry of Railways and the Environment Ministry to prevent elephant deaths on railway tracks using AI technology.

Asian Elephants vs African Elephants

Asian Elephant



- ★ The **Asian elephant** is the largest land mammal on the Asian continent.
- ★ There are **three kinds** of Asian Elephants: **Indian, Sumatran, and Sri Lankan**. The Indian Elephant is the most common.

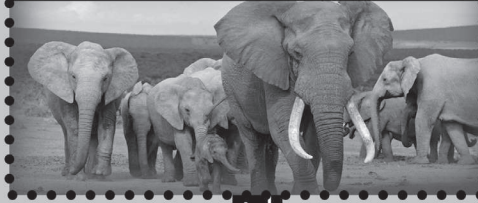
Characteristics

- ★ **Habitat**
In India, there are four groups of Asian Elephants, living in different areas across the country. i.e., south, north, central and north-east of India.
- ▶▶ **Forest Homes**
They live in many countries across South and Southeast Asia, in forests, grasslands, and even dry areas.
- ★ **Family Matters**
Just like African Elephants, Asian Elephants live in close-knit groups with a wise old female leader, the matriarch.
- ★ **Tusk**
Only some male Asian elephants have tusks.

Conservation Status

- ★ **IUCN Red List:** Endangered
- ★ **CITES:** Appendix I.
- ★ **Wildlife (Protection) Act, 1972:** Schedule I.

African Elephant



- ★ **African elephants** are the largest animals walking on the Earth.
- ★ There are two species of African elephants—the **Savanna (or Bush)** elephant and the **Forest** elephant.

Characteristics

- ★ **Habitat**
African Elephants are the biggest land animals. They live in two main areas.
- ▶▶ **Savannas**
These open plains in sub-Saharan Africa are home to the larger African Bush Elephants, with their giant ears that look like the continent of Africa.
- ▶▶ **Rainforests**
Deep in the forests of Central and West Africa live the smaller African Forest Elephants.
- ★ **Family First**
Elephants live in groups led by the oldest female, called the matriarch.
- ★ **Tusk**
Both male and female African elephants grow tusks.

Conservation Status

- ★ **IUCN Red List**
 - ▶▶ **African Savanna's** - Endangered
 - ▶▶ **Forest Elephants** - Critically Endangered

- **Seed Bombs for Elephant Food Enrichment:** Odisha's Athagarh Forest Division has initiated the practice of casting seed balls (or bombs) in reserve forest areas to enrich food stock for wild elephants and mitigate human-elephant conflicts.

Central India	20
Northern West Bengal	14
North-Eastern India	22

Region	Number of Corridors
South India	20
North-Western India	12

Conclusion

This outstanding discovery reveals a complex social behaviour in Asian elephants, suggesting **deep emotional bonds** and a **sophisticated understanding of death**.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. Consider the following statements regarding Asian Elephants:

1. The ears of Asian Elephants are larger than African Elephants.
2. Kerala has the maximum number of Elephants followed by Tamil Nadu and Assam in India.
3. The theme for World Elephant Day 2023 is "Ending the Illegal Wildlife Trade"

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

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

Answer: (a) (3 only)

Q2. How many of the following pair/s are correctly matched?

Species	IUCN status
1. Asian Elephant	: Endangered
2. African Savanna Elephant	: Critically Endangered
3. African Forest Elephant	: Endangered

How many of the above pairs are correct?

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

Answer: (a) (1 Only)

Descriptive Question

Q. "Elephants are both an important animal and an important part of India's natural heritage." Explain. [10 Marks] [150 Words]

HANGUL

Why in News The previous autumn saw one of the healthiest mating seasons for the hangul, a critically endangered species of deer known for its sensitivity and shyness in Kashmir. This is an indication that the population is growing.

Key details

- The number of hangul people could surpass 300 this spring for the first time in over thirty years.
- The male-to-female ratio is currently 19.2 males per 100 females, much below the ideal.

HANGUL

- The Hangul, or Kashmir stag, is an indigenous species of deer found in the Indian state of Jammu and Kashmir.
- Known as the official animal of Jammu and Kashmir, the Hangul is mostly found in Dachigam National Park, where it thrives at an altitude of 3,035 meters.
- **Scientific Name:** *Cervus hanglu* is the scientific name for Hangul.
- The lush, temperate forests of the Kashmir Valley and its environs are home to the Hangul.
- Elevations between 1,700 and 3,000 meters above sea level are where they can be found.

Conservation Status

IUCN: Critically Endangered

CITES: Appendix I

Wildlife (Protection) Act, 1972: Schedule I

About Project Hangul

- There were roughly 5000 hangul deer at the start of the 20th century.
- The deterioration of habitat, excessive grazing by domestic cattle, and poaching put the hangul deer in jeopardy. Their numbers decreased as a result, reaching only 150 by 1970.

- The IUCN, the WWF, and the erstwhile state of Jammu Kashmir launched an initiative to safeguard hangul wildlife in order to save the Kashmir red stag. Later on, Project Hangul was the name given to it.
- Project Hangul's implementation produced notable results, including a significant population increase to over 340 by 1980.
- This coordinated effort was crucial in preserving and reviving the Hangul population and preventing the subspecies from becoming endangered.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about Hangul:

1. It is found primarily in the Dachigam National Park.
2. It is the only surviving species of Asiatic red deer.

Which of the above statement(s) is/are correct?

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

Answer: (c)

Descriptive Question

Q. Discuss the significance of Hangul for Himalayan ecosystem. Describe the steps taken for its conservation. [10 Marks] [150 words]

GOLDEN LANGUR

Why in News: Around 7,400 golden langurs are estimated to exist in India, according to a thorough population assessment conducted by various organizations.

Key details

- The study covered the **Manas Biosphere Reserve** and **fragmented forests in western Assam**, the **entire territory of the Golden Langur (Trachypithecus geei)**.
- This method is **relatively simple and cost-effective**.
- The study showed an **unstable situation in fragmented habitats**, which was mainly due to the **absence of non-reproducing male groups**.

GOLDEN LANGUR

Physical Description

- ▶ Golden langurs are easily identified by their **fur color**, which also serves as their given name.
- ▶ They have **black faces, hairless beards**, and **vary in color** from dark golden chestnut to creamy buff.
- ▶ **Seasons affect fur color**, and juveniles have different tints.



Geographical Range

- ▶ Golden langurs only **inhabit Assam (India) and neighboring Bhutan**.
- ▶ Their territory is bounded to the **north by the foothills of Bhutan**, to the **east by the Manas River**, to the **west by the Sankosh River**, and to the **south by the Brahmaputra River**.

Habitat

Golden langurs reside in **riverine areas, savannas, and moist evergreen and tropical deciduous forests** in Assam and Bhutan.

Reasons for decline in habitat

1 Reduction in **geographical extent and fragmentation of forests** as a result of conflicts between humans and animals.

3 More pronounced **human traces** inside the species' habitat.

2 **Absence of conservation initiatives**, with the exception of a few locals' and non-governmental organizations' efforts.

4 The **risk of inbreeding among golden langurs** has grown due to obstacles like cables and holes in the forest caused by deforestation.

Conservation Status

1 Wildlife (Protection) Act, 1972 - **Schedule-I**

2 IUCN List of Threatened Species - **Endangered**

3 CITES - **Appendix I**

Expected Questions for UPSC CSE

Prelims MCQs

Q1. Consider the following statements regarding Golden Langurs:

1. They are the new world monkeys endemic to India and Bhutan.
2. The colour of their fur changes according to changing seasons.
3. They are nocturnal in habit.

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

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

Answer: (a) (2 only)

Q2. Consider the following statements about Golden Langur which is recently in news,

- 1 It is endemic to western Assam and Bhutan.
- 2 It is included in schedule 1 of Wildlife Protection Act, 1972.

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
- (c) Answer

Descriptive Question

Q. What are the threats faced by the Golden Langurs in recent times? Discuss some of the conservation efforts to protect them. [10 Marks] [150 Words]

GREAT INDIAN BUSTARD

GREAT INDIAN BUSTARD

Why in News?

Recently, Supreme Court constituted an expert committee to balance the conservation and protection of the critically endangered Great Indian Bustard population.

Key Details

- ▶ The critically endangered Great Indian bustard is facing a new threat as windmills and solar energy panels become increasingly prevalent in the desert.
- ▶ They frequently collide with high-tension lines, resulting in their demise.
- ▶ According to the IUCN's 2021 report, the species is on the verge of extinction, with only 50 to 249 individuals remaining.
- ▶ The Great Indian Bustard used to range across the Indian subcontinent, but currently only covers 10% of it.



Overview

- The Great Indian Bustard is the largest of the four bustard species found in India.
- The remaining three are MacQueen's bustard, smaller florican, & Bengal florican.
- As terrestrial birds, they spend the majority of their time on the ground, with occasional flights to get from one section of their habitat to another.

Location

- This bird is found mainly in Rajasthan and Gujarat.
- There are minor populations of them in Andhra Pradesh, Karnataka, and Maharashtra.
- Great Indian Bustard is also found in parts of Pakistan.

IUCN Status:
Critically Endangered

Wildlife (Protection) Act, 1972:
Schedule I

CONSERVATION STATUS

Conservation on Migratory Species (CMS):
Appendix I

CITES:
Appendix I

Threats to Great Indian Bustard

The main threat to this species is **hunting**, which is still common in Pakistan.

This is then succeeded by poaching outside Protected Areas, collisions with high-tension electric wires, and fast-moving cars.

Other risks include **habitat loss and alteration caused by massive agricultural growth and mechanized farming, infrastructure development such as irrigation, highways, and electric poles, as well as mining and industrialization.**

Conclusion

The 13th CoP of Bonn Convention of Migratory Species, held in 2020 in Gandhinagar (Mascot: Great Indian Bustard), emphasized and appreciated the work done by CMS Energy Task Force, which was created in 2015, with the aim to minimising negative impacts of energy developments such as power transmission lines on migratory species, especially GIB. It works by retrofitting of renewable energy technologies and powerlines.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about Great Indian Bustard:

1. It eats grass seeds as well as insects.
2. Its IUCN status is endangered.
3. These birds, sharp frontal vision but poor lateral vision.
4. They live in the arid grasslands and scrublands of the Desert National Park (DNP) in Rajasthan.

How many of the above statement(s) is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All of the above

(b) Answer

Descriptive Question

Q. The Great Indian Bustard has been facing an existential threat. Mention some initiatives launched for its protection. [10 Marks] [150 Words]

BUGUN LIOCICHLA

BUGUN LIOCICHLA



Why in News? Recently, by giving 1,470 hectares of forest land to the state forest department for the protection of the critically endangered songbird Bugun Liocichla, the Bugun tribe in Arunachal Pradesh has shown excellent conservation efforts.

Key Details

- The name of the bird honours the efforts made by the Bugun community in Singchung village, West Kameng district, to preserve the local forest and fauna.
- It is the first bird to be found since India's independence in 1947.

Conservation Status

IUCN :
Critically
Endangered

**Wildlife
(Protection) Act
1972:**
Schedule I

About Bugun Liocichla

Only 20 cm in length, its olive-grey plumage and black cap accentuate this little babbler.

It is unique to the landscape of the Eaglenest Wildlife Sanctuary and cannot be found anywhere else in the globe.

There have only been 14 recorded sightings of the extremely endangered bird species in the Braiduah village located within the Singchung subdivision.

The Eaglenest Wildlife Sanctuary and the reserve are next to one other.

Threats to Bugun Liocichla

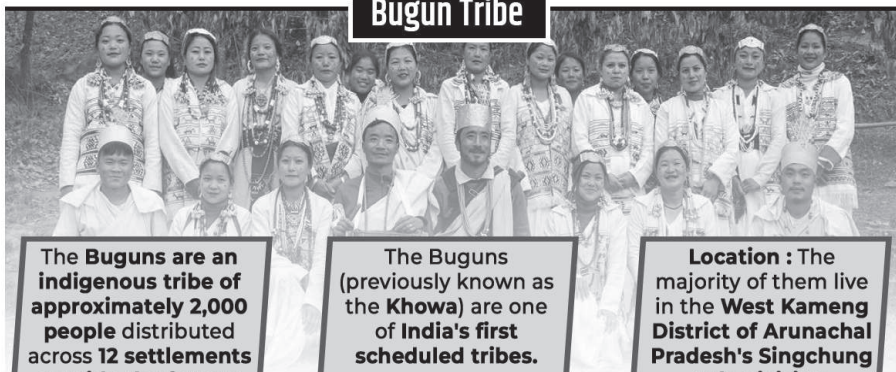
The loss and fragmentation of their habitat are the biggest challenges to the survival of the Bugun Liocichla.

The species is only found in a tiny region of Arunachal Pradesh, India, and human activities including logging, agriculture, & infrastructure development are putting pressure on the habitat.

Potential dangers have also been linked to hunting and trapping for the pet trade.

Future threats to this species could come from climate change, which could have an impact on its habitat and food sources.

Bugun Tribe



The Buguns are an indigenous tribe of approximately 2,000 people distributed across 12 settlements outside the forests of Eaglenest Wildlife Sanctuary.

The Buguns (previously known as the Khowa) are one of India's first scheduled tribes.

Location : The majority of them live in the West Kameng District of Arunachal Pradesh's Singchung Sub-Division.

It is among the smallest tribal communities in India.

The Bugun people are well-known for their farming, building of bamboo homes, and extraction of oil from Chiblem wood.

They speak a language called Kho-Bwa, which gets its name from the terms "Kho", which means fire, and "Bwa", which means water.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following pairs about tribe and their coexistence with wildlife:

Bugun	Bugun Liocichla
Maldhari	Indian wild ass
Muthuvan	Lion tailed macaque
Bishnoi	Great Indian Bustard

How many of the above pairs are correct?

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

ANSWER: (c) (1) 2 and 4 only

Descriptive Question

Q. What are the main threats to Bugun Liocichla? Discuss the conservation efforts done in order to protect them. [150 Words] [10 Marks]

COFFEE

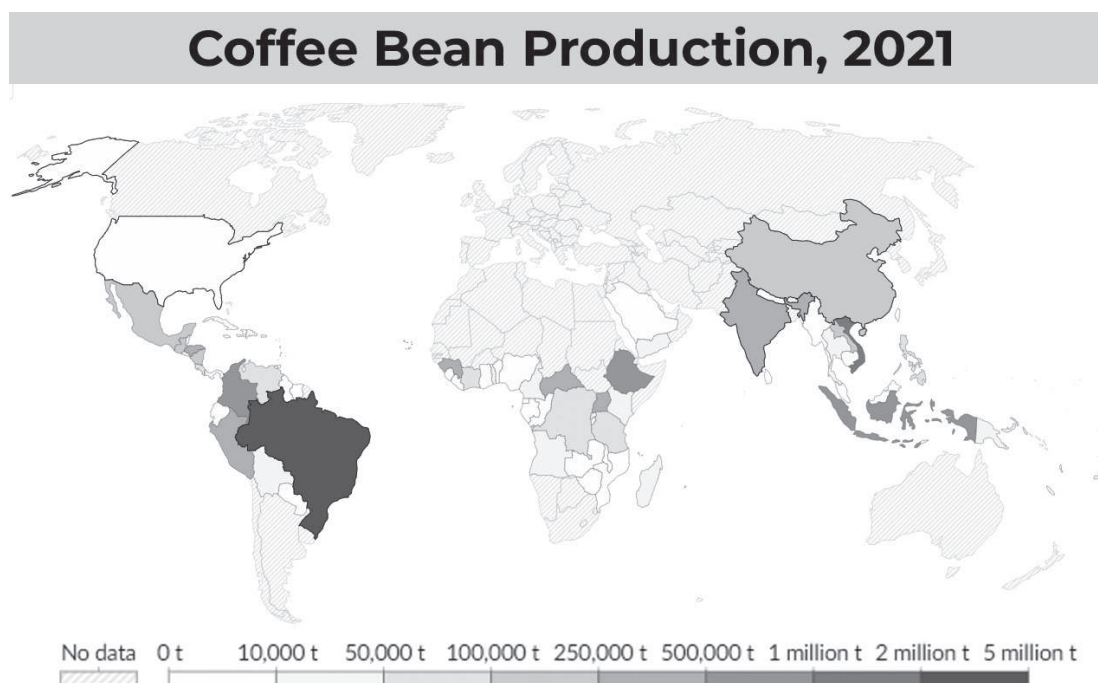
Why in News: Brazil is expected to post its third annual rise in coffee production this year, a rare sequence seen only seven times in 144 years of coffee history in the world's largest grower and exporter of the beans.

Climatic Conditions required for Coffee Production

- Hot and humid climate
- Temperature: 15°C to 28 °C
- Rainfall: 150 to 250 cm.
- Soil: Well-drained, loamy soil containing a good deal of humus and minerals like iron and calcium are ideal for coffee cultivation.
- It is generally grown under shady trees.
- Dry weather is necessary at the time of ripening of the berries.
- It is grown on hill slopes at elevations from 600 to 1,600 metres above sea level.

About Coffee Production in World

- **Brazil** is the largest producer of coffee in the world.
- It is followed by Vietnam, Colombia, Indonesia, Ethiopia, Honduras, **India**, Mexico etc.



About Coffee Production in India

- India is the **third-largest** producer and exporter of coffee in Asia, and the **seventh-largest producer and fifth-largest exporter of coffee in the world**. The country accounts for **6 per cent** (2022) of the global coffee production.
- India produces two types of coffee: **Arabica** and **Robusta**. Arabica has a higher market value than Robusta coffee due to its mild aromatic flavour. Robusta coffee is mainly used in making various blends due to its strong flavour. **Robusta** is a **majorly manufactured** coffee with a share of **72%** of the total production of Indian coffee.
- **Karnataka** is the largest producer accounting for about **70%** of the total coffee production in India. **Kerala** is the second-largest producer of coffee but accounts only for about **23%** of the total production. **Tamil Nadu** is the third-largest producer with **6%** of India's total coffee production
- India exports coffee to more than 50 countries around the world. Italy, Germany, Belgium, and the Russian Federation are the largest importers of coffee from India, with an average total share of about 45%.

Efforts by Government of India to boost Coffee production

- **Coffee Board of India**
 - Established in 1942 under Ministry of Commerce and Industry by Coffee Act, 1942
 - Promotes sales and consumption in the domestic and international markets, conducts research and financial assistance etc.

Coffee Development programmes

- The Government supports the non-traditional coffee growing regions under CDPs.
- Also, under National Policy of Tribal Development, coffee cultivation is being encouraged in non-traditional areas such as Andhra Pradesh, Odisha, Maharashtra, the north-eastern states and Andaman and Nicobar Islands.

Expected Questions for UPSC CSE

Prelim MCQ

- Q. Which of the following is the primary species of coffee cultivated globally for commercial production?
- (a) Coffea arabica (b) Coffea canephora (Robusta)
 (c) Coffea liberica (d) Coffea excelsa

Answer: (a)

Descriptive Question

- Q. What are the climatic conditions required for the production of Coffee? Discuss some efforts taken by Government of India to boost its production. [15 marks][250 Words]

REYKJANES PENINSULA

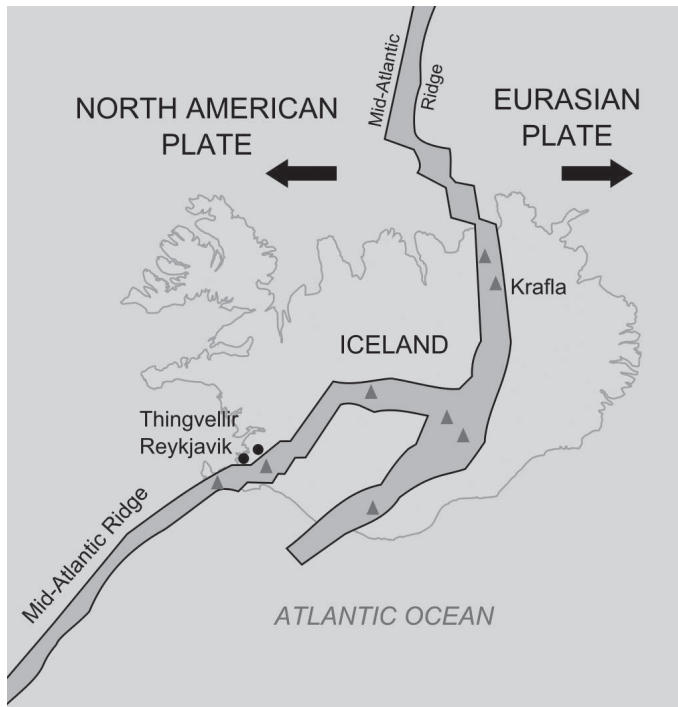
Why in News: Recently, a state of emergency is declared in Southern Iceland as a volcano in Reykjanes Peninsula has erupted in Iceland

Key details

- In Iceland's **Reykjanes Peninsula**, a volcano erupted once again, the fourth time since December.
- On the Reykjanes Peninsula, between the **Stóra-Skógfell and Hagafell mountains**, an approximately **three-kilometer-long crack in the earth** was opened by the eruption, according to **Iceland's Meteorological Office**.

Iceland: The Land of Fire and Ice

- As Iceland is situated on the **Mid-Atlantic Ridge** in the **North Atlantic Ocean**, where the **Eurasian and North American plates** are separating, it frequently suffers volcanic activity.
- **Volcanic rift zones** are created by this action, which **pulls and fractures the Earth's crust**, allowing **molten rock or magma** to rise and occasionally erupt as **lava or ash**.
- **Iceland is also located over a hot zone or hotspot**, which adds to the **region's elevated volcanic activity**.



- Having **33 active volcanoes**, Iceland has seen over **180 eruptions in the last 1,000 years**.
- **Eyjafjallajökull** is among the **most well-known volcanoes in Iceland**. When this volcano **erupted in 2010**, a **tremendous cloud of ash** stretched over Europe.
- Other well-known volcanoes in the **Fagradalsfjall system** are **Litli-Hrútur, Hekla, Grímsvötn, and Hóluhraun**.

About Volcanism

- A **volcano** is a **fissure in the crust of the earth** through which eruptions can release **gases, ash, steam, molten rock, and other things**.
- It is one common example of an **endogenic process**.
- Different land forms, such as a **plateau (if the volcano is not explosive) or a mountain (if the volcano is explosive in nature)**, might arise depending on the explosive nature of the volcano.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about Iceland:

1. It is located on a hotspot.
2. It is located on Pacific Ring of Fire

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) [1 only]

Descriptive Question

Q. Describe various types of volcanos. Give examples of some regions recently in news for volcano eruption. [10 Marks] [150 words]

CYCLONE STORM MEGAN

Why in News: Australia's northern coast experiences rain and wind as the cyclone weakens to a tropical low.

Key details

- **Landfall and Track:** A tropical cyclone hit land near Borroloola on the **southwestern side of the Gulf of Carpentaria**, a remote town in the Northern Territory, after impacting island communities for several days. The storm is expected to continue westward through the inland parts of the Northern Territory.
- **Weather Forecast:** The Bureau of Meteorology predicts strong winds with gusts up to 130 kilometers per hour and significant rainfall exceeding 200 millimeters within 24 hours for Borroloola.
- **Evacuation and Sheltering:** The planned evacuation of residents in Borroloola was cancelled due to bad weather conditions. Residents are advised to seek shelter in

sturdy buildings that can withstand the cyclone's strong winds.

- **Recovery Efforts:** The Australian Defence Force is prepared to assist with recovery efforts after the cyclone passes.

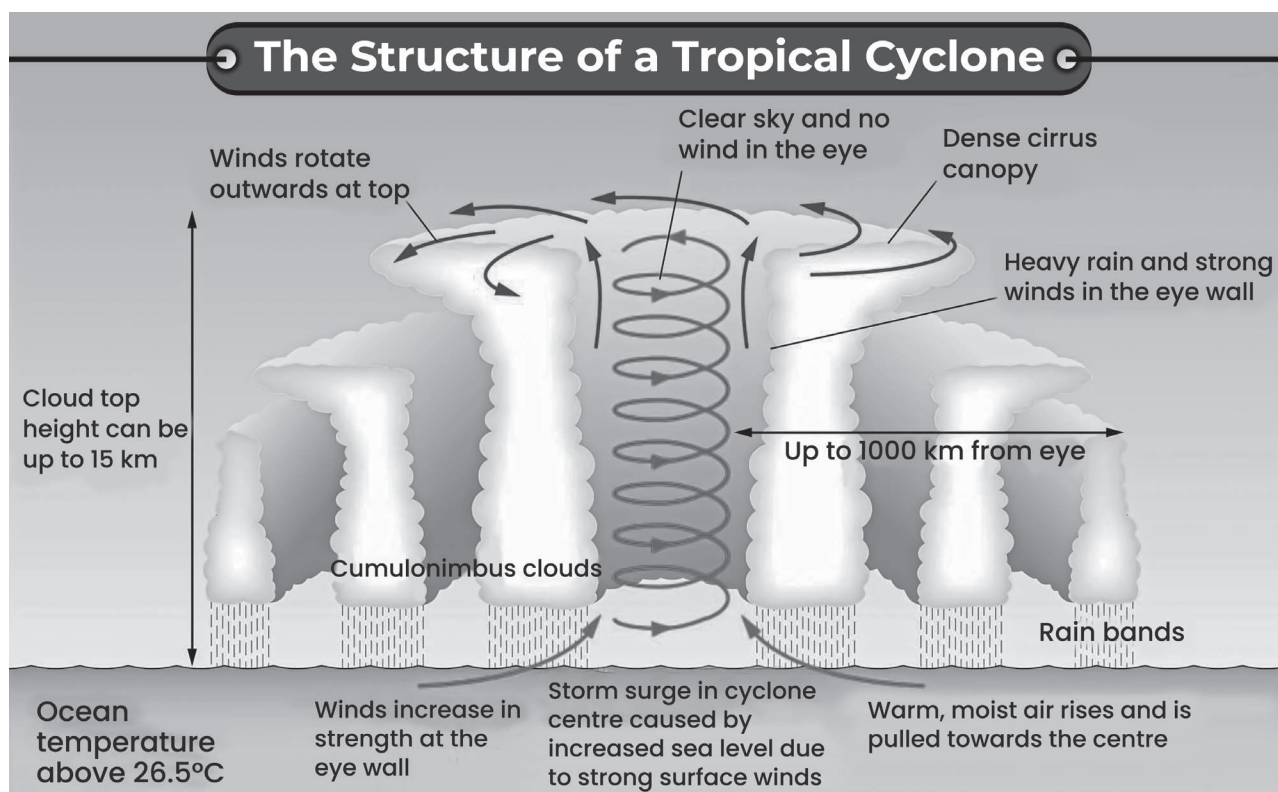
Gulf of Carpentaria

- Australia's northern region contains the rectangular Gulf of Carpentaria. Situated **between Australia and New Guinea**, the Arafura Sea encircles this vast but shallow body of water.
- The Gulf Country, south of the Cape York Peninsula in Queensland, is known for its vast **savanna woodlands**, including the world's largest - the Carpentaria tropical savanna.
- The Gulf region is renowned for prawn **fishing and zinc, manganese, lead, and silver resources**, primarily found in the McArthur River mine and Century Zinc on Queensland's coast.

What is Cyclone

- **Cyclones** are defined as atmospheric **disturbances with low pressure**, characterized by rapid and destructive air circulation, often accompanied by violent storms and bad weather. Air circulation rotates anticlockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
- Cyclones are categorized into two primary types: (i) Extratropical cyclones (temperate cyclones) and (ii) Tropical cyclones.

- **Temperate cyclones:** These cyclonic systems primarily occur within temperate zones and high-latitude regions. Notably, their origins can be traced back to the Polar Regions.
- Temperate cyclones, characterized by low pressure and prevalent in **mid-latitudes (30°-60°)**, develop along the powerful jet stream. Their formation is not seasonally restricted, though fall and **winter witness their peak occurrence**.
- Temperate cyclones are caused by frontogenesis, **where warm air collides with colder air**, amplifying horizontal temperature difference, resulting in **cumulonimbus clouds** and short-duration heavy precipitation.
- Temperate cyclones, with winds ranging from **40-60 mph** and a **central pressure of 1000 MB or lower**, can cause snow, sleet, flooding, landslides, and avalanches.
- They formed between September and May, move west to east, rotating counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
- **Tropical cyclones:** Defined by their development within the tropics, these cyclones form between the Tropic of Capricorn and the Tropic of Cancer. They are large-scale weather systems that originate and gain organization over warm tropical or subtropical waters, characterized by the development of surface wind circulation.



How do Cyclones form?

- **Formation and Initial Development Stage**
 - **Essential Conditions**
 - ◆ Warm sea surface temperatures exceeding 26°C for at least 60 meters.
 - ◆ Atmospheric instability promoting vertical convection and cloud formation.
 - ◆ Weak vertical wind shear, allowing for cyclone growth.
- **Mature Tropical Cyclones**
 - **Intensification Process**
 - ◆ Rising air within thunderstorms spreads high in the atmosphere.
 - ◆ This creates a high-pressure zone aloft, accelerating downward air movement.
 - ◆ Descending air warms due to compression, forming a central “eye” in the storm.
 - ◆ The eye can be circular, concentric, or elliptical.
 - ◆ Concentric bands of turbulent cumulonimbus clouds become the defining feature.
- **Modification and Decay**
 - **Weakening Factors**
 - ◆ Depletion of warm, moist air source (landfall or cold-water passage)
 - ◆ This leads to a decrease in central pressure, internal warmth, and wind speeds.

Cyclone Mitigation Strategies (By UN-HABITAT)

- **Hazard Mapping:** This involves creating maps that identify past cyclone patterns, including wind speed, affected areas, and flooding frequency. This information guides future planning and risk reduction efforts.
- **Land-Use Planning:** Strategic planning ensures critical infrastructure and settlements are located away from high-risk zones like floodplains. This minimizes potential damage and loss of life.
- **Engineered Structures:** Public infrastructure should be designed and built to withstand anticipated cyclone forces as identified by hazard mapping. This reduces damage to essential services during a cyclone event.
- **Retrofitting Non-Engineered Structures:** Strengthening existing buildings to improve wind resistance is crucial. Examples include constructing roofs with a steep slope to prevent wind damage.

- **Cyclone Shelters:** Building shelters at national, state, and regional levels provides safe havens for vulnerable communities during cyclones.

Indian Initiatives for Cyclone Mitigation

- **National Cyclone Risk Mitigation Project (NCRMP):** Led by the Ministry of Home Affairs with World Bank support, NCRMP aims to minimize casualties and property damage during cyclones.
- **Apada Mitra Scheme:** This centrally-sponsored program, approved by NDMA, trains community volunteers in disaster response across 30 flood-prone districts in 25 Indian states.
- **Integrated Coastal Zone Management Project:** This project focuses on developing comprehensive plans for managing coastal areas, enhancing their resilience against cyclones.
- **Color-Coded Cyclone Warnings (IMD):** The Indian Meteorological Department (IMD) utilizes a color-coded system (green, yellow, orange, red) to effectively communicate the intensity of cyclones before they strike.
- **Cyclone Warning Centers:** Seven established centers along India’s east and west coasts cater to cyclone warning services and marine weather forecasting.

Way Forward

Due to its extensive coastline (8041 km), India faces a disproportionate share (10%) of global cyclones. Recognizing this vulnerability, particularly in the face of worsening climate change, Indian agencies like IMD and NIDM must continuously refine their cyclone mitigation strategies.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Which of the following pair regarding cyclones and their location is incorrectly matched?

(a)	Michaung	Andhra Pradesh
(b)	Mocha	Myanmar
(c)	Megan	Australia
(d)	Mandous	Gujarat

(d) :Answer

Descriptive Question

Q. What are Cyclones? Write in detail how a Tropical Cyclone is formed. Also, differentiate between Tropical and Temperate Cyclone. [15 Marks] [250 Words]

CRITICAL MINERALS IN AFRICA

Why in News: Recently, India has started looking for other critical minerals including cobalt in African continent.

Key details

- Thirty percent of the world’s mineral deposits are found in Africa, many of which are essential to low-carbon and renewable technologies like geothermal, electric cars, solar, battery storage, and green hydrogen.
- By 2050, production of minerals and metals like cobalt, graphite, and lithium will need to climb by around 500% to keep up with the anticipated increase in world demand.
- This would not be possible without Africa’s reserves of minerals resources.

What are Critical Minerals?

- Critical minerals are resources that are required for the functioning of contemporary civilizations and economies but may suffer supply constraints due to geological scarcity, geopolitical concerns, or other considerations.

Some Critical Minerals and their Usage

- Lithium, cobalt, and nickel are essential for lithium-ion batteries used in electric vehicles, portable gadgets, and energy storage.
- Rare Earth Elements (REEs) are a collection of 17 elements utilized in high-strength magnets, electronics, wind turbines, and military applications. Neodymium and dysprosium, for example, are essential components of permanent magnets in motors.
- Copper is essential for electrical wiring, renewable energy systems, and electric cars due to its high electrical conductivity.
- Titanium is commonly used in aerospace due to its high strength-to-weight ratio, corrosion resistance, and high temperature performance.
- Platinum Group Metals (PGMs) are essential for catalytic converters in cars, fuel cells, and electronics.
- Graphite is essential for anodes in lithium-ion batteries and has lubricating characteristics in various industrial applications.

India and Critical Minerals

- India’s 30 critical minerals have been determined by an expert committee under the Ministry of Mines.
- These include Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium, and Cadmium. Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, and REE are also included.

- Additionally, the Committee recommends that the Ministry of Mines establishes a **Center of Excellence for Critical Minerals (CECM)**.
 - CECM will periodically announce the major mineral strategy in addition to regularly updating the list of vital minerals for India.
- **Khanij Bidesh India Limited (KABIL)**
 - Khanij Bidesh India Ltd. (KABIL) is a joint venture corporation tasked with identifying and acquiring abroad mineral assets of essential and strategic importance (lithium, cobalt) to assure supply chain security.
- India is a part of the **Mineral Security Partnership (MSP)**:
 - The goal of this US-led alliance of 14 nations is to quicken public and private investment in essential global mineral supply networks.

STATE	STATUS	STATUS
Bihar	CL	Glauconite, chromium, PGE, nickel
Gujarat	CL	Chromium, nickel
Jharkhand	CL	Glauconite, chromium, PGE, nickel
Odisha	CL	Graphite
	ML	Nickel, copper, graphite, manganese ore
Tamil Nadu	CL	Molybdenum ore, graphite, molybdenum
Uttar Pradesh	ML	Molybdenum
Jammu &	CL	Glauconite, chromium, PGE, nickel
Kashmir	CL	Lithium, titanium,
		bauxite (aluminous laterites)
Chhattisgarh	CL	Lithium, REE

Significance of Critical Minerals for India

- **National Security:** Critical minerals are vital to the defense industry, manufacture advanced weaponry, communication systems, and other important technology.
- It will serve as a framework for policymaking, strategic planning, and investment decisions in the mining industry.
- **Job Creation and Local Development:** Mining and processing key minerals can help to create jobs, especially in areas where these resources are abundant, while also providing chances for infrastructural development.
- **Environmental sustainability:** It requires critical minerals for the shift to sustainable energy. They contribute to reduce reliance on fossil fuels, and hence greenhouse gas emissions.

Challenges regarding Critical Minerals for India

- **Russia-Ukraine War:** The Russia-Ukraine conflict has enormous implications, as Russia produces key minerals while Ukraine has reserves of lithium, cobalt, graphite, and rare earth elements. The prolonged war between the two countries has an impact on these important mineral supply chain routes.

- **Limited Reserves of Critical Minerals:** The country has limited reserves and relies heavily on imports, particularly lithium, nickel, and copper (93%).
 - Domestic reserves are limited, making them vulnerable to price changes and supply interruptions.
- **Geopolitical Dynamics:** China's dominance in rare earths and processing capacity creates challenges.
- **Processing Limitations:** Access to essential minerals alone is insufficient; technology is required for processing and manufacturing final products.
 - The gestation period for such processes raises concerns about India's decarbonization aspirations.

Way Forward

- India needs a strategy to become self-sufficient in critical minerals for sustainable economic growth, green technologies for climate action, national defense, and affirmative action to protect affected communities and regions.
- Encourage mineral exploration, especially for deep deposits. This will necessitate a collaborative effort among the government, junior miners, and major mining companies.
- To secure crucial mineral supply chains, India should engage in bilateral and plurilateral arrangements to ensure their resilience.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding 'Critical Minerals':

1. India is a part of the Mineral Security Partnership (MSP), the US-led alliance of 14 nations.
2. Forty percent of the world's mineral deposits are found in Africa.

Which of the following statement(s) is/are correct?

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

(a) Answer

Descriptive Question

Q. Why should India strive for Critical Minerals in Africa? What are the challenges India faces with respect to Critical Minerals. [15 Marks] [250 Words]

INDIA'S 3-STAGE NUCLEAR PROGRAM ENTERING STAGE II

Why in News: The Prime Minister of India witnessed the commencement of “core loading” of India’s first completely indigenous fast breeder reactor at Kalpakkam, Tamil Nadu.

Background: Evolution of Stage II

- To realise the vision of the three-stage nuclear program, India took several steps in the early 1950s that served as the foundation for nuclear research in India
- For the second stage, a **Fast Breeder Test Reactor**

Pressurized Heavy Water Reactors (PHWRs) use U-238 as fuel, generating energy through nuclear fission reactions.

A breeder blanket surrounding the core generates additional Pu-239 from U-238.

Liquid sodium serves as a highly reactive coolant, transferring heat to generate electricity.

Working of PHWR (Pressurised Heavy Water Reactor)

Working of FBRs (Fast Breeder Reactor)

FBRs utilize Uranium-Plutonium Mixed Oxide (MOX) fuel, producing more Pu-239.

A breeder blanket surrounding the core generates additional Pu-239 from U-238.

Liquid sodium serves as a highly reactive coolant, transferring heat to generate electricity.

Utilization of Thorium in Stage III

- Pu-239 and thorium are used in Stage III to produce energy and U-233, advancing towards thorium-based reactors.

Significance of PFBR and Stage II

- Second only to Russia:** Once commissioned, India would become only the **second nation after Russia** to achieve the commercialization of FBRs. Although other nations, Japan, France, and the US, were at various stages of developing the FBR, they abandoned the project due to fears of **nuclear meltdown**
- Achieve self-sufficiency:** India has massive **thorium reserves**. Hence, operationalisation of the second stage FBRs will lead to the **eventual utilisation of thorium** as the fuel. This will reduce India’s dependence on other nations and make India self-sufficient in nuclear energy in line with **Atmanirbhar Bharat**.
- Low cost of electricity:** Even after massive investment involving research and commissioning of the nuclear power plant, the per unit electricity thus produced is cheaper to other power plants.
- Less Nuclear Waste:** One of the biggest challenges of

(FBTR) was completed in 1977 at Kalpakkam. It served as a testing ground for FBR technologies. But sanctions against India by International community delayed the progress towards FBR.

- In 2003, **Bharatiya Nabhikiya Vidyut Nigam (BHAVINI)** was set up by the **Department of Atomic Energy (DAE)** at Kalpakkam as a **special-purpose vehicle**. BHAVINI works under the direct control of DAE. BHAVINI is entrusted with the **implementation of Stage II**.
- The **Indira Gandhi Centre for Atomic Research (IGCAR)**, Kalpakkam, has designed a **Prototype Fast Breeder Reactor (PTBR)** with 500 MW capacity.

using nuclear energy is the radioactive waste generated, which has to be disposed of in large geological disposal facilities. The **FBRs use spent fuels from the first stage**; hence, there will be a significant reduction in the radioactive nuclear waste generated.

Challenges in Stage II

- Operational delays, safety concerns,** and regulatory issues pose challenges to FBR commercialization.
- Handling and storage of radioactive materials** like thorium require stringent protocols.
- Strengthening regulatory bodies like the Atomic Energy Regulatory Board is necessary for effective oversight.

Conclusion

India’s progress in **nuclear energy underscores its commitment to sustainable development** and energy security. Despite challenges, India’s entry into Stage II of its nuclear program marks a significant milestone, paving the way for achieving ambitious energy targets and global leadership in nuclear research and power generation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the three-stage nuclear programme of India:

1. Bharatiya Nabhikiya Vidyut Nigam (BHAVINI) is entrusted with the implementation of Stage II of this programme.
2. Pu-239 and Thorium are used in Stage III to produce energy and U-233.

Which of the above statement(s) is/are correct?

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

Answer: (c)

Descriptive Question

Q. Describe Fast Breeder Reactor. What is its significance in Indian nuclear program. [10 Marks] [150 words]

SECOND ROCKET LAUNCH PORT OF ISRO

Why in News: ISRO Chairman S Somanath informed recently that it may take up to two years for the completion of the construction at the site.

Key details

- The new facility could permit anywhere between **20 to 30 SSLV launches**, annually.
- Recently, Prime Minister laid the foundation stone of Indian Space Research Organization's (ISRO) **second rocket launchport in Kulasekarapattinam**.
- **The facility, which costs Rs 986 crore**, is located in the **Thoothukudi district of coastal Tamil Nadu** at a strategically excellent location. In the future, it will be widely and solely utilized for small-scale, on-demand, commercial satellite launches.

ON A MORE DIRECT ROUTE

Second spaceport will be used for smaller rockets.

WHAT'S THE DIFFERENCE?

- ▶ Dogleg manoeuvre is a sharp turn that causes the rocket to deviate from a straight flight path.
- ▶ This manoeuvre requires more fuel in the rocket which eats into the payload capacity of the launcher.

INDIA

ANDHRA PRADESH

SRIHARIKOTA

ARABIAN SEA

TAMIL NADU

Tuticorin

KULASEKARAPATTINAM

SRI LANKA

BAY OF BENGAL

INDIAN OCEAN

When rockets are launched from kulasekarapattinam, this manoeuvre is not required as there is no landmass along the flight path in the southward direction.

In polar missions, a PSLV from Sriharikota must perform a dogleg manoeuvre to avoid flying over Sri Lanka, to protect it from rocket debris.

What is the need of new launchport?

- **Increased Launch Traffic:** With India's space sector now welcoming private companies, a significant increase in commercial launches is anticipated. To manage this growing volume of activity, building a new launchpad becomes essential.
- **Sharing the Load:** ISRO's current launch complex, **The Satish Dhawan Space Centre (SDSC) at Sriharikota Range (SHAR)**, could become overloaded if it's expected to handle both **large-scale missions and smaller satellite launches**. A new facility dedicated to smaller payloads would help distribute the workload and **ensure efficient operations**.
- Encourages **private investment**, fostering innovation and competition in the space sector.

Small Satellite Launch Vehicle (SSLV)

- **The three-stage SSLV launch vehicle** can propel 500 kg satellites into a 500 km planar orbit from SDSC. It has solid propulsion stages and a terminal stage Velocity Trimming Module (VTM) depending on liquid propulsion.
- **Economical, minimal turnaround time, the ability to adapt to several satellites, Launch demand feasibility, minimal prerequisites for launch infrastructure.**
- Suitable for constellation deployment, meeting the expanding demands of space-based data, communications, surveillance, and business. Space agencies have a profitable commercial potential due to the increased demand for small satellite launches.

India's Journey of SSLV

- **SSLV-D1 faced failure** in August 2022, delivering two satellites.
- In February 2023, **SSLV-D2 achieved success** when it launched three satellites from SHAR into a 450 km circular orbit, completing the trip in 15 minutes.
- The **Satish Dhawan Space Centre (SHAR) in Sriharikota, Andhra Pradesh**, was the launchpad for both SSLV missions.

Conclusion

India's second launchpad in Kulasekarapattinam will handle smaller, on-demand satellite launches, easing pressure on the main facility and boosting the commercial space sector.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Consider the following statements with reference to Small Satellite Launch Vehicle (SSLV)
1. It is a four stage Launch Vehicle configured with two Solid Propulsion Stages and two liquid propulsion Stages.
 2. It has a payload capacity of up to 1000 kgs.

How many of the statement/s above are **Incorrect**?

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

(c) : ANSWER

Descriptive Question

- Q. What is a Small Satellite Launch Vehicle? Discuss its advantages. Also highlight the challenges in its development. [10 Marks] [150 words]

INDIA'S FIRST HYDROGEN FUEL CELL FERRY

Why in News: Prime Minister inaugurated **India's first indigenously built hydrogen fuel cell ferry**, marking a significant milestone in the country's pursuit of clean and sustainable maritime transportation.

Harit Nauka Initiative

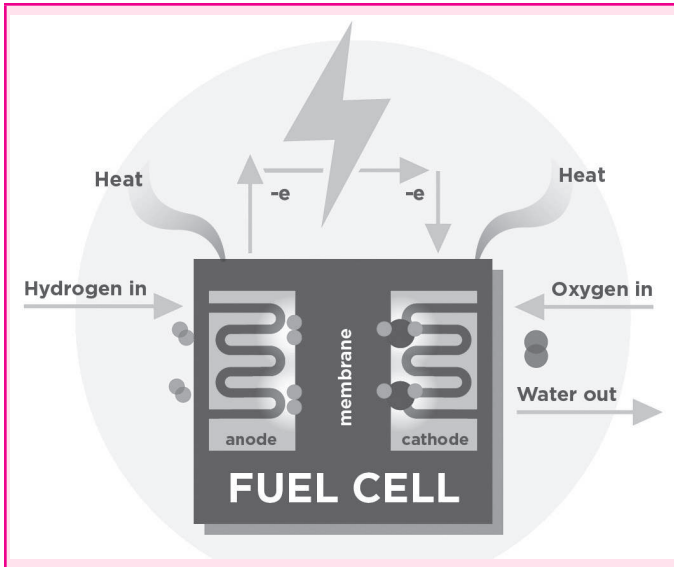
- It was launched in **2024 by the Ministry of Shipping**. The Harit Nauka initiative sets ambitious goals for the **adoption of green fuels in inland water transportation**. The initiative mandates all states to:
 - **Transition 50% of their inland waterway passenger fleet to green fuels** within the next decade.
 - Achieve a **complete shift (100%) to green fuels by 2045**.
- This initiative emphasizes the government's commitment to reducing carbon emissions and promoting sustainable practices in the maritime sector.

Hydrogen Fuel Cells

- Hydrogen fuel cells offer a promising solution for clean energy generation.
- They **combine hydrogen and oxygen to produce electricity**, with **water vapor as the only byproduct**.

Working Principle of HFC

- Hydrogen fuel cells function through an **electrochemical process**. Hydrogen gas is fed to the anode, where a catalyst separates it into protons and electrons.
- **Electrons flow through an external circuit**, generating electricity, while protons pass through the electrolyte membrane to the cathode.
- At the cathode, they combine oxygen from the air and electrons to form water vapor, the only emission from the cell.



Advantages

- **Zero Emissions:** They produce electricity with water vapor as the only byproduct, significantly reducing air pollution and combating climate change.
- **High Efficiency:** They convert fuel into electricity with over 50% efficiency, surpassing internal combustion engines.
- **Versatility:** They find applications in various sectors like transportation, power generation, and portable electronics.
- **Fast Refueling:** Refueling with hydrogen is faster than recharging electric vehicle batteries.
- **Low Environmental Impact:** When produced via renewable sources or with carbon capture and storage, they minimize environmental impact.

Understanding Hydrogen - The Clean Fuel Alternative

- Hydrogen, denoted by the symbol H and atomic number 1, is the most abundant element in the universe, constituting roughly 75% of all normal matter.
- It holds immense potential as a clean fuel source due to its unique properties
 - **Colorless, odorless, and tasteless:** Hydrogen presents no sensory concerns during use or storage.
 - **Non-toxic:** It does not pose a threat to human health upon exposure.
 - **Highly combustible:** This property makes it suitable for generating energy through combustion in engines.

THE COLORS OF HYDROGEN

GREEN

Hydrogen produced by electrolysis of water, using electricity from renewable sources like wind or solar. Zero CO₂ emissions are produced.

BLUE

Hydrogen produced from fossil fuels (i.e., grey, black, or brown hydrogen) where CO₂ is captured and either stored or repurposed.

GREY

Hydrogen extracted from natural gas using steam-methane reforming. This is the most common form of hydrogen production in the world today.

PURPLE/PINK

Hydrogen produced by electrolysis using nuclear power.

TURQUOISE

Hydrogen produced by thermal splitting of methane (methane pyrolysis). Instead of CO₂, solid carbon is produced.

BROWN/BLACK

Hydrogen extracted from coal using gasification.

YELLOW

Hydrogen produced by electrolysis using grid electricity from various sources (i.e., renewables and fossil fuels).

WHITE

Hydrogen produced as a byproduct of industrial processes. Also refers to hydrogen occurring in its (rare) natural form.

Challenges

- **High Production Costs:** Manufacturing fuel cells and infrastructure for storage, transportation, and distribution is expensive.
- **Limited Infrastructure:** The current infrastructure for hydrogen production, distribution, and refueling stations is inadequate in many regions.
- **Energy-intensive Production:** Most hydrogen currently comes from natural gas through steam methane reforming, releasing carbon dioxide.
- **Storage Challenges:** Hydrogen's low energy density necessitates large storage tanks or high-pressure containers, raising safety concerns due to potential leaks.
- **Safety Concerns:** Hydrogen is highly flammable and requires careful handling, storage, and transportation.

Way Forward

To fully realize the potential of hydrogen technology, the following measures are crucial:

- **Investing in research and development** to reduce production costs and improve efficiency.
- **Developing a robust hydrogen infrastructure** with production facilities, distribution networks, and refueling stations.
- **Promoting the production of green hydrogen** through renewable energy sources like solar and wind.
- **Implementing stringent safety regulations** to ensure the safe handling, storage, and transportation of hydrogen.

Conclusion

Hydrogen fuel cell technology offers a promising solution for sustainable water transportation. While challenges persist, India's initiative in launching the hydrogen fuel cell ferry demonstrates commitment to exploring this technology's potential for a cleaner and greener future.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. Consider the following statements regarding fuel cells:

1. Fuel cells are electrochemical devices that produce only water as a byproduct while converting the chemical energy contained in hydrogen and oxygen into electrical energy.
2. It does not involve combustion or recharging.

Which of the above statement is **Incorrect**?

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

Answer: (d)

Q2. With reference to Harit Nauka Initiative, consider the following statements:

1. It was launched by the Ministry of Shipping.
2. As per the guidelines, all states have to make efforts to use green fuels for 50% of inland waterways-based passenger fleets in the next one decade, and 100% by 2045

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)

Q3. With reference to hydrogen as an alternative fuel, consider the following statements,

1. It does not pose any threat to human health upon exposure.
2. Due to its high energy density, it requires high-pressure containers for storage.
3. It produces energy with water vapour as only by product.

How many of the above statements are correct?

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

Answer: (b) (1 & 3 only)

Descriptive Question

Q. What are the different types of Hydrogen? Discuss some government initiatives to promote green hydrogen. [10 Marks] [150 words]

ETHANOL-100

Why in News: Recently, the revolutionary motor fuel 'ETHANOL 100' was unveiled by the Union Minister for Housing and Urban Affairs and Petroleum and Natural Gas.

Key details

- The Government of India's **E-100 Project** is a noteworthy effort to **create a network for the production and distribution of ethanol throughout the country.**
- Ethanol-100 is perfect for **high-performance engines**, resulting in **increased efficiency and power production** while **reducing environmental effect.**
- The **Bureau of Indian Standards (BIS) specifications for ethanol blends E12 and E15**, as well as the E-20 notification that permits oil companies to sell gasoline

Descriptive Question

Q. The government of India has set a target of 20% ethanol blending in petrol by 2025. In light of this statement, discuss the advantages and challenges in achieving the target. [10 Marks] [150 words]

- Composed of four nucleotide bases **adenine (A), cytosine (C), guanine (G), and thymine (T)**, the human genome contains roughly 3 billion base pairs.
- This complex sequence encodes information for physical characteristics, disease susceptibility, and other biological traits.

GENOME INDIA PROJECT

Why in News: The Genome India Project, which is sponsored and overseen by the Department of Biotechnology, reported that it had completed sequencing 10,000 Indian genomes.

Key details

- This project is seen as a foundational step for future medical research in India, with the potential to improve understanding of disease predisposition in the Indian population.
- The project aims to improve disease prediction and treatment in India. The discovery of a genetic variant for heart failure in **4% of the Indian population** exemplifies the potential for identifying disease-related genetic variations.
- The project should prioritize accessibility and collaboration with various **stakeholders, including scientists, ethicists, and social scientists**, to ensure the project's benefits reach the wider population.

Genome India Project

- Launched in 2020, the Department of Biotechnology's Genome India Project involves collaboration between the **Centre for Brain Research at the Indian Institute of Science and 20 other institutions**.
- The project capitalizes on India's unique demographics. The country's vast population of **1.3 billion people encompasses over 4,600 distinct ethnic groups**, many of which practice endogamy. This genetic diversity offers a rich resource for identifying disease-associated mutations.
- The massive dataset generated by the project, estimated at 8 petabytes, will be housed at the **Indian Biological Data Centre (IBDC)** - the nation's first centralized repository for life science data, established in 2022.

DNA and Genes

- **Deoxyribonucleic acid (DNA)** is the molecule that carries the genetic instructions for all living organisms and many viruses. DNA dictates development, functioning, growth, and reproduction.
- **Specific segments of DNA, called genes**, contain instructions for protein production. Proteins are essential for various biological functions.

Instruction Manual of the Genome

- The genome represents an organism's entire hereditary information inherited from parents.

Genome Sequencing

- Genome sequencing determines the precise order of nucleotides within an organism's DNA.
- Whole genome sequencing identifies the order of **all four bases in one process**.

Procedure of Genome Sequencing

- DNA extraction from a sample (often blood).
- Fragmentation of DNA into smaller, manageable pieces.
- Tagging of fragments with fluorescent markers for identification.
- Sequencing using DNA sequencers to **read the base sequence**.
- Reconstruction of the complete genetic sequence using computational algorithms.

Applications of Genome Sequencing

- **Biomedical Research:** Understanding the genetic basis of diseases, identifying mutations, and discovering potential drug targets.
- **Pharmacogenomics:** Predicting individual responses to drugs based on genetic makeup, leading to personalized treatment strategies.
- **Agricultural Genomics:** Identifying genes for desirable traits in crops (disease resistance, yield, nutritional content) for improved breeding programs.
- **Evolutionary Biology:** Studying evolutionary history, relationships among species, genetic diversity, and population dynamics.
- **Conservation Biology:** Assessing genetic diversity, identifying endangered species, and developing strategies for species preservation and management.

Conclusion

The Genome India Project successfully sequenced 10,000 Indian genomes, a **critical step for future medical research**. This project aims to improve disease prediction and treatment by identifying disease-related genetic variations specific to the Indian population. Ensuring accessibility and collaboration with various **stakeholders** is crucial to maximize the project's benefits.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following:

1. To carry out whole genome sequencing of 10000 individuals from 99 ethnic groups
2. To create a biobank of blood samples
3. To make genome data available for academic purposes
4. To design disease-specific genetic chips for low-cost diagnostics

How many of the above are the objectives of the Genome India Project?

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

Answer: (d)

FSSAI SETS UP LAB NETWORK

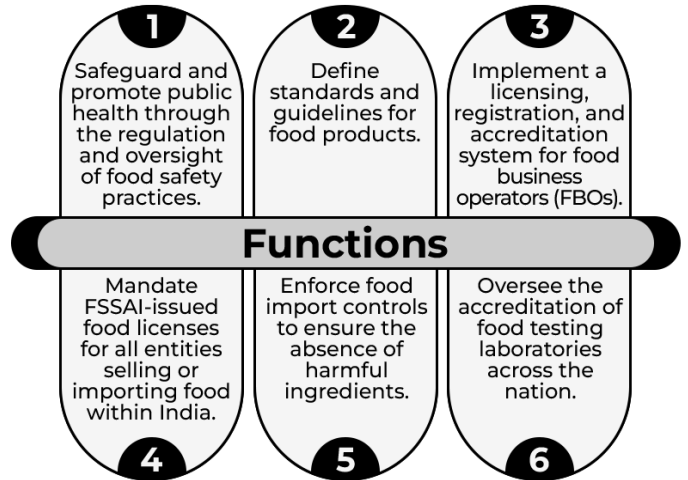
Why in News: Recently, the Prime Minister virtually presented 17 Food Safety on Wheels (FSW) trucks and a new microbiology laboratory in Assam.

Key details

- The Food Safety Standards Authority of India (FSSAI) established a new microbiology laboratory in Guwahati, Assam. This signifies a significant advancement in strengthening food testing infrastructure across the state.
- Equipped with cutting-edge facilities and staffed by experts, the laboratory plays a crucial role in ensuring food safety by detecting various microorganisms, including pathogens, present in food products.
- **The FSSAI also introduced Food Safety on Wheels (FSWs) vehicles valued at Rs 13.11 crore.** These mobile units not only expand testing capabilities but also deliver crucial training programs, ultimately aiming to solidify food safety practices throughout Assam.
- India's 79 state food testing labs lack pathogen testing due to requirements for live samples, costly reagents, and specialized microbiologists.

FSSAI

The Food Safety and Standards Authority of India (FSSAI) is an **autonomous body** established under the **Ministry of Health and Family Welfare** of Government of India. Founded under the **Food Safety and Standards Act, 2006**, the FSSAI serves as the consolidating authority for food safety regulations in India.



Expected Questions for UPSC CSE

Prelims MCQ

Q. With reference to the Food Safety and Standards Authority of India, consider the following statements:

1. It was established under Ministry of Consumer Affairs, Food and Public Distribution.
2. It issues food licenses for all entities selling or importing food within India.

Which of the statement given above is/are correct?

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

Answer: (b)

Descriptive Question

Q. Discuss the role of Food Safety and Standards Authority of India (FSSAI) in safeguarding and promoting public health in India. [10 Marks] [150 words]

SUBMARINE CABLES

Why in news: Recent tensions in the Red Sea region highlight concerns over the security of undersea cable systems connecting India to global telecommunications networks.

What are undersea cables and why are they Important?

Submarine communications cables are essential infrastructure laid on the **seabed** to enable the transmission of telecommunication signals between land-based stations across oceans and seas. These cables utilize advanced **Fiber-optic technology**, where optical fibers are protected by marine-grade coatings, ensuring durability in harsh underwater conditions

- **Global Connectivity:** These cables play a crucial role in connecting continents worldwide, forming a global network of communication. Strategically positioned along the ocean floor, submarine cables serve as vital links, facilitating the seamless exchange of telecommunications data across vast distances.
- **Compared to satellite alternatives,** submarine cables offer a **reliable, cost-effective, and high-capacity solution** for internet connectivity. This makes them the preferred choice for global communication networks, enabling efficient data transmission on a massive scale
- They are installed through a meticulous process involving cable station setup, installation, and laying, with specialized ships and equipment.
- **India's Critical Infrastructure:** Submarine cables are **integral to India's flagship initiative, Digital India 2015, which aims to digitally empower society and governance.** With 17 submarine cables landing in different parts of the country, India is emerging as a significant hub for submarine cable infrastructure.

- **Submarine Communications Cables:** Used for communication and internet connectivity.
- **Submarine Power Cables:** Transmit power from one place to another

India's Submarine Cable Infrastructure

India has significantly expanded its undersea connectivity, with **17 submarine cables landing at 14 cable landing stations**, primarily located in Mumbai and Chennai.

Examples of Submarine Cable Projects

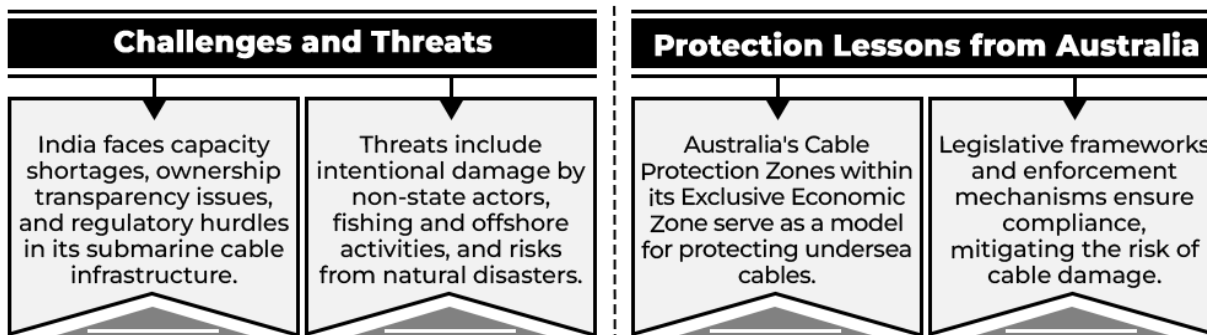
- **MIST Submarine Cable System:** Connects India with Myanmar, Thailand, Malaysia, and Singapore.
- **Reliance Jio Infocomm's India Asia Xpress (IAX):** Establishes direct connections from India to the Maldives, Singapore, Sri Lanka, and Thailand.
- **India Europe Xpress (IEX):** Links India to Italy through Saudi Arabia and Greece

Regulatory Measures by Telecom Regulatory Authority of India (TRAI): Classification of Cable Landing Stations

- TRAI has introduced regulations categorising Cable Landing Stations (CLS) into two categories: **Main CLS and CLS Point of Presence.**
- This classification aims to enhance data flow and decrease reliance on international service providers.

Recommendations by TRAI

- TRAI recommends acknowledging submarine cable operations as **essential services.**
- It proposes legislative amendments to support this recognition.
- TRAI suggests **tax exemptions for critical equipment** related to submarine cables.
- This includes exemptions from customs duty and GST for essential goods.



Way Forward

Safeguarding submarine cable systems is crucial for uninterrupted telecommunications and national security. India must enact legislative reforms, integrate cables into critical infrastructure systems, and collaborate internationally to ensure connectivity and resilience in the Indian Ocean Region.

Expected Questions for UPSC CSE

Prelims MCQ

Q. MIST Submarine Cable System connects which of the two countries by telecommunication network,

- (a) India with Australia, New Zealand.
- (b) India with Myanmar, Thailand, Malaysia, and Singapore
- (c) African continent with Australia.
- (d) None of these

(b) :.wsvuA

Descriptive Question

Q. State the importance of undersea cables and what are the challenges and threats to it? [15 Marks] [250 words]

SICKLE CELL DISEASE

Why in News: Genetic therapies have created a lot of promise for treating SCD, but also require the same amenities, which are currently beyond of reach for people most impacted by the condition.

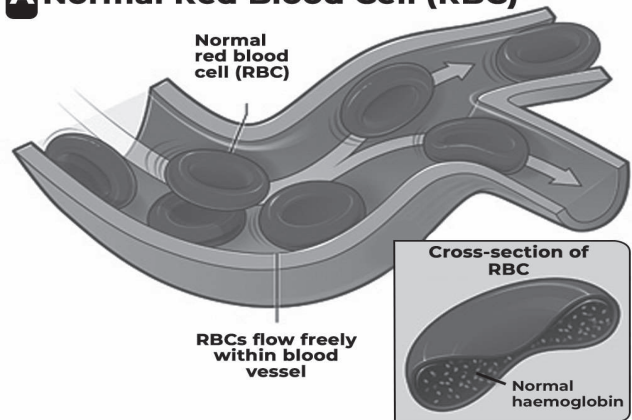
Key details

- India has a significant burden of sickle cell disease (SCD), **ranking third globally** in terms of the number of births affected by this condition.
- The prevalence of SCD births is concentrated in **tribal communities** within India. This highlights the existing geographical and socioeconomic disparities in healthcare access and awareness related to SCD.

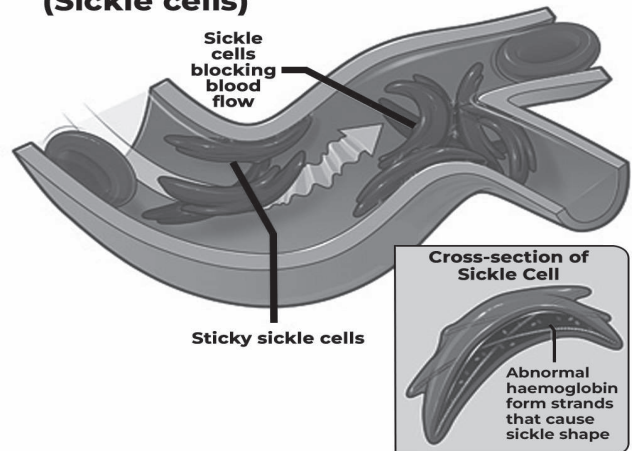
Sickle Cell Disease: A Serious Inherited Blood Disorder

- **Genetic Mutation:** Sickle Cell Disease (SCD) is an inherited condition caused by a **genetic mutation** affecting red blood cells. This mutation alters the shape of red blood cells from their usual round form to a sickle-like crescent.
- **Complications:** These abnormally shaped cells become rigid and struggle to navigate blood vessels efficiently. This can lead to various complications, including **anaemia** (causing fatigue and weakness), **organ damage**, **recurrent severe pain episodes**, and a **shortened lifespan**.
- According to Ministry of Health, marginalized tribal communities are most susceptible to SCD.
- **Symptoms:** Common symptoms include chronic anaemia, frequent and intense pain episodes (particularly in bones, chest, back, and limbs), and delayed growth and puberty.
- **Treatment Options:** Treatment options include blood transfusions to address anaemia and reduce pain crises, hydroxyurea medication to decrease pain episode frequency and prevent long-term complications, and potentially curative therapies like stem cell or bone marrow transplantation using advanced CRISPR technology.

A Normal Red Blood Cell (RBC)



B Abnormal sickled, Red Blood Cell (Sickle cells)



Challenges

- **Limited Diagnosis and Treatment:** A lack of public and healthcare provider awareness about SCD leads to delayed diagnoses and inadequate treatment plans. This is further compounded by the absence of systematic newborn screening and early detection programs.
- **Healthcare Infrastructure Disparity:** Many regions, particularly rural and tribal areas, lack specialized healthcare facilities and trained medical personnel equipped to manage SCD effectively.
- **Financial Burden and Access Issues:** The high cost of medications, regular check-ups, and potential hospitalizations creates a significant financial burden for patients and families. Additionally, inconsistent medication availability and geographical/socioeconomic barriers can hinder access to essential treatments and care.

Indian Government Initiatives for Sickle Cell Disease (SCD)

- **National Sickle Cell Anaemia Elimination Mission:** Launched to eliminate SCD by 2047. It focuses on improved care, comprehensive screening, and awareness campaigns. Additionally, **CSIR is developing gene-editing therapies** under this mission.

- **National Health Mission (NHM):** Provides disease management and prevention programs, including those for SCD. NHM facilitates early detection, awareness creation, and access to essential drugs like hydroxyurea for treatment.
- **Regulatory Framework:** Guidelines exist for **stem cell research (2017)** and **gene therapy development (2019)**. These regulate clinical trials and development of gene therapies for SCD. Notably, CRISPR's research for SCD treatment is underway.
- **State-Level Initiatives:** Madhya Pradesh's State Haemoglobinopathy Mission tackles specific challenges in screening and management.
- **Social Inclusion: The Rights of Persons with Disabilities Act (2016)** recognizes SCD as a disability, offering various benefits like reservations in education and government jobs.

Way Forward

- **Improved Diagnosis and Management:** The passage emphasizes the importance of strengthening genetic counselling and testing programs, prioritizing essential treatments, and identifying carriers early. This highlights a focus on earlier detection and better management of the disease.
- **Public Engagement and Education:** The emphasis on sustained public awareness initiatives, community education about the disease's hereditary nature, and public involvement in regulatory discussions underscores the need for public engagement and education as a key strategy.
- **Enhanced Research and Care:** The call for allocating resources for ongoing research, gaining a deeper understanding of the disease, and ensuring comprehensive healthcare access signifies a focus on both improved research and development of new treatments, as well as better long-term care for patients.

Expected Question for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

Statement I: Sickle Cell Anemia is Autosomal Recessive Disease.

Statement II: Sickle Cell Anemia is caused by a mutation in the Hemoglobin-β gene found on Chromosome 11.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

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

Answer: (a)

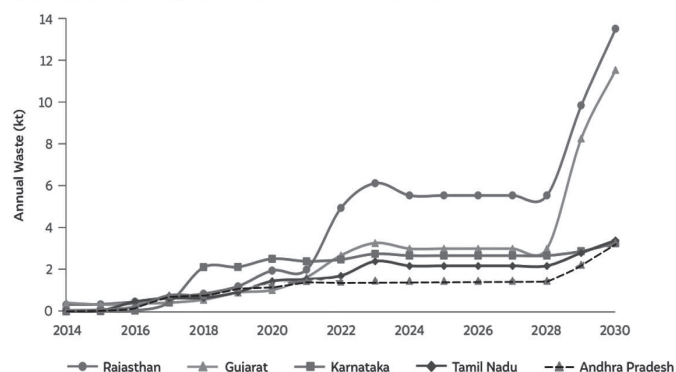
SOLAR WASTE

Why in News: By 2030, India's current installed solar capacity will generate about 340 kt solar waste - three times more than the present.

Key details

- India's installed **66.7-gigawatt (GW)** capacity, as of FY23, has generated about **100 kilotonnes (kt)** of cumulative waste, which will increase to **340 kt by 2030**. Around **67 per cent** of this waste is expected to be generated in five states: **Rajasthan, Gujarat, Karnataka, Tamil Nadu and Andhra Pradesh**.
- **Rajasthan** will account for **24 per cent** of the waste generated by 2030, followed by **Gujarat** accounting for **16 per cent**, and **Karnataka** accounting for **12 per cent**.
- India will generate around **600 kt of cumulative waste by 2030** from existing and new capacities. This volume will increase **32 times by 2050** resulting in about **19000 kt of cumulative waste**.
- The share of cumulative waste generated due to **existing capacity by 2030 is 56 per cent**. This share increases to **74 per cent by 2040** because of existing installations **reaching their end-of-life**. Similarly, **77 per cent** of the cumulative waste generated by 2050 will be due to **new capacities**.

Rajasthan and Gujarat will lead the solar waste generation in 2023



What is Solar waste

- **Solar waste definition:** It includes both discarded solar panels and manufacturing byproducts. Discarded panels come from two sources: reaching the end of their lifespan

or sustaining damage during transportation, handling, or installation.

- **Regulation in India:** The Electronic Waste Management Rules 2022 mandate proper management of solar waste in India.
- **Importance of responsible treatment:** Proper treatment is essential to recover valuable materials from the waste and prevent harmful substances like lead and cadmium from contaminating the environment.

What is India's solar waste management policy?

- **Producer Responsibility:** The E-Waste (Management) Rules 2022 hold manufacturers and producers of solar photovoltaic (PV) modules and cells accountable for managing waste generated from these products.
- **Mandatory Storage:** These rules mandate producers to store this waste until 2034-2035, following guidelines set by the Central Pollution Control Board (CPCB).
- **Recycling and Reporting:** The regulations require producers to submit annual reports on the e-waste management portal and mandate recyclers to recover materials as per CPCB guidelines.

How can India manage solar waste better?

- To ensure responsible solar waste management, a regulatory framework is needed. This framework should establish collection procedures, recycling or reuse options, and specific goals for material recovery.
- Promoting markets for recycled materials is crucial. This can be achieved by fostering connections between those with recycled materials and potential buyers, and by creating economic mechanisms that incentivize solar waste management.
- Research and development of improved recycling technologies should be a domestic priority. Funding channels dedicated to supporting this research and pilot projects are essential.

In what ways do other nations manage their solar waste?

- **The EU:** Manufacturers or distributors who are introducing or installing such equipment for the first time are obligated to dispose of trash according to the Waste from Electrical and Electronic Equipment (WEEE) Directive of the EU.
- **The United Kingdom:** All PV manufacturers must register and provide data pertaining to products used for the home solar market (B2C) and non-residential market (B2B) under the industry-managed "take-back and recycling scheme."
- **United jurisdictions:** While some states have proactively set policies to address End-of-Life PV module

management, there are no federal rules or regulations in the United States that discuss recycling.

- **Australia:** Recognizing the issue, the federal government has granted a grant of AUD 2 million under the National Product Stewardship Investment Fund to create and carry out an industry-driven product stewardship programme for photovoltaic systems.
 - It is anticipated that the plan will promote shared accountability in the supply chain to control the effects of PV modules over the course of their lifetime.
- **Countries such as South Korea and Japan** have already demonstrated their determination to develop legislation specifically aimed at tackling the issue of photovoltaic waste.

Way Forward

Solar waste management is a significant challenge, requiring immediate action from private sector players. India-specific data is crucial for developing strategies and policy mechanisms.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Solar waste includes both discarded solar panels and manufacturing byproducts.
2. The Electronic Waste Management Rules 2022 mandate proper management of solar waste in India.
3. The E-Waste (Management) Rules 2022 hold manufacturers and producers of solar photovoltaic (PV) modules and cells accountable for managing waste.
4. E-Waste (Management) Rules 2022 introduced an Extended Producer Responsibility (EPR) regime for e-waste recycling.

How many of the above statement(s) is/are correct?

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

Answer: (d)

Descriptive Question

Q. what is solar waste? Discuss some of the global best practices to manage it. [10 Marks] [150 words]

RHODAMINE B

Why in News: The Karnataka government has declared that the use of dangerous colouring chemicals in well-known foods like **cotton candy and Gobi Manchurian is prohibited.**

Key details

- The Tamil Nadu government recently enacted a ban on the production and sale of cotton candy within the state.
- This action follows the discovery that some cotton candy manufacturers were utilizing **Rhodamine-B**, a chemical compound, in the production process.

About Rhodamine-B

- Rhodamine-B is a **water-soluble chemical** that exhibits a green coloration in its powdered form.
- Upon contact with water, it transforms into a vivid fluorescent pink.
- These chemicals find common application as a coloring agent within the **textile, paper, leather, and paint industries**, specifically to achieve **red and pink colours**.

Regulatory Status and Health Risks

- **The Food Safety Standards Act of 2006** in India prohibits the preparation, packaging, import, sale, and service of food items containing Rhodamine-B, including at celebrations like weddings.
- This industrial dye is **considered toxic** for human consumption globally.
- Regular ingestion of food containing Rhodamine-B can lead to harm within the **brain, particularly the cerebellum and brainstem**, potentially causing functional impairments and motor skill difficulties.
- The chemical can induce oxidative stress in human cells and tissues, posing a long-term threat of cancer and tumour development.

Expected Questions for UPSC CSE

Prelims MCQ

Q. The chemical "Rhodamine-B" is commonly found in which of the following?

- (a) Hand sanitizer (b) Synthetic dye
(c) Pesticide (d) None of the above

Answer: (b)

CARBON FOOTPRINT OF AI

Why in News: Artificial intelligence (AI) has enormous promise for addressing difficult problems, such as the climate catastrophe.

Key details

- **Source of Emissions:** AI systems generate carbon emissions from the infrastructure needed to operate them, particularly data centers that handle vast amounts of data for training and maintenance.
- **Environmental Impact:** Training large AI models can be highly energy-intensive. For instance, training a predecessor to ChatGPT resulted in carbon emissions comparable to driving **over 100 gasoline-powered cars for a year.**
- **Technological Solutions:** Research into **spiking neural networks (SNNs)** and **lifelong learning (L2)** offers promise for reducing AI's carbon footprint. SNNs, in particular, may be a more energy-efficient alternative to **traditional artificial neural networks (ANNs).**

Artificial Neural Networks (ANNs)

- **Function:** ANNs process and learn patterns from data, allowing them to make predictions.
- **Computational Demands:** ANNs require significant computing power, memory, and time during training and inference due to the high number of multiplications with decimal numbers.
- **Precision-Memory Trade-off:** There is a trade-off between processing speed and memory usage in hardware. High-precision decimal calculations in ANNs necessitate more memory, leading to increased energy consumption.
- **Complexity and Energy Consumption:** As ANNs grow more complex, the number of calculations increases exponentially, resulting in a substantial rise in energy demands.

Spiking Neural Networks (SNNs)

- Inspired by the **human brain's neural structure.**
- Utilize discrete spikes or pulses for data processing.
- More energy-efficient than traditional ANNs due to:
 - **Binary, all-or-none spike nature** (energy consumed only during spikes).
 - Sparsity in activity (neurons inactive without spikes).
 - Event-driven processing.
- Potential for up to **280 times higher** energy efficiency compared to ANNs.
- Suitable for applications with limited energy resources (space exploration, defense, self-driving cars).
- Ongoing research focuses on optimization and learning algorithms.

Difference between ANNs and SNNs

Feature	Artificial Neural Networks	Spiking Neural Networks
Data processing	Frame-based	Spike-based
Latency	High	Low
Time resolution	Low	Pseudo-simultaneity High
Time processing	Sampled	Preservation of spatio-temporal correlation Continuous
Neuron model complexity	Low	High
Recognition accuracy	Higher	Lower
Hardware multiplexing	Possible	Not possible
System scale-up	Ad hoc	Adding modules
Recognition speed	Low	High
	Independent on input stimulus	Dependent on input statistics
	Dependent on hardware resources	Not dependent on system complexity
	Dependent on system complexity	Determined by power-per-event processing in modules
Power consumption	Determined by processor power and memory fetching	Dependent on stimulus statistics
Recurrent topologies	Independent on input stimulus	Instantaneous
	Need to iterate until converge	

Lifelong Learning (L2)

- Machine learning paradigm focused on continuous learning.
- Accumulates knowledge from prior tasks for future learning and problem-solving.
- Mitigates overall energy demands of ANNs throughout their lifespan.
- Addresses “catastrophic forgetting” in ANNs during sequential training.
- Utilizes algorithms for sequential training on multiple tasks with minimal forgetting.
- Enables **continual learning and adaptation without extensive retraining**.

Reasons behind high Carbon Footprint of Artificial Intelligence

- **Energy Consumption:** The growth of AI is driving the proliferation of data centers, which significantly contributes to global energy consumption. Estimates suggest the IT industry, fueled by AI, could consume **20% of global electricity** and emit **5.5% of global carbon emissions by 2025**.
- **AI Training Emissions:** Training large AI models requires substantial energy, leading to **high CO2 emissions**. Research suggests a single AI model’s training can emit CO2 equivalent to several cars’ lifetimes. GPT-3, for instance, emits **8.4 tonnes of CO2 annually**, and the energy demands of large language models have grown 300,000 times since the early 2010s.
- **Hardware Consumption:** AI relies heavily on specialized processors like GPUs, which **consume significant power** despite advancements in energy efficiency.
- **Cloud Computing:** While major cloud providers supporting AI deployment pledge carbon neutrality and

improved energy efficiency, further efforts are needed. However, **initial progress shows promise, with data center efficiency** improvements despite rising computing workloads.

- **Environmental Concerns:** Despite its potential, AI’s environmental impact raises concerns. Experts urge a **balanced approach** that considers the carbon footprint during AI development and deployment to avoid prioritizing advancement over immediate environmental consequences.

Way Forward

- **Smaller AI Models:** Research is underway to create more compact AI models that maintain the functionality of larger models. This would significantly **decrease the energy required to run AI**.
- **Quantum Computing Potential:** Developments in quantum computing present an entirely new method of computation. Quantum computers have the potential to train and utilize both Artificial Neural Networks (ANNs) and Spiking Neural Networks (SNNs) in a way that is both faster and **more energy-efficient**.
- **Proactive Approach:** Due to the rapid growth of AI, proactive efforts are crucial to develop energy-efficient solutions before AI’s carbon footprint becomes **substantial**.

Expected Question for UPSC CSE

Descriptive Question

- Q. How does the deployment and operation of AI systems contribute to carbon emissions, and what measures can be taken to mitigate this impact? [10 Marks] [150 Words]

THE EU'S AI ACT

Why in News: The European Union (EU) has taken a historic step in shaping the future of Artificial Intelligence (AI) with the passing of the world's first major act to regulate this powerful technology.

Key details

EU's AI Act is a **four-tiered risk classification system**. This system categorizes AI systems in following ways based on the potential dangers they pose to individuals and society:

- **Unacceptable Risk (Prohibition):** AI systems deemed to violate fundamental EU rights, such as those enabling social scoring or mass surveillance, are entirely banned.
- **High-risk (Require Conformity Assessment and Monitoring):** This category encompasses AI systems with significant potential impact on safety, health, fundamental rights, or democratic processes.
 - These systems must undergo rigorous conformity assessments and be subject to ongoing monitoring to ensure compliance.

- **Specific Transparency Risk (Require Information and Transparency Obligations):** AI systems that pose risks of manipulation or impersonation fall under this category.
 - Developers and deployers of such systems must provide clear information on their functioning and limitations. Chatbots and deepfakes are potential examples.
- **Minimal Risk (No Specific Regulations):** Common AI applications with minimal inherent risks, like spam filters or basic recommendation algorithms, face no specific regulations under the Act.

India's AI Journey

- The Ministry of Electronics and Information Technology has issued an advisory requiring platforms to clearly label any AI models under development or deemed unreliable.
- Additionally, prior government approval must be obtained before deploying such models.
- India's commitment to AI is further demonstrated by initiatives like the **National AI Mission** and the **National AI Strategy (2018)**.
- These programs aim to spur indigenous AI development and address national challenges with this technology.

Global Partnership on Artificial Intelligence (GPAI)

- India is a founding member (2020) and current Chair (November 2022) of the GPAI, a multi-national forum promoting responsible AI development.
- India has hosted the 2023 GPAI Annual Summit (December 12-14).
- Its **secretariat** is hosted at the Organization for Economic Co-operation and Development (OECD), Paris.



Other Global Framework for AI

- **Bletchley Declaration for AI:** This declaration, signed by 29 countries, including the EU and India, promotes responsible AI development based on human rights, safety, fairness, and accountability.
- **Hiroshima AI Process (HAP):** The G7 launched the HAP initiative to explore ways to regulate AI for beneficial purposes while mitigating potential risks.

Way Forward

- **Global Collaboration:** The EU’s Act can serve as a model for international cooperation, fostering discussions and potential convergence on best practices.
- **Balancing Innovation and Regulation:** Striking the right balance between promoting innovation and mitigating risks is vital.
- **Public Engagement:** Open discussions and citizen participation in shaping AI policies are necessary to ensure ethical and responsible advancement.
- **Standardization and Oversight:** Establishing robust standardization processes with meaningful public and government participation is crucial to ensure effective implementation of the Act’s technical requirements.

Conclusion

The EU AI Act is a landmark legislation that sets a high bar for responsible AI development. Its focus on risk mitigation, fundamental rights protection, and bias prevention serves as a valuable model for other nations.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. Consider the following statements regarding EU AI Act:

1. Hiroshima AI Process (HAP) is being implemented by EU and Japan.
2. Bletchley Declaration for AI, signed by 29 countries, including the EU and India, promotes responsible AI development based on human rights, safety, fairness, and accountability.

Which of the above statements is/are correct:

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

(b) :Answer

Q2. Consider the following statements with reference the National Mission for Artificial Intelligence:

1. It aims to establish computing capacity of more than 10,000 GPUs.
2. It seeks to establish AI computer infrastructure through Build-Own-Operate-Transfer (BOOT) model.
3. It aims to establish IndiaAI Datasets Platform.
4. One of its objectives is to set up the IndiaAI Innovation Research Centre.

How many of the above statements are correct?

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

(c) :Answer

Descriptive Question

Q. What are the key features of the EU Framework for AI Regulation? Discuss why there is a need of Artificial Intelligence regulation in the world? [10 Marks] [150 Words]

ICECUBE NEUTRINO OBSERVATORY

Why in News: The researchers have discovered occurrences in IceCube data from 2011 to 2020 that, with a confidence level of greater than 99.99%, fit the signature of tau (τ) type neutrinos.

Key details

- The **IceCube neutrino observatory at the South Pole** detects **neutrinos**, which is one of the subatomic particles.
- The **University of Wisconsin, Madison** is the founding institution of the **IceCube Collaboration**, a global consortium of universities that constructed and maintains it.
- IceCube is made up of many detectors **on the surface and hundreds of sensors buried more than 1.4 km below the ice**.
- The **primary goal of IceCube**, the first gigaton neutrino detector ever constructed, is to see neutrinos from the universe’s most violent astrophysical sources.
- From their sources to Earth, neutrinos—**almost massless particles devoid of any electric charge—can travel with little to no attenuation and no magnetic field deflection**.

Neutrinos

- Light particles called **neutrinos hardly ever interact with matter**.
- They are referred to as “**ghost particles**” for this reason.
- There are three different forms of neutrinos: **tau, muon, and electron neutrinos**.
- It is **estimated that it will take a century for a single neutrino to interact** with a sensor in a **human-sized neutrino detector**. The likelihood of finding neutrinos increases with the detector’s collecting area size.

How Ice Cube detect Neutrinos?

- **IceCube is the largest “neutrino telescope”** in the world, with sensors dispersed throughout an ice cube measuring **one cubic kilometer**.
- A neutrino may **emit radiation and produce some charged particles** when it interacts with the **ice around the sensors**.
- The radiation is detected by the sensors in order to deduce the existence of a neutrino, and they utilize the **characteristics of the radiation to learn more about the particle**.
- There are **various kinds of neutrinos**. Some can be **instantly recognized** using IceCube.

- For the rest, scientists search through years' worth of data collected by IceCube to identify neutrino interaction events.

Conclusion

- The discovery of these ghost particles helps us understand the universe's most powerful events and the particles they produce. It is a watershed moment in particle physics and astrophysics, promising to shed light on some of the universe's most profound mysteries through additional research and observation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

- The IceCube neutrino observatory is situated at the North Pole.
- The observatory detects neutrinos which are heavy particle with no charge.

Which of the above statement(s) is/are correct?

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

Answer: (d)

Descriptive Question

Q. What are subatomic particles? Discuss the benefits of studying subatomic particles and the challenges associated with it. [10 Marks] [150 words]

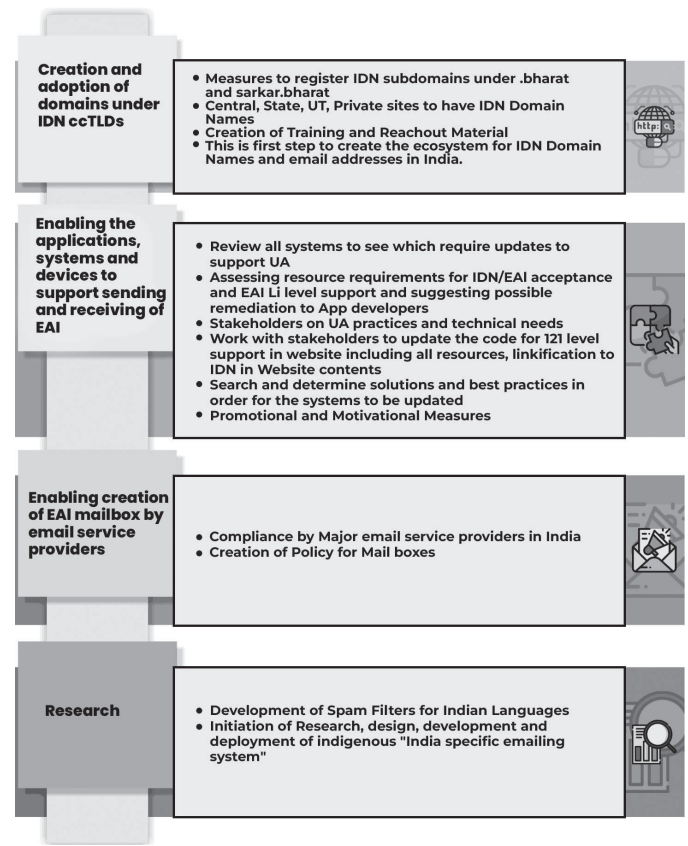
BHASHANET PORTAL

Why in News: In a collaborative effort to promote digital inclusion, the Ministry of Electronics and Information Technology (MeitY) and the National Internet Exchange of India (NIXI) jointly launched the BhashaNet portal.

Key details

- The theme of the event, “BhashaNet: Impetus Towards Universal Acceptance,” highlighted MeitY/NIXI’s unwavering commitment towards ensuring that, regardless of linguistic or textual barriers, everyone can fully participate in the digital world.
- The event featured engaging panel discussions and workshops, with representatives from Bhashini, ONDC, NIC, C-DAC Microsoft, UASG of ICANN, Data Xgen, Infibeam, ZOHO and FICCI sharing insights and best practices for achieving Universal Acceptance readiness.
- India’s successful hosting of the regional Universal Acceptance (UA) Day event paves way for the upcoming Global Universal Acceptance Day scheduled to take place on March 28, 2024, in Belgrade, Serbia.
- In a keynote address, MeitY Secretary Shri S Krishnan emphasized leveraging technology and collaboration to address user needs universally, irrespective of language or script.

Implementation Stages of UA India Programme



NIXI

- Established in 2003, NIXI is a non-profit organization facilitating peering between ISPs for domestic internet traffic exchange within India, improving quality of service and reducing costs.
 - NIXI manages India’s country code top-level domain (ccTLD) i.e., (.IN) since 2004, delegated by the Government of India.
 - Upholding neutrality, NIXI operates in accordance with global best practices for such initiatives.

Expected Questions for UPSC CSE

Prelims MCQ

Q. The term “Universal Acceptance” was recently in news in which context?

(a) Persons with Disability (b) Inclusive schools
(c) Internet language (d) None of the above

Answer: (c)

Descriptive Question

Q. What is digital divide? Describe its various aspects. What are the efforts taken by the government to address them? [15 Marks] [250 words]

ADVANCED MEDIUM COMBAT AIRCRAFT (AMCA)

Why in News: The Advanced Medium Combat Aircraft (AMCA), India's own Fifth-Generation Fighter Aircraft (FGFA), is set to be designed and developed by 2032, with approval from the Cabinet Committee on Security (CCS) for a project worth Rs. 15 crores.

Advanced Medium Combat Aircraft (AMCA)

- This aircraft will be **bigger than other fighters in the Indian Air Force inventory.**
- The aircraft will **put India in a select group of nations that have their own fifth-generation fighter aircraft.**
- The AMCA is envisioned as a **successor to the LCA Tejas**, leveraging the capabilities and experience gained during that project. This **indicates a focus on indigenous development and technological continuity.**
- The AMCA will be designed with a focus on **low-observable (LO) technologies**, reducing its radar signature and making it difficult to detect by enemy radar systems.

- The US-built **GE414 engine**, which will be developed **indigenously** by DRDO's Gas Turbine Research Establishment (GTRE) in association with a foreign defence firm, will power the AMCA Mk1 model.

Light Combat Aircraft (LCAs)

- The LCA is an air dominance fighter with modern technology, **one seat, one engine, supersonic speed, lightweight, all-weather capability**, and several roles for use in air-to-air, air-to-ground, and air-to-sea warfare.
- In 1983, the LCA programme was conceived. Full scale engineering development (FSED) phase I was approved in 1993 after the project description phase was finished in 1989.
- The government created the **Aeronautical Development Agency (ADA)** in 1984 to oversee the **Light Combat Aircraft (LCA) initiative**. The main partner is **Hindustan Aeronautics Limited (HAL)**, with collaboration of CSIR & DRDO Laboratories.

Significance of Advanced Medium Combat Aircraft (AMCA)

Benefits of Stealth

The **AMCA will have a low electromagnetic signature**, increasing survivability and lethality in modern combat conditions.

Enhanced Capabilities

Using enhanced sensors and weaponry, the AMCA will be able to **detect and engage hostile aircraft while remaining undetected**, providing a major edge over fourth-generation equivalents.

Boost to Aatmanirbhar Bharat

Following India's 2018 withdrawal from its Fifth Generation Fighter Aircraft (FGFA) partnership with Russia, the AMCA project **underscores the country's efforts to become self-sufficient in security technology.**

Operational Implications

Given the declining number of fighter squadrons, the **IAF's requirement for seven AMCA squadrons highlights** how critical it is to strengthen India's air combat capability.

Strengthening Strategic Posturing

India will be added to the exclusive list of nations with **fifth-generation stealth fighters by the AMCA**, bolstering its strategic position in the region even though the US, China, and Russia already have such weapons.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding AMCA:

1. It is India's fifth-generation fighter multirole fighter jet.
2. AMCA will have a high electromagnetic signature, increasing survivability and lethality in modern combat conditions.

Which of the statements given above is/are incorrect?

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

Answer: (b)

Descriptive Question

Q. India is planning to develop India's own fifth-generation fighter jet. In this regard throw light on importance of indigenous defence technology. What India could learn from its previous experiences with regard to development of indigenous technology. [15 marks] [250 words]

INS JATAYU

Why in News: In light of China's expanding influence in the Indian Ocean region, the commissioning of **INS Jatayu**, an improved naval base in the Lakshadweep Islands, represents a significant advance in India's maritime security strategy.

INS Jatayu

Following INS Dweeprakshak at Kavaratti, INS Jatayu is the **second naval base in Lakshadweep.**

INS Jatayu is the beginning of a **phased expansion plan** to strengthen India's surveillance and security posture in the strategically located islands close to the Nine Degree channel and critical sea lanes of communication.

It will **operate under the operational control** of the Naval Officer in Charge (Lakshadweep), Southern Naval Command.

Significance

- **Strengthening the Foothold:** INS Jatayu's commissioning will help the **Indian Navy establish a stronger presence** in the Lakshadweep islands.
- **Monitor & Surveillance:** It will **support expanding operational monitoring, outreach, and maintenance.**
 - India views **China's increasing influence in the nation of archipelagos with suspicion**, and the new facility will **increase India's "operational surveillance"** over the region.
- **Comprehensive Development:** It will **usher in a new phase of comprehensive development** and capacity building for the Lakshadweep islands.
- **For Quick Response:** The Navy's **overall operating capacity** and reach in the region will be improved by the new facility, which will facilitate **efforts to combat drugs and pirates in the western Arabian Sea.** It will enhance communication with the mainland and act as a first responder in the area.
- **INS Jatayu for Security:** This marks a significant **advancement in the Lakshadweep Islands' security infrastructure** from a strategic standpoint.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding INS Jatayu:

1. INS Jatayu is an upgraded naval base deployed in the Andaman and Nicobar Islands.
2. It will operate under the operational control of the Defence Minister of India.

Which of the statements given above is/are correct?

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

Answer: (d)

Descriptive Question

Q. In the light of China’s expanding influence, highlight importance of India’s maritime security strategy for the security of Indian waters. [15 Marks] [250 Words]

IMPROVISED EXPLOSIVE DEVICE

Why in News: The Rameshwaram Cafe explosion in Bengaluru was caused by an IED.

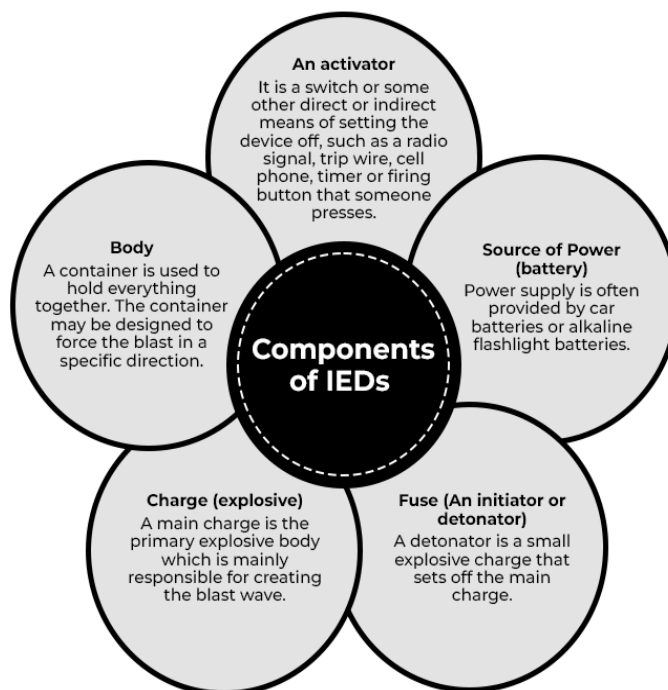
Key details

- An explosion at a crowded cafe in Bengaluru injured nine people. Police suspect a bomb left in a bag caused the blast.
- **Improvised explosive devices (IEDs) are homemade bombs used to cause harm or damage.** They are often used in illegal activities.

What are IEDs?

- It is an improvised device that is intended to harass, distract, destroy, or use toxic, pyrotechnic, or incendiary chemicals. It is put or constructed in this way.
- In the 1970s, the Irish Republican Army (IRA) started using homemade bombs made with fertilizer and smuggled explosives. These effective bombs, both booby traps and remote-controlled, led the British army to create the term IED.
- **Types of IEDs:** The only limitations for IEDs are human inventiveness and the type of explosive used, the assembling process, and the detonation mechanism. Although there are countless varieties of IEDs, they normally fall into three groups:
 - **IED Package/Container Type:** Usually, mortar and artillery shells, or any other kind of packaging or container, are used to make these kinds of IEDs. They can be controlled some major aspects like **time delays, specified command area** that may or may not be wired.

- **IEDs carried by vehicles** Devices that use a vehicle as the package or container are known as vehicle-borne IEDs, or VBIEDs. Depending on the kinds of vehicles that are available in different varieties.
- **Note:** In the United States, the Bureau of Alcohol, Tobacco, Firearms and Explosives (Department of Justice) is represented by the acronym “ATF.”
- **Suicide-borne IED:** The devices that suicide bombers carry often have a high-explosive/fragmentary effect and a manual command detonation firing mechanism, which is a switch or button.



Expected Questions for UPSC CSE

Prelims MCQ

- Q. ‘Lone wolf’ sometimes in news is,
- (a) A disease in the wildlife particularly wolves.
 (b) A computer spyware developed by the Israel.
 (c) One type of terrorist attack.
 (d) Strategy in the modern warfare.

Answer: (c)

Descriptive Question

Q. What are Improvised explosive devices (IEDs)? State different types of IEDs. [10 Marks] [150 Words]

MISSION DIVYA STRA-AGNI-5 BALLISTIC MISSILE

Why in News: Recently, India has announced the successful testing of an Agni missile, which can carry multiple warheads to strike numerous targets at once.

Key details

- Mission Divyastra was a flying test that was conducted from Dr. A. P. J. Abdul Kalam Island in Odisha.
- The test focused on firing numerous warheads at once to hit targets that were far apart.
- India is now one of the few countries with MIRV capability after this test.

About Mission Divyastra

- This is the first flight test of the Agni-5 nuclear missile, which is an indigenously developed missile with a 5,000-kilometer range and Multiple Independently Targetable Re-entry Vehicle (MIRV) technology.
- The Agni-5 MIRV is equipped with indigenous avionics systems and high accuracy sensor packages, which ensured that the re-entry vehicles reached the target points with precision.
- It aims to deliver multiple warheads at different locations or at the same location in a single launch.
- The warheads could include decoys to deceive the enemy's ballistic missile program.

Significance for India

- For the first time, major nations, including China, have openly acknowledged that India has created the MIRV technology, which was discovered in the 1960s.
- India has become one of the few countries with MIRV technology.
- At the moment, the countries that own this advanced technology are the US, UK, France, China, Russia, and India.
- Pakistan is said to have tested the Ababeel, a MIRVed missile, in 2017.
- The Divyastra test's success confirms India's technological leadership in miniature warheads.

AGNI MISSILE FAMILY

- ▶ Agni-I Medium range Ballistic Missile. Range - 700 km. Year - 1989.
- ▶ Agni-II Intermediate range Ballistic Missile. Range - 2,500 km. Year - 1998.
- ▶ Agni-III Intermediate range Ballistic Missile. Range - 3,500 km. Year - 2006.
- ▶ Agni-IV Intermediate range Ballistic Missile. Range - 4,000 km. Year - 2010.
- ▶ Agni-V Intercontinental Ballistic Missile. Range - 5,000 km. Year - 2012.
- ▶ Agni-VI Intercontinental Ballistic Missile. Range - 10,000 km. (under development)

What is MIRV Technology?

- A single missile can carry several warheads because of MIRV technology. With a single missile, the MIRV may strike several targets that are hundreds of kilometers distant.
- As of now, missiles outfitted with MIRV technology are known to be in use by the US, Russia, China, France, and the UK.
- The United States launched a MIRVed Submarine-Launched Ballistic Missile (SLBM) in 1971 and a MIRVed Intercontinental Ballistic Missile (ICBM) in 1970, making it the first nation to develop MIRV technology.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Related to Multiple Independently Targetable Re-entry Vehicle (MIRV) technology consider following statements,

1. Mission Divyastra was a flying test that was conducted from Dr. A. P. J. Abdul Kalam Island in Odisha to test (MIRV) technology.
2. A single missile can carry several warheads because of MIRV technology.

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

(c) : Answer

Descriptive Question

Q. Discuss the mission Divyastra and its significance in the India's security preparedness. [10 Marks] [150 Words]

BHARAT SHAKTI EXERCISE

Why in News: Recently, "PM observes TriServices Manoeuvre and Firing Exercise, or 'Bharat Shakti Exercise, in Pokhran, Rajasthan".

Key details

- The exercise entails demonstrating the tactically calibrated use of specialised technologies against perceived threats in a tri-services setting.
- Based on the nation's Aatmanirbar Bharat agenda, the exercise showcases a variety of indigenous weapon systems and platforms as a demonstration of the nation's capabilities.

Bharat Shakti Exercise Tests Tri-Service Fire Power



Joint-Exercise Showcased by Armed Forces of India

- It will replicate coordinated, realistic **multi-domain operations** that showcase the Indian armed forces' integrated operational capability to **confront threats in the cyber, space, air, and ground domains.**

- It showcases the **Indian Army's** cutting-edge ground warfare and aerial surveillance capabilities with its array of indigenous weapon systems, including **T-90 (IM) Tanks**, Dhanush and Sarang Gun Systems, Akash Weapons System, Logistics Drones, Robotic Mules, and numerous unmanned aircraft vehicles.



- Expendable aerial targets, autonomous cargo carrying aerial vehicles, and naval anti-ship missiles are on display by **the Indian Navy.**

- The Light Combat Aircraft Tejas, Light Utility Helicopters, and Advanced Light Helicopters are examples of the homegrown aircraft that the **Indian Air Force** displays.



About Pokhran

- **Site of India’s nuclear tests:** Pokhran is a desert region most famous for being the location of India’s nuclear tests. India conducted its first nuclear test, codenamed “Smiling Buddha,” in Pokhran in 1974. This was followed by a series of five nuclear tests codenamed “Pokhran-II” in 1998. These tests solidified India’s status as a nuclear power.
- **Impact on India’s strategic position:** The Pokhran nuclear tests were a significant event in India’s strategic development. They signalled India’s intent to be a major power and to deter potential threats from neighbouring countries. The tests also led to international sanctions against India, but these were eventually lifted.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding Exercise ‘Bharat Shakti’:
1. It is a joint military exercise between India and France.
 2. It included successful test firing of the long-range AGNI missile with advanced MIRV technology.

Which of the statements given above is/are incorrect?

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

Answer: (a)

Descriptive Question

Q. What is ‘Bharat Shakti Exercise’? Elaborate the importance of Tri Services Exercises in the defence forces. [15 marks] [250 words]

OPERATION INDRAVATI

Why in News: Operation Indravati has been launched to evacuate Indian nationals to the Dominican Republic from Haiti.

Key details

- Haiti is facing a severe crisis due to escalating gang violence where they have launched attacks in the suburbs of Port-au-Prince.
- Since the 2010 earthquake, gangs have staged attacks, set fire to police stations, closed the airport, and released inmates, making the situation worse.
- Haiti issued a curfew and declared a state of emergency.

About Operation Indravati

- The Indian government is currently conducting **Operation Indravati**, an evacuation effort designed to save its citizens from Haiti, a Caribbean country beset by political unrest and rampant gang violence.
- The initiative, which takes its name from India’s **Indravati River**, is intended to protect Indian nationals in the middle of Haiti’s worsening crisis.

About Haiti



- It is situated between the North Atlantic Ocean and the Caribbean Sea.
- It shares an eastern boundary with the Dominican Republic and occupies the western portion of the island of Hispaniola.
- Cuba borders Haiti to the northwest and Jamaica to the west.
- The official languages are French and Haitian Creole.
- It is the first autonomous Black-led republic in history.
- The country experienced over a century of French colonial authority and nearly two centuries of Spanish colonial rule.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Related to Operation Indravati consider following statements,

1. Operation Indravati has been launched to evacuate Indian nationals to the Dominican Republic from Nigeria.
2. Cuba borders Argentina to the northwest and Jamaica to the west.

Which of the statements given above is/are correct?

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

Answer: (d)

Descriptive Question

Q. Discuss the Operation Indravati and its significance in the India's commitment for its overseas citizens. [10 Marks] [150 Words]

EXERCISE LAMITIYE 2024

Why in News: Recently, Indian Army contingent has departed for Seychelles for Joint Military Exercise LAMITIYE 2024.

Exercise LAMITIYE 2024

About Exercise LAMITIYE

Indian Army contingent departed for Seychelles to participate in the Tenth edition of Joint Military Exercise "LAMITIYE-2024" between the Indian Army and Seychelles Defence Forces (SDF).

Exercise will enhance cooperation and interoperability between both the sides during Peace Keeping Operations.

The exercise will also build and promote bilateral military relations in addition to exchanging skills, experiences and good practices between both armies.

- Both sides will jointly train, plan and execute a series of well-developed tactical drills for neutralization of likely threats that may be encountered in Semi-Urban environment, while exploiting and showcasing new-generation equipment and technology.
- The Joint Exercise will include Field Training Exercise, combat discussions, lectures & demonstrations, which culminates in Validation Exercise.
- The exercise will contribute immensely in developing mutual understanding and magnify jointness between the troops of both the Armies.
- The Exercise will also foster collaborative partnership and help in sharing best practices between the two sides.

Other Exercises

- **Yudh Abhyas:** A yearly exercise between India and the United States centered on cooperative training and counter-terrorism operations.
- **Shakti:** It is a biennial exercise between India and France that aims to improve interoperability and combat skills in mountainous and high-altitude terrain.
- **Dharma Guardian:** It is an annual exercise between India and Japan that focuses on counterterrorism and disaster relief activities.
- **Indra:** A set of joint operations and interoperability-focused drills involving the Army, Navy, and Air Force and conducted between Russia and India.
- **Exercise Samudra Laksamana** was recently underway at Visakhapatnam. The exercise aims to strengthen bonds and enhance interoperability between the Indian and Royal Malaysian Navy.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider following table with respect to India's military exercises and corresponding countries,

Country	Exercise
A. France	1. Indra
B. Russia	2. Shakti
C. Seychelles	3. Lamitiye

How many of the above pairs are correct?

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

Answer: (a) (3 only)

Descriptive Question

Q. What is Exercise LAMITIYE? What is its importance for India's maritime security? [10 Marks] [150 Words]

NITI AAYOG ON "SENIOR CARE REFORMS"

Why in News: NITI Aayog recently released a position paper titled “Senior Care Reforms in India: Reimagining the Paradigm,” highlighting the challenges and opportunities associated with India’s growing elderly population.

Key details

- India is undergoing a demographic shift, with the elderly population (above 60 years) projected to reach **319 million by 2050**, constituting nearly **31% of the total population**.
- According to WHO, the global population aged 60+ is expected to double from 12% in 2015 to 22% by 2050.

Situation of the Elderly Population in India

- **Prevalence of chronic diseases:** 75% of elderly have at least one chronic disease, 40% have disabilities, and 1 in 4 suffer from multi-morbidity. Mental health issues like depression also affect 20%.
- **Mental health issues:** Around 20% of the elderly grapple with mental health problems, including depression, often undiagnosed and untreated.
- **Living arrangements:** 28% live with children without a spouse, 70% reside in rural areas, while 6% live alone, raising concerns about loneliness and social isolation.
- **Gender disparity:** 58% of the elderly are women, with 54% being widows, making them particularly vulnerable to neglect and abuse.
- **Limited pension coverage:** 78% lack pension, leading to financial insecurity and dependence on others.
- **Low awareness of welfare schemes:** Knowledge about schemes like the Maintenance and Welfare of Parents and Senior Citizens Act remains low, limiting access to available support

Challenges Faced by Elderly Population

1 Lack of Support Systems

Shifting Family Structures

Inadequate Social Security

Limited Access to Eldercare Services

2 Negative Stereotypes and Stigma

Ageism

Intergenerational Disconnect

3 Economic Impact

Reduced Workforce Participation

Unrecognized Economic Contribution

4 Digital Divide

Limited Digital Literacy

5 Fragmented Healthcare Delivery

Fragmented Services

Inadequate Geriatric Services

Schemes for senior citizens by the government

- **National Policy for Senior Citizens:** Provides policy support through integrated insurance products, senior-friendly tax structures, and subsidized financing.
- **Senior Able Citizens for Re-Employment in Dignity (SACRED) Portal:** Connects seniors with job opportunities in the private sector.
- **Senior Ageing Growth Engine (SAGE) Initiative:** Promotes and incentivizes senior care products and services.
- **Schemes like Rashtriya Vayoshri Yojana and Sugamya Bharat Abhiyaan:** Assist people with disabilities, including seniors.

- **Atal Vayo Abhyudaya Yojana (AVYAY):** This scheme provides subsidized food, healthcare, and recreational activities, benefiting marginalized seniors. However, its limited geographical reach and income eligibility criteria restrict its impact.
- **Pradhan Mantri Vaya Vandana Yojana (PMVVY):** This scheme offers guaranteed returns for a limited period, protecting against interest rate fluctuations. However, the high minimum investment amount excludes low-income seniors.
- **Pradhan Mantri Suraksha Bima Yojana (PMSBY):** This scheme provides affordable accidental death and disability insurance coverage, but the low benefit amount may not fully address needs.
- **Atal Pension Yojana (APY):** This scheme enables voluntary contributions for future pensions, promoting self-reliance. However, low awareness and informal sector challenges limit its reach.
- **Varishtha Pension Bima Yojana (VPBY):** This scheme offers guaranteed pensions for lump-sum investments, but high costs exclude many seniors.

Way Forward

- **Empowering Health and Well-being:** To improve senior healthcare, by considering aspects of educational programs, geriatric specialists, mental health services, nutritional initiatives, and technological advancements in telemedicine and remote monitoring.
- **Fostering Social Inclusion and Security:** Sensitize the community to the needs of the elderly through campaigns and peer support groups. An approach to improve elder well-being through community awareness initiatives, legal protection, accessible infrastructure, and the development of a caregiving ecosystem.
- **Ensuring Financial Security and Independence:** It can be improved by policy measures to support an aging population, including skills development for continued work, expanded social security, access to reverse mortgages, financial incentives for senior care, and safeguards against financial exploitation.
- **Bridging the Digital Divide:** The initiative aims to make technology accessible to seniors by offering subsidized devices, focusing on digital literacy, and developing assistive technologies with user-friendly interfaces and voice-based interaction options.

Understanding the Silver Economy

The silver economy encompasses the economic activity generated by and for older adults. This includes their consumption of goods and services, retirement income spending, and participation in the workforce. According to estimates, India's silver economy is currently worth approximately ₹73,082 crore and is projected to grow exponentially in the coming years. This growth potential stems from several factors:

- **Rising Life Expectancy:** Indians are living longer, with the average life expectancy reaching 69.7 years in 2020. This translates to a larger segment of the population entering the senior citizen category, with increased disposable income and spending power.
- **Increasing Disposable Income:** Older adults in India, especially those belonging to retired middle-class or affluent families, often possess significant disposable income from pensions, savings, and investments. This creates a demand for specialized goods and services catering to their unique needs and preferences.
- **Shifting Family Structures:** The traditional joint family system in India is gradually changing, leading to more older adults living independently or in nuclear families. This necessitates availing various services like assisted living, healthcare, and eldercare, further boosting the silver economy.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the AVYAY scheme with respect to following statements,

1. It is implemented by ministry of law and justice.
2. It is related to divyangas and their surgeries.
3. It is applicable to all the senior citizens without any income criteria.

How many of the above statements are correct?

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

Answer: (d)

Descriptive Question

Q. Old age is a record of one's entire life, which is why the elderly population is an asset rather than a liability. In this regard, enumerate some of the problems faced by senior citizens. Explain how the silver economy can solve many of these problems. [15 Marks] [250 Words].

QUALITY OF MEDICAL EDUCATION IN INDIA

Why in News: The Department-related Parliamentary Standing Committee on Health and Family Welfare released a report on the quality of medical education in India.

Key details

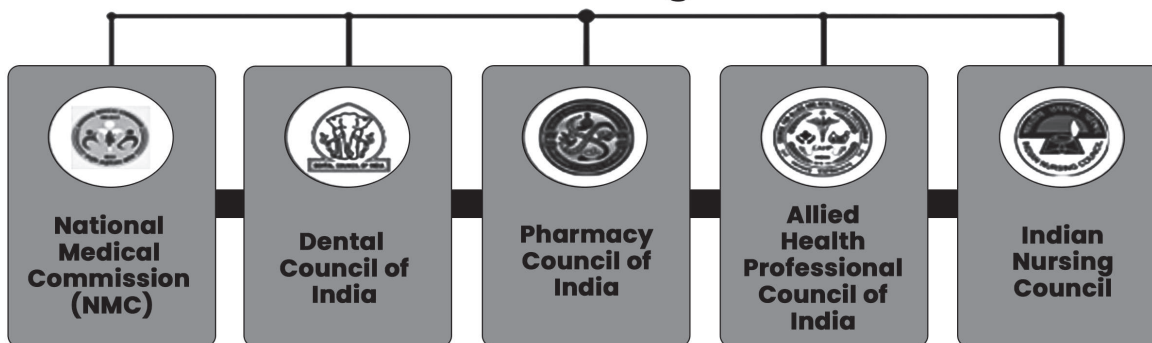
- India boasts as one of the **largest medical education systems globally, with 702 medical colleges** producing a significant number of physicians.
- **However, a closer look reveals paradoxes:**
 - The **doctor-to-population ratio stands at 1:856** which is less than the WHO-recommended ratio that is 1:1000.
 - Yet many Indian students seek medical education abroad. This disparity hints at underlying issues in the system.

Challenges

- **Paradox of plenty:** Despite producing numerous doctors, India witnesses a significant number of students seeking medical education abroad. This paradox exposes underlying quality concerns.
- **Seat shortage:** Both undergraduate and postgraduate seats remain scarce, creating bottlenecks and restricting access.

- **Uneven distribution:** Medical colleges are concentrated in urban areas, neglecting vast rural populations lacking adequate healthcare access.
- **Research underfunding:** Dismal investment in **medical research (0.02% of GDP)** hinders innovation and knowledge advancement.
- **Infrastructure underutilization:** Existing infrastructure, including faculty and equipment, is often not optimally utilized, leading to inefficiency.
- **Outdated Curriculum:** The curriculum does not adequately reflect the latest advancements in medical technology and practices, leaving graduates with outdated knowledge.
- **Inadequate Clinical Exposure:** Limited access to patients and clinical settings to medical students could impede the development of practical skills crucial for effective diagnosis and treatment.
- **Faculty Shortage:** The system suffers from a shortage of qualified and experienced faculty, impacting the quality of instruction and mentorship.
- **Lack of Standardized Assessments:** The absence of robust, standardized assessments across medical colleges raises concerns about the uniformity and competency of graduates.
- **Ethical Concerns:** Instances of unethical practices like capitation fees and ghost faculty can compromise the integrity of the system.

Medical Education Regulation in India



Recommendations of Committee

- **Expanding Seats:** While increasing seats through government schemes can enhance accessibility, it must be coupled with quality assurance measures to avoid compromising standards.
- **Streamlining Recruitment:** Addressing faculty shortages requires transparent and efficient recruitment processes to attract qualified professionals.
- **Technology-Leveraged Learning:** Utilizing technology for distance learning and virtual classrooms can broaden access to quality education, but concerns about digital divide and practical skill development need addressing.
- **National Doctor Database:** Maintaining a centralized database of doctors can facilitate tracking career trajectories and identifying areas for improvement, but privacy concerns must be addressed.
- **Comparative Study:** Benchmarking against international best practices can offer valuable insights, but tailoring solutions to India’s specific context is crucial.
- **Long-Term Planning:** Chalking out a comprehensive 20–25-year plan is essential for sustainable development, but stakeholder consultation and flexibility are vital.
- **Private Investment:** Encouraging private investment can enhance infrastructure and research, but stringent regulations are needed to prevent profiteering and maintain quality standards.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements?

1. In India the doctor-to-population ratio stands at 1:856.
2. India has largest medical education system globally, with 1000 plus medical colleges.

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)

Descriptive Question

Q. Though India has one of the highest numbers of medical colleges in the world, it faces various problems in medical education. State the reasons behind these issues. [10 Marks] [150 Words].

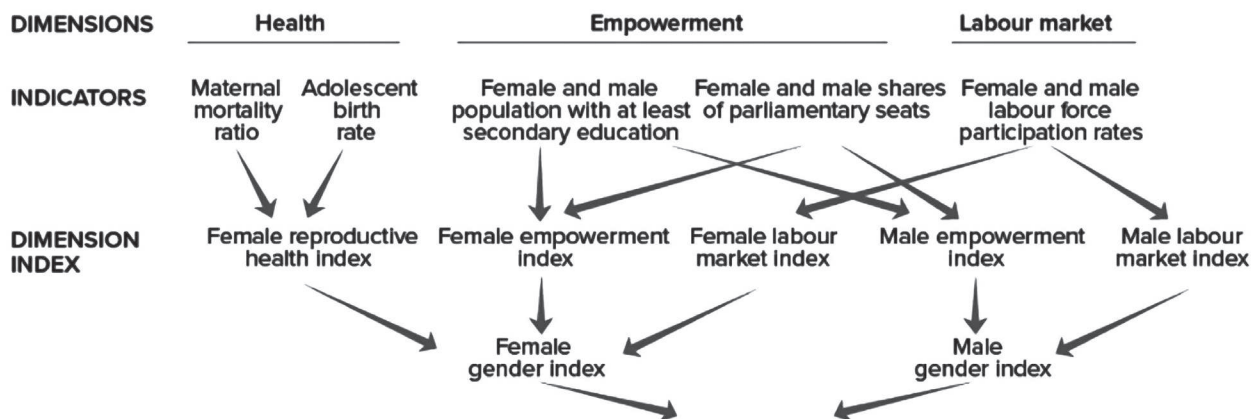
THE GENDER INEQUALITY INDEX (GII) 2022

Why in News: Recently, the Gender Inequality Index (GII) 2022, key benchmark for tracking progress towards gender equality, has been launched.

About the Gender Inequality Index (GII)

- Developed by the **United Nations Development Programme (UNDP)** as part of the Human Development Report.
- A composite measure reflecting gender gaps in three dimensions:
 - Reproductive health (maternal mortality, adolescent birth rate)
 - Empowerment (political participation, secondary education attainment)
 - Labor market (labor force participation rate)
- Lower GII value indicates lower gender inequality.

Dimensions and Indicators



India's Performance

- **Positive Leap:** India jumped 14 positions in the 2022 GII, ranking 108th out of 193 countries with a score of 0.437.
- **Improvements Across HDI Indicators:** This aligns with advancements in overall human development – life expectancy, education, and national income.
- **Adolescent Birth Rate Decline:** A decrease from 17.1 to 16.3 births per 1000 women aged 15-19 indicates progress in reproductive health.

Persistent Challenges

- **Labor Force Participation Gap:** Despite overall improvement, India grapples with a significant gender gap (47.8%) in labor force participation – approximately 37% for women compared to 76.1% for men.

- **Global Ranking:** India's position remains far below top performers like Denmark, Norway, Switzerland, and Sweden.

Initiatives Driving Change

- **Code on Social Security (2020):** Provides social security benefits for women across various aspects.
- **Mission Shakti:** Empowers women through self-help groups promoting socio-economic activities.
- **Other Schemes:** Beti Bachao Beti Padhao (girl child protection), Pradhan Mantri Matru Vandana Yojana (maternity benefits), Ujjwala Yojana (clean cooking fuel), reservations for women in governance, and legislative policies contribute to progress.

Way Forward

- **Addressing Labor Force Participation:** Bridging the gender gap in work opportunities requires targeted policies promoting skills development, childcare facilities, and dismantling workplace discrimination.
- **Education for Girls:** Continued focus on girls' education, particularly in secondary and higher education, is crucial for long-term empowerment.
- **Combating Gender-Based Violence:** Strong legal frameworks and dedicated support systems are essential to ensure women's safety and well-being.
- **Promoting Gender Equality Mindset:** Shifting social attitudes through awareness campaigns and community engagement can foster a more equitable environment.
- **Data-Driven Policymaking:** Regular monitoring and data analysis of gender indicators will help tailor interventions to address specific challenges.

Conclusion

India's ascent in the GII is a positive development. However, sustained efforts are needed to close the remaining gaps and create a truly gender-equal society. By addressing the challenges outlined above and implementing effective policies, India can continue its trajectory towards a more inclusive future.

Expected Questions for UPSC CSE

Prelims MCQs

Q. With respect to Gender Inequality Index (GII), consider the following statements:

1. It is released annually by World Bank.
2. It measures gender gaps in education and health.
3. Lower GII value indicates higher gender equality.

How many of the above statement(s) is/are correct?

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

Answer: (a) & (c)

Descriptive Question

Q. Discuss the various aspects of gender inequality. Highlight India's status in this regards. What are the steps taken by the government? [10 Marks] [150 Words].

FOUNDATIONAL LITERACY AND NUMERACY ASSESSMENT TEST (FLNAT)

Why in News: Recently, the Department of School Education and Literacy (DoSEL), Ministry of Education, Government of India conducted the **Foundational Literacy and Numeracy Assessment Test (FLNAT)** as part of the ULLAS - Nav Bharat Saaksharta Karyakram, across 23 states.

Key details

- **Roughly 37 lakh learners** will participate in this nationwide assessment.
- The FLNAT will be held in all participating State/UT districts, with test centers in **District Institutes of Education and Training (DIETs)** and **Government/Aided Schools**.

Test Evaluation Criteria

- The evaluation consists of **three subjects (reading, writing, and numeracy)**, each worth 50 points, for a total of 150 points.
- This test was created to **assess the foundational literacy and numeracy skills** of registered nonliterate students.

Previous Assessments

- **Two FLNATs** were conducted in March and September of 2023.
- At this point, **36,00,870 learners** have been certified.

Significance

- Conducting the **test in regional languages promotes and preserves linguistic diversity**.
- The test is conducted in the **regional language of the learners, in line with NEP 2020's focus on promoting multilingualism and using the mother tongue or local language as the medium of instruction**.
- Some UTs, like **Chandigarh, Puducherry, Lakshadweep, and Goa, seek to achieve 100% literacy through FLNAT**. The test is critical for determining the effectiveness of teaching-learning sessions held as **part of the ULLAS - Nav Bharat Saaksharta Karyakram**.
- Qualifying learners will get a certificate from the **National Institute of Open Schooling (NIOS)** for achieving foundational literacy and numeracy abilities.

About ULLAS Initiative

- The **Understanding Lifelong Learning for All in Society (ULLAS)** program is meant to **transform education and literacy** across the country.
- It provides **fundamental education, digital and financial literacy, and key life skills to persons aged 15 and up who have lost the opportunity to attend school**. It is being executed through volunteers.
- The scheme aims to **provide not only Foundational Literacy and Numeracy, but also Critical Life Skills** (e.g., financial literacy, digital literacy, commercial skills, health care, child care, and family welfare), **Vocational Skills Development** (for local employment), and **Basic Education (preparatory and intermediate)**.

Conclusion

The FLNAT represents another significant step in realising the vision of Viksit Bharat and Jan Jan Saakshar Bharat. We look forward to seeing ULLAS' sustained success and impact in increasing literacy rates across the country.

Expected Questions for UPSC CSE

Prelims MCQ

Q. With respect to ULLAS, consider the following statements:

1. It aims to increase child education in rural areas.
2. Along with reading and writing, it seeks to achieve digital and financial literacy.
3. It is an initiative under Ministry of Skill Development.

How many of the above statement(s) is/are correct?

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

Answer: (a) (Only 2)


Descriptive Question

Q. What are the various initiatives taken by the government of India for implementation of National Education Policy 2020? Discuss the challenges associated with them. [15 Marks] [250 Words].

OVERESTIMATION OF ANAEMIA PREVALENCE

Why in News: The overall prevalence of iron deficiency was just 18.4%, it was highest among adolescent girls (31.5%) followed by adult women (27.7%), and elderly women (13.6%); even among anaemic women, only about a third was due to iron deficiency.

- Key details**
- A multi-institutional study was conducted by a research team affiliated with St. John's Medical College, Bengaluru.
 - The study encompassed eight states across India.
 - A total of 4,613 participants were involved in the study. The participants were categorized into three distinct age groups: adolescents (647 females and 674 males), adults (931 females and 927 males), and elderly (714 females and 720 males).



Venous blood reveals true anaemia prevalence

The NFHS surveys measured haemoglobin using capillary blood leading to overestimation of anaemia

blood while drawing the blood sample leading to dilution, thus reducing the haemoglobin value

adolescent girls

- The prevalence of anaemia among women was highest in Assam (78.3%) and lowest in Meghalaya (14.6%)
- Only about a fifth of anaemia in elderly women was due to iron deficiency, and 45% among adolescent girls
- The major proportion of anaemia is from unknown causes. But iron deficiency is wrongly assumed to be main driver of anaemia in India
- Providing iron supplementation for the entire population needs reconsideration, particularly as excess iron intake can be harmful

Anaemia prevalence was found to be predominantly mild across eight States. 18.4% were mildly anaemic, 14.7% moderately anaemic, and 1.8% severely anaemic

Anaemia prevalence was 44%, 41% and 45% in adolescent girls, adult and elderly women, respectively. As per the NFHS surveys, anaemia prevalence was 60.8% for women and 62.6% for

Blood diagnosis: The WHO recommends that anaemia be diagnosed from venous blood and not capillary blood. SPECIAL ARRANGEMENT

- Red blood cell count in the capillary blood is a little lower than venous blood. Tissue fluid gets mixed with capillary

ANAEMIA MUKT BHARAT

Under AMB strategy, the interventions for tackling the problem of anaemia in all the States and UTs include

- **Prophylactic Iron and Folic Acid** Supplementation in all six target age groups
- Intensified year-round **Behaviour Change Communication (BCC)** Campaign for:
 - improving compliance to Iron Folic Acid supplementation and deworming,
 - enhancing appropriate infant and young child feeding practices,
 - encouraging increase in intake of iron-rich food through diet diversity/quantity/frequency and/or fortified foods with focus on harnessing locally available resources, and
 - ensuring delayed cord clamping after delivery (by 3 minutes) in health facilities
- The program focuses on identifying and treating anaemia, particularly in pregnant women and adolescents. It utilizes **digital tools, point-of-care testing, and intravenous iron sucrose/blood transfusions** for severe cases.
- It addresses underlying causes of anaemia beyond nutrition, targeting endemic areas with **malaria, blood disorders, and fluorosis**.
- The program incentivizes healthcare workers to identify and monitor **high-risk pregnant women in priority districts**. It also emphasizes training healthcare professionals and raising community awareness.

The measures taken by the Government to make AMB programme more effective are

- working with other line departments and ministries for strengthening implementation
- engaging **National Centre of Excellence and Advanced Research on Anaemia Control (NCEAR-A)** at AIIMS, Delhi in capacity building of health care providers
- To address challenges in healthcare provider training during COVID-19, the Anaemia Mukh Bharat program improved supply chains, developed a **training toolkit, and launched e-learning modules**.

Conclusion

A large-scale study in India using **venous blood samples** found a lower overall prevalence of anaemia compared to **finger-prick tests**. Iron deficiency was not the sole cause, affecting only a third of anaemic women. **Adolescent girls and adult women showed the highest rates**. The **Anaemia Mukh Bharat program** tackles this issue through supplementation, dietary changes, and treatment for underlying causes.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Anaemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs.
2. Sickle cell anaemia is a hereditary form of anaemia in which a mutated form of haemoglobin distorts the red blood cells into a crescent shape at low oxygen levels.
3. National Sickle Cell Anaemia Elimination Mission aimed to reduce its prevalence by 3% points per year between the years 2018 and 2022.

4. The Anemia Mukh Bharat strategy is designed to eliminate Anaemia by 2047.

How many of the above statement(s) is/are correct?

- (a) Only one (b) Only two
 (c) Only three (d) All of the above

Answer: (b)(only 1 and 2)

Descriptive Question

Q. "Anemia among men in India constitutes a significant public health issue that often goes overlooked." Examine. [15 Marks] [250 Words].

DIP IN INDIA'S FERTILITY RATE

Why in News: Recently, a study by **Lancet on global fertility rates** has projected fall in **India's total fertility rate (TFR)**.

Key details

- **India's total fertility rate (TFR)**, or births per woman, is predicted by The Lancet to **drop to 1.29 by 2050**.
- **One in five Indians will be elderly by 2050**, and there

won't be as many younger people around to look after them.

- India's average number of children born per woman, or total fertility rate (TFR), is **permanently declining to 1.29**, a significant decrease from the replacement rate of 2.1.

Total Fertility Rate (TFR)

- TFR is the **average number of children a woman would have in her lifetime if she lived to the end of her reproductive life** and experienced the age-specific fertility rates that are now in place.
- TFR is a **socioeconomic and demographic measure**.

Calculation of Total Fertility Rate

- The total fertility rate is calculated by **summing the age-specific fertility rates for all women and multiplying by 5**.
- The seven five-year age groups have fertility rates ranging from 15–19 to 45–49.

TFR trend in India

- The TFR in India was 6.18 in 1950, dropped to 4.60 in 1980, and then fell much lower to 1.91 in 2021.

Reasons of Fertility Rate going down in India

- There was a **necessity to limit the population after independence**.
- Therefore, the goal of the **Family Welfare Programme was to persuade people to have no more than two children** by offering financial transfer incentives relating to maternal and child health.
- **Infant mortality has significantly decreased** (as a result of many maternal and child health-related programs and successful immunization), **ensuring kid survival**.
- Due to **successful immunization campaigns** and several programs pertaining to maternal and child health, infant mortality has significantly decreased.
- Because there was an increased chance of child survival, **small families started to become the norm**.
- Increase in **Women's engagement in the workforce and their literacy**
 - Due to concerns about their careers, financial gains, and financial independence, they are reconsidering their options of **having a second child**.

CHAHAL's PERSPECTIVE

Low Fertility Rates



ADVANTAGES

- **Reduced fertility has a good effect on women's education**, which in turn reduces the **fertility of subsequent generations**.
- **Fertility declines and income increases with improved infrastructure, health care, and education**.
- **Demographic Dividend** : When fertility declines, there is a **brief period of time during which the working-age population's ratio rises** above that of the dependent age groups.
- The large percentage of the population in the **labor force increases investment and income** because of the **increased level of saving brought about by decreased reliance**.
- In addition to **relieving pressure on land, water, and other resources**, the **declining fertility rate will help achieve environmental goals**.

DISADVANTAGES

- The **population's proportion of elderly people will rise dramatically** as a result of the reduction in fertility.
- Along with these difficulties, there will be a **labor force shortage and possible gender-based societal inequality**.
- **Creativity** : While the **working-age population may be more productive** due to **education and technical advancements**, a decline in fertility may **limit humankind's creative potential**.
- **Global interest rates** : As the proportion of the population **over 50 years old approaches 40% by 2100**, an aging population will have a **negative impact on global interest rates**.

Way Forward

- Scandinavian nations—like **Norway and Denmark**—have much to teach us. In order to promote **gender parity**, they finance healthcare, offer inexpensive child care, and launch extensive programs aimed at engaging men.
- Men would need to **shoulder more of the caregiving and home responsibilities** if they wanted women to be able to balance professions and parenthood.
- **Policies to increase fertility**
 - More **parental benefits and leave are permitted in Germany**.
 - In **Denmark**, state-funded IVF is available to women under 40.
 - IVF clinics were recently **nationalized in Hungary**.
 - Poland provides parents with **more than two children** with a monthly **monetary stipend**.
 - After the **birth of their second child**, parents in **Russia receive a one-time payment**.

Conclusion

To adapt to and mitigate the effects of declining birth rates, economic policies that support growth and job creation will be essential, in addition to improvements to social security and pension systems.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. TFR is the average number of children a woman would have in her lifetime if she lived to the end of her reproductive life.
2. India has a TFR of 2.2 as of 2021.
3. TFR of China has fallen well below 1.0 as of 2021.

How many of the above statement(s) is/are correct?

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

Answer: (a)

Descriptive Question

Q. Discuss the consequences of declining fertility rate of India. Explain the role of government in determining the fertility rate. [10 Marks] [150 Words].

NATIONAL ACTION PLAN FOR PREVENTION AND CONTROL OF SNAKEBITE ENVENOMING (NAP-SE)

Why in News: The Union Health Ministry launched the National Action Plan for Prevention and Control of Snakebite Envenoming (NAP-SE) in India.

Key details

- Snakebite envenoming, or poisoning caused by snake bites, is a critical global health concern.
- The World Health Organization (WHO) has classified it as a **high priority neglected tropical disease**.
- Around the world, **an estimated 1.8 to 2.7 million people suffer from snakebite envenoming annually**.

The National Action Plan for Snakebite Envenoming (NAP-SE)

The newly launched NAP-SE aims to significantly reduce snakebite deaths and disabilities in India by 2030. This ambitious vision will be pursued through a multi-pronged approach:

- **Systematic Reduction of Envenoming Risk:** Ensuring sustained availability of effective anti-snake venom is a crucial component.
- **Capacity Building:** Healthcare workers will receive enhanced training to improve diagnosis, treatment protocols, and overall snakebite management.
- **Strengthened Referral Mechanism:** Establishing a robust referral system will ensure timely access to specialized care for critical cases.
- **Public Education:** Raising public awareness about snakebite prevention and first-aid measures is vital for reducing envenoming risk, particularly in vulnerable communities.

One Health Approach

- NAP-SE adopts the “One Health” approach, recognizing the interconnectedness of human, animal, and environmental health.
- This collaborative strategy brings together various sectors like healthcare, veterinary services, and environmental management to address snakebite challenges holistically.

RISE IN OBESITY RATES

Why in News: India’s obesity rate rose from **1.2% among women in 1990 to 9.8% in 2022**, and from 0.5% among males in 1990 to 5.4% in 2022.

Key details

- High cholesterol is becoming increasingly common among young adults, despite the misconception that it primarily affects older individuals.
- The **lack of noticeable symptoms** until later stages makes this a silent health threat, potentially starting in the teenage years and leading to heart complications in young adulthood.

What’s the ideal range of cholesterol?

- Cholesterol, a waxy substance produced by the liver, is essential for hormone production, vitamin D synthesis, and bile salt production (used in digestion). It travels in the bloodstream via lipoproteins, including **HDL (good cholesterol) and LDL (bad cholesterol)**.
- Ideally, HDL levels should be **50 mg/dL** or higher, while LDL levels should be kept low. Specifically, for Indians with a higher risk of heart disease, LDL cholesterol should be **below 100 mg/dL**.
- An LDL reading of **130 to 159 mg/dL** is considered borderline high, 160 to 189 mg/dL is high, and **190 mg/dL or above is very high**.

What causes cholesterol spike in the young?

- Young people’s cholesterol levels can be negatively affected by **lifestyle choices, such as consuming processed and fast foods** high in unhealthy fats and lacking physical activity. This can lead to a build-up of cholesterol and an imbalance between LDL (bad) and HDL (good) cholesterol.
- High sugar intake can also contribute to high cholesterol, particularly **high triglyceride levels and low HDL levels**.
- Genetics and certain medical conditions like **diabetes** can also influence cholesterol levels in young individuals.

The Imperceptible Danger

- High cholesterol in young people is often asymptomatic, leading individuals to be unaware of the condition and its potential consequences.

- Uncontrolled high cholesterol can cause plaque buildup in arteries (atherosclerosis), restricting blood flow and raising the risk of **heart attacks, strokes, and other cardiovascular problems**.
- The damage caused by bad cholesterol (LDL) to arteries is irreversible and accumulates over time.

THE OBESITY MAP					
India			World		
	1990	2022		1990	2022
Men	1.1	26	Men	67	374
Women	2.4	44	Women	128	504
Boys	0.2	7.3	Boys and girls (total)	31	160
Girls	0.2	5.2			

Primary detection and prevention

- Cholesterol screening is recommended **every five years for young adults** (20 years and older) and annually for those with a predisposition. Early detection allows for timely intervention to prevent future complications.
- **Lifestyle modifications** are the cornerstone of managing cholesterol. These include a balanced diet rich in fruits, vegetables, whole grains, and lean protein, regular physical activity, weight management, smoking cessation, and moderate alcohol consumption.
- For individuals requiring medication, lifestyle changes can significantly improve the effectiveness of cholesterol-lowering drugs.

Way Forward

Obesity in adolescents requires government policy, community initiatives, and individual actions. Restrict unhealthy food sales, junk food advertisements, nutritional labelling, and school cafeterias are essential.

Expected Questions for UPSC CSE

Descriptive Question

Q. What are the main reasons for the rising obesity in Indian population? What comprehensive strategies can India implement to tackle the alarming rise in obesity rates across various demographic groups, considering cultural, socioeconomic, and lifestyle factors? [10 Marks] [150 Words]

SHANKARACHARYA TEMPLE

Why in News: After arriving in Srinagar, Prime Minister bowed down to the Shankaracharya Hill from a distance.

Key details

- However, there is **no consensus with regard to an exact date of construction**. Ancient historian Kalhana mentions that King Gopaditya built the temple on the top of the hill as a shrine to (Shiva Jyestharuda) around 371 BCE.
- The earliest historical reference to the shrine hill is by Kalhana. He called the **mountain 'Gopadri' or 'Gopa Hill'**. This area at the base is now called Gupkar.
- Also, the Alchon Hun king, Mihirakula is said to have been the founder of the temple, dedicated to Shiva.
- It is here that the literary work Saundarya Lahari was composed by Adi Shankaracharya as per some historians.

SHANKARACHARYA TEMPLE



- ▶ **Oldest Hindu shrine in Kashmir.**
- ▶ Located on the **Shankaracharya Hill**, also known as the Hill of Solomon. This hill is part of the **Zabarwan Mountains** in Srinagar, Kashmir.
- ▶ Very old temple, established on a **mountain (1100 feet)**.
- ▶ Dedicated to **Lord Shiva**.
- ▶ The temple is also special because a famous saint named **Adi Shankaracharya once visited**.
- ▶ He even set up religious centers in other places.

History of the Shankaracharya Temple

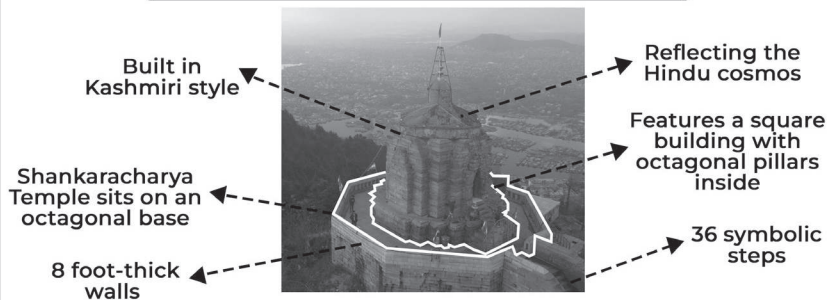
▶ Built

- ▶ Around 200 BC, although the current structure is most likely from the **9th century AD**.

▶ Known by different names

- ▶ People who follow **Hinduism** call it **Shankaracharya Temple** or **Jyesteshwara Temple**.
- ▶ **Buddhists** know it as **Pas-Pahar**.
- ▶ People from **Persia** and those who follow **Judaism** call it **Bagh-i-sulaiman**, which means "**Garden of King Solomon**". There are even Persian writings you can find inside the temple.

Architecture



Adi Shankaracharya

- Born in 788 CE in Kerala, Adi Shankaracharya and propounded Advaita Vedanta (Non-Duality) philosophy.
- He interpreted the Vedas, stating Brahman is the ultimate reality and the world an illusion (Maya).

- Emphasizing renunciation and meditation, he revived Hinduism and unified philosophical schools. He established four mathas (monasteries) across India.
- His key works and teachings continue to significantly influence Indian thought and spirituality. For example: Vivekachudamani, Upadesa Sahasri.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Shankaracharya Temple:

1. This ancient temple is built in the indigenous early Dravidian style of architecture.
2. Persian inscriptions are found inside the temple.
3. It is a massive stone structure built on a high hexagonal plinth about thirty feet high.

How many above statements are Incorrect?

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

Answer: (a) (1 and 3 only)

KASI MASAN HOLI

Why in News: Recently, **Kasi Masan Holi** was celebrated in the city of **Varanasi, Uttar Pradesh**.

Key details

- **Kasi Masan Holi** is celebrated on the day after **Rangbhari Ekadashi**, which comes before the **major Holi holiday**.
- “**Masan ki Holi**” means “**Holi of the cremation ground**” or “**Bhabhoot Holi**.”
- The **Local Authority** arranges **Masan ki Holi**.

About Kasi Masan Holi

- **Varanasi**, in particular, and the Indian state of **Uttar Pradesh** celebrate the unique festival known as **Kasi Masan Holi**.
- It is sometimes referred to as “**Gauri Holi**” or “**Gauri-Maheshwar Holi**.”

How is it different from Traditional Holi?

- Unlike the usual **Holi festival**, which involves **throwing colors and water at each other**, **Kasi Masan Holi** is a **solemn and ritualistic event** held in the **holy city of Varanasi**.
- The event honors **Lord Shiva and Goddess Parvati**, also known as **Gauri and Maheshwar**.
- According to tradition, the festival began when **Lord Shiva instructed his disciples to fast and send flowers to him and Goddess Parvati**. On the other hand main Holi is held on the day of **Phalgun Purnima**, which occurs in **February or March**.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Kasi Masan Holi is played in the city of Varanasi.
2. Kasi Masan Holi is celebrated on the day after Rangbhari Ekadashi, which comes before the major Holi holiday.
3. The event honours Lord Shiva and Goddess Parvati, also known as Gauri and Maheshwar.

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. Discuss the significance of **Kasi Masan Holi** in **Varanasi**. Also highlight its differences from the traditional **Holi festival**. [10 Marks] [150 Words].

LISU AND SINGPHO TRIBAL COMMUNITIES

Why in News: Recently, **Lisu and Singpho Communities** got into light due to their **numbering name tradition**.

Key details

- In the Indian state of **Arunachal Pradesh**, the **Lisu or Yobin community** name their children according to their **birth order**.
- A noteworthy feature of their culture, this **unusual naming custom** emphasizes the **value of family and custom** in the **Lisu society**.

About the Numbering Tradition

- In the **Lisu and Singpho communities**, it is customary to number names.
- Boys and girls in **Lisu** have **different sets of numbered names** that correspond to their birth order.
- A family's eldest daughter is named **Ana**, and the daughters that follow are named **Angyi, Acha, Ado, Achhi, Ata, Akhu, Agu, Aju, and Apshi**, for the **tenth daughter**.

About Singpho Community

- The **Singphos** are an ethnic group that **live in 27 countries**, including the **province of Yunnan in China**. Compared to other tribal societies, their degree of complexity is lower.

- **Location in India :** They primarily live in the Tinsukia district of Assam and the Changlang and Namsai districts of Arunachal Pradesh in India.
- **Categories:** The Singpho society is primarily organized into three groups: Sisen, N'khum, and Mirip. Each of these groups is further subdivided into several clans, each headed by a chief.
- **A clan's organization is determined by its lineage or sub-lineage.**

Singpho Revolt

- The Singpho revolt occurred in Assam.
- **The Singpho Community, who are native to Northeast India and Myanmar, rebelled in 1830.**
- Resistance to **British colonial rule fueled their insurgency**, particularly in Assam.
- This rebellion was part of a **larger resistance movement in colonial India**, in which local communities banded together to oppose European colonizers.
- **The Singpho Rebellion was notable because it demonstrated the persistence of indigenous tribes in Assam against colonial invasion.**

About Lisu Community

- The Lisus live in the **adjoining mountainous regions of Arunachal Pradesh, China, Myanmar, and Thailand.**
- They are part of the **Tibeto-Burman family.**
- There are approximately **5,000 of them in India.**
- The **Lisus and Singphos share a naming system** and use numbers in their names, likely due to their affiliation with the **Wunpong group**, which includes **four further groups in Myanmar's Kachin State.**
- **Boys and girls in Lisu have different numerical names** based on their birth order.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Lisu and Singpho Tribal Communities,

1. The Singphos are an ethnic group that live in 27 countries.
2. Lisu and Singpho Communities got into light due to their numbering name tradition.
3. The Singpho society is primarily organized into two groups: Sisen, and Mirip.

How many of the above statements are correct?

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

Answer: (b) (1 and 2 only)

Descriptive Question

Q. Give brief account of the Singpho revolt? State its significance in the freedom movements against colonial rule in the Northeast India. [10 Marks] [150 Words].

GULAAL GOTA

Why in News: As Holi was celebrated all over India, medieval craft of colour balls called Gulaal Gota" are in news.

What is Gulaal Gota

- A Gulaal Gota is a **tiny ball made from a special material called lac**. Inside this little ball, people put dry gulaal, which is a colorful powder used during the Holi festival. People playfully throw these Gulaal Gotas at each other. The ball bursts open, releasing a burst of vibrant colors.

Process of making Gulaal Gota

- To make the lac soft, **boiling it in water before preparing Gulaal Gotas** is required.
- The **lac is coloured after moulding it**. Red, yellow, and green are introduced initially since those colours can be combined to create other colours.
- The lac is heated by artists once processing is complete.
- A **blower known as a "phunkni"** is then used to blow it into a spherical shape.
- Lastly, the balls are filled with gulaal before being enclosed by using lac.

Where Gulaal Gotas are made?

- Gulaal Gotas are **made by Muslim lac makers, called Manihaars, only in Jaipur**. Tradition of making of Gulaal Gota tradition goes back to medieval India 400 years back. It has become inseparable part of heritage of Jaipur and Rajasthan.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the Gulaal Gota:

1. Gulaal Gotas are made by Muslim lac makers, called Manihaars, only in Jaipur.
2. A Gulaal Gota is a tiny ball made from a special clay material called Lal mitti.

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)

Descriptive Question

Q. Elaborate the social and religious aspects of Gula Gota in the Holi celebrations and their role in fostering unity and cultural identity among communities in India. [15 Marks] [250 Words].

DELISTING OF MONUMENTS

Why in News: The Archaeological Survey of India (ASI) recently made the decision to **remove eighteen “centrally protected monuments”** from its list.

Key details

- The ASI concluded that as these **18 centrally protected monuments lacked national significance**, they were delisted. The ASI has previously **classified these monuments as “untraceable”**.
- A medieval roadway landmark known as **Kos Minar No. 13 in Mujessar village** in Haryana, **Barakhamba Cemetery in Delhi**, **Gunner Burkill’s tomb in Jhansi district**, a **cemetery at Gaughat in Lucknow**, and the **Telia Nala Buddhist ruins in Varanasi** are a few of the sites that are currently under delisting.
- Neither the exact location nor the state of these monuments’ physical conditions is known.



<p>1 Alexander Cunningham founded it in the year 1861.</p> <p>Following independence, the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (AMASR Act) created it as a statutory body.</p> <p>The ASI is in charge of the nation’s cultural monument conservation and preservation efforts as well as archaeological research.</p> <p>Frequent Inspection: ASI staff members are required by the AMASR Act to conduct routine inspections of monuments in order to evaluate their state.</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p>	<p>5 Authority to Remove Encroachments: ASI staff members also have the ability to notify local authorities of the necessity for encroachment demolition, submit police reports, and issue show cause notices in order to remove encroachments.</p> <p>It additionally enforces the Antiquities and Art Treasure Act, 1972.</p> <p>Among its tasks are surveys of antiquarian remnants, archaeological site research and excavation, preservation and upkeep of protected monuments, and so forth.</p> <p>8 Concerned Ministry: Ministry of Culture.</p>	<p>5</p> <p>6</p> <p>7</p> <p>8</p>
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Delisting of Monuments by ASI

- **Ancient Monuments and Archaeological Sites and Remains Act, 1958:** The decisions are made in accordance with the standards specified in this legislation.
- **Section 35-** It asserts that the **Central Government may declare by notification in the Official Gazette** that any ancient monument, archaeological site, and remains therein shall **no longer be deemed to be of national importance** if it believes they are **no longer of national importance**.
- **Untraceable-** It describes places that have **disappeared** as a result of a variety of causes, including **urbanization, encroachment, the building of dams and reservoirs, or just plain neglect.**
- **Lost monuments-** Certain lesser-known locations have **decayed or vanished, leaving no trace of their existence in the collective memory.**
- **Public feedback-** Public comments or suggestions about the delisting of these monuments are **invited through a gazette notification.**

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Which of the following acts provided the legal framework for the establishment of the Archaeological Survey of India (ASI) as a statutory body?
- (a) Ancient Monuments and Archaeological Sites and Remains Act, 1958
 - (b) Antiquities and Art Treasure Act, 1972
 - (c) Indian Archaeological Sites and Relics Act, 1940
 - (d) National Heritage Protection Act, 1966

(a) Answer:

Descriptive Question

Q. What are the reasons for delisting of some Monuments by the Archaeological Survey of India (ASI) from “centrally protected monuments” list? Evaluate the challenges faced by ASI in maintaining and conserving India’s archaeological sites and monuments. [15 Marks] [250 Words].

MAJULI IN ASSAM GETS THE GI TAG

Why in News: Recently, Majuli masks and Majuli manuscript painting in Assam were given a Geographical Indication (GI) tag by the Centre.

Key details

- **The Geographical Indications of Goods (Registration and Protection) Act, 1999** governs the **issuance of GI tags.**

- The Geographical Indication Registry (**GIR**), a division of the Ministry of Commerce and Industry's Department of Industry Promotion and Internal Trade (**DPIT**), is responsible for issuing this tag.
- **Majuli Island**, a world's largest river island and a special place of **neo-Vaishnavite tradition in Assam**, India, has been making masks since 16th century AD.

About Majuli mask

- **The handcrafted masks** were first employed by reforming saint Srimanta Sankardeva to represent characters in **bhaonas, or theatrical performances** with devotional themes.
- Gods, goddesses, devils, animals, and birds may all be seen on the masks; among them are **Varaha Surpanakha, Hanuman, Narasimha, Garuda, and Ravana**.
- The masks are made from a range of **materials**, such as bamboo, clay, dung, cloth, cotton, and wood. Their sizes range from only covering the performer's face (**mukhmukha**) to covering their entire head and body (**chomukha**).
- Majuli has **22 sattras**, with mask-making tradition primarily concentrated in **Samaguri, Natun, Bihimpur, and Alengi Sattras**. They also host traditional performing arts like borgeet(songs), xattriya(dance), and bhaona(theatre).

About Majuli manuscript or painting

- **Ancient Art Form:** Majuli manuscript paintings draw inspiration from the **Pala school (8th-12th centuries)**, known for its colorful, detailed depictions of **Buddhist themes**, reflecting a similar focus on religious art in the **Majuli style**.
- **Unique Technique:** The paintings are done on a special canvas made from the bark of the sanchi/agar tree and use homemade ink.
- **Enduring Tradition:** Supported by royalty (Ahom kings) and still practiced in Majuli's sattras (religious centers), this art form **recently received a GI tag** recognizing its cultural significance.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Majuli Mask:

1. These are handmade masks traditionally used to depict characters in bhaonas, or theatrical performances with devotional messages under the neo-Vaishnavite tradition.
2. Srimanta Sankardeva established this art of masks through a play called Chinha Jatra.
3. The masks are made of bamboo material exclusively.

How many of the above statements are correct?

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

Answer: (b) (1 mark 2 only)

BADAMI CHALUKYA TEMPLES

Why in News: 1,300-year-old temples from Badami Chalukyan period discovered in Nalgonda, Telangana.

Key details

- Inscription labelled as '**Gandaloranru**', dating back to the 8th or 9th century also found in Mudimaniyam village of Nalgonda district, Telangana situated along the banks of the Krishna River.
- The temples, estimated to be at least 1,300 years old, showcase unique architectural styles, **blending Badami Chalukyan** and Kadamba Nagara influences.
- In one temple, a **panavattam** (base of a Shiva lingam) in the sanctum sanctorum has been found. In another, a **Vishnu idol was recovered**.



About Badami Chalukya Temples

- The **Badami Chalukya architectural style** emerged during the reign of the **Badami Chalukya dynasty** in Southern India, primarily in the **6th to 8th centuries AD**.

- The dynasty's patronage of art and architecture has been witnessed in the construction of magnificent temples and monuments, including the cave temples at **Badami, Aihole, and Pattadakal**, which are recognized as **UNESCO World Heritage Sites**.

About Chalukyas

- The Chalukyas ruled over the **central Indian plateau of the Deccan** between the **sixth and twelfth centuries**.
- During that period, they ruled as three closely related but individual dynasties: the **Chalukyas of Badami**, who ruled between the sixth and the eighth centuries, and the two sibling dynasties of the **Chalukyas of Kalyani**, or the **Western Chalukyas**, and the **Chalukyas of Vengi**, or the **Eastern Chalukyas**.
- The dynasty was founded by **Pulakeshin I**, who established his capital at **Vatapi**, known today as **Badami**.
- Under **Pulakeshin I** and his successors, the Badami Chalukyas expanded their territory through **military conquests and diplomatic alliances**, becoming one of the dominant powers in the Deccan region.
- They initially followed **Vedic Hinduism**. Later, from the time of Vikramaditya I, following rulers took an inclination towards **Shaivism**, and sects like **Pashupata, Kapalikas, and Kalamukhas** existed. They actively encouraged **Jainism**, as attested to by one of the Badami cave temples and other Jain temples in the Aihole complex.

Conclusion

The rich history of southern India can be studied more effectively with discovery of such monuments. The discovery is very important, and it **would give more insight into the religious practices of the Badami Chalukyan period**.

Expected Questions for UPSC CSE

Prelims MCQ

Q. With reference to the period of Chalukyas of Badami, consider the following statements:

1. They carved out cave temples belonging to both Hindu and Jaina tradition.
2. They built both Dravida and Nagara Style temples.
3. Most of the painting in the Ajanta and the Ellora caves were completed during this period.

How many of the above statements are correct?

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

(c) :Answer

GOVERNMENT SCHEMES

THE SCHEME FOR CREATION/ EXPANSION OF FOOD PROCESSING AND PRESERVATION CAPACITIES (CEFPPC)

Why in News: The Parliamentary Committee on Agriculture recently submitted a report on the “Scheme for Creation/ Expansion of Food Processing and Preservation Capacities (CEFPPC)”, highlighting its achievements and challenges.

Key details

- Recognizing significance of food processing sector, the Government of India launched the **Pradhan Mantri Kisan Sampada Yojana (PMKSY)** in 2016.
- The **CEFPPC scheme**, a component of PMKSY, aims to boost the growth of this sector by providing financial assistance for establishing and expanding food processing units.

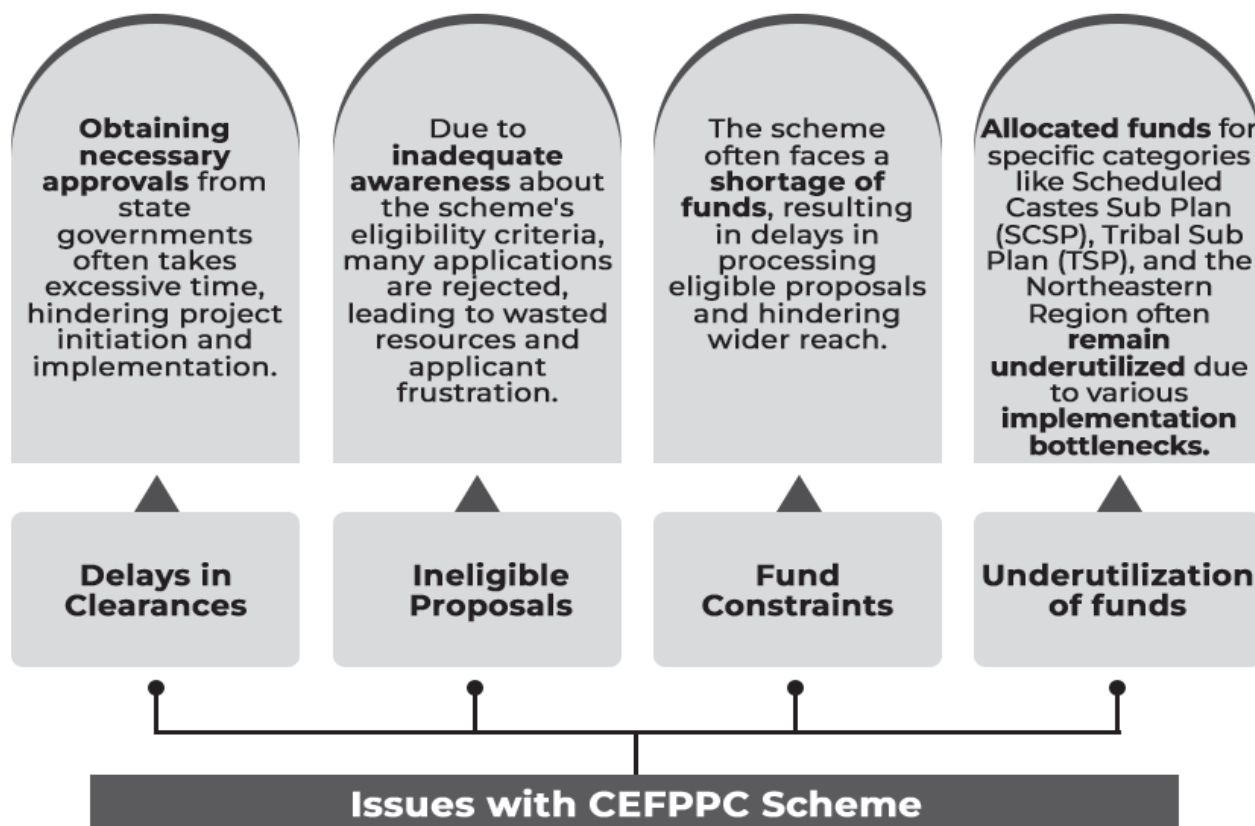
Key Features and Objectives

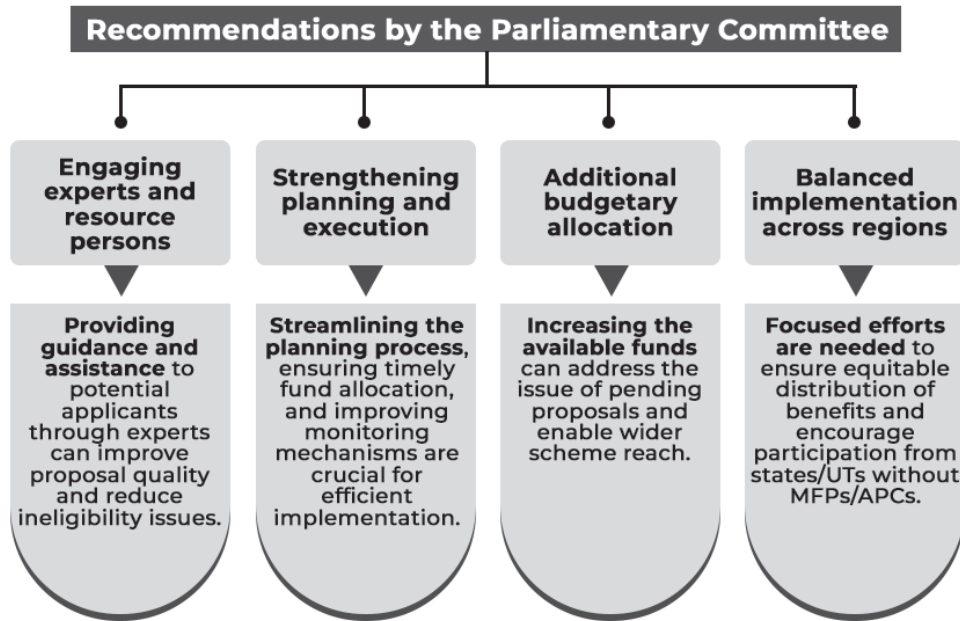
- The CEFPPC scheme, implemented by the Ministry of

Food Processing Industries (MoFPI), offers grants-in-aid to eligible entities for setting up or expanding food processing units.

• The key features of the scheme

- **Financial Assistance:** Grants are provided at a rate of **35% of the project cost in general areas and 50% in difficult areas, for SC/ST entrepreneurs, Farmer Producer Organizations (FPOs), and Self-Help Groups (SHGs)**. The maximum grant amount is capped at Rs. 5 crores.
- **Focus Areas:** The scheme prioritizes **setting up units within Mega Food Parks (MFPs) and Agro-processing Clusters (APCs)**, allocating 60% of the funds for such units. The remaining 40% supports units in other locations.
- **Implementing Agencies:** The scheme encourages participation from diverse entities like Central and State Public Sector Undertakings (PSUs), FPOs, SHGs, and cooperatives.





Sub-Segments and Importance of Food Processing sector

India boasts a vibrant food processing landscape, encompassing diverse segments:

- **Fisheries:** With a total production of 16.24 million tonnes (2021-22), seafood processing holds immense export potential, as evidenced by the record-breaking exports of \$7.76 billion in FY 2021-22.
- **Meat Processing:** Though facing religious and cultural constraints, India’s meat processing industry caters to domestic demand, with production reaching 9.29 million tonnes in 2021-22.
- **Fruits and Vegetables:** With a production of 342.33 million tonnes (2021-22), India offers abundant raw material for processing value-added products like juices, frozen vegetables, and dehydrated fruits.
- **Dairy:** Ranking first globally in milk production (221.06 million tonnes, 2021-22), India offers significant potential for processing various dairy products with extended shelf life, catering to both domestic and export markets.
- **Other Segments:** Rice, Sugar, and Edible Oils are other crucial sub-segments, contributing significantly to India’s food security and export earnings.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements about “Scheme for Creation/Expansion of Food Processing and Preservation Capacities” (CEFPPC):

1. Pradhan Mantri Kisan Sampada Yojana (PMKSY) is a component of (CEFPPC) scheme.

2. The CEFPPC scheme is implemented by the Ministry of Food Processing Industries (MoFPI).

Which of the above statement(s) is/are correct?

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

Answer: (b)

Descriptive Question

Q. Why food processing industry is considered as the sun rising industry? How it is important for the tackling problem of jobless growth in Indian economy? Discuss. [15 Marks] [250 Words].

PROMOTION OF MANUFACTURING OF ELECTRIC PASSENGER CARS IN INDIA

Why in News: The Indian government has taken a significant step towards establishing itself as a global electric vehicle (EV) hub with the approval of a new scheme to promote the manufacturing of electric passenger cars.

Key details

- **Investment Threshold:** Companies seeking to participate must commit to a **minimum investment of Rs 4,150 crore** (USD 500 million) within a three-year window.
- **Domestic Value Addition (DVA):** Manufacturers **need to achieve 25% DVA within three years** and 50% within five years of approval.
- **Performance Benchmarking:** All participating companies

must adhere to the performance criteria stipulated under the Production Linked Incentive (PLI) Auto scheme.










- **Project Management and Tenure:** The scheme will be implemented for a period of five years, with a Project Management Agency (PMA), **Ministry of Heavy Industries (MHI)** providing secretarial and managerial support.

Electric Vehicles (EVs)

- All-electric vehicles, also referred to as battery electric

vehicles (BEVs), have an **electric motor instead of an internal combustion engine**.

- The vehicle uses a large traction battery pack to power the electric motor and must be plugged in to a wall outlet or charging equipment, also called **electric vehicle supply equipment (EVSE)**.
- Because it runs on electricity, the **vehicle emits no exhaust from a tailpipe and does not contain the typical liquid fuel components**, such as a fuel pump, fuel line, or fuel tank.

ADVANTAGES OF ELECTRIC VEHICLES (EVs)	CHALLENGES IN IMPLEMENTATION
<p> Attract Global Investments: The scheme aims to attract leading EV manufacturers like Tesla, potentially boosting India's EV ecosystem.</p> <p> Manufacturing Hub: India aspires to become a global EV manufacturing hub, creating new jobs and boosting exports.</p> <p> Reduced Imports: Increased domestic production can reduce dependence on crude oil imports, improving energy security.</p> <p> Environmental Benefits: Widespread EV adoption can significantly reduce air pollution in urban centers.</p>	<p> Competition: Existing Indian manufacturers may struggle to compete with established global players.</p> <p> DVA Hurdles: Achieving the stipulated DVA targets might be challenging initially, requiring robust supply chains.</p> <p> Infrastructure Gap: Developing a nationwide charging infrastructure network is crucial for EV adoption.</p> <p> Battery Costs: High battery cost remain a barrier to consumer affordability, requiring technological advancements and subsidies.</p> <p> Skill Development: Skilling the workforce for EV manufacturing and maintenance is essential.</p>

India's EV Strategy

- **FAME India Scheme:** Launched in phases (2015 and 2019), this scheme provides financial incentives for EV adoption by offering subsidies on purchase.
- **PLI Scheme for Auto and Auto Components:** Introduced in 2021, this scheme offers financial incentives to promote domestic manufacturing across the entire automotive value chain, including EVs.
- **EV 30@30 Initiative:** This ambitious plan aims to achieve a 30% share of new vehicle sales by EVs by 2030.
- **National Electric Mobility Mission Plan (NEMMP) 2020:** The **National Electric Mobility Mission Plan (NEMMP) 2020** aimed to promote electric vehicle adoption in India by 2020, targeting 5-7 million vehicles on the road. This plan emphasized government incentives, industry-academia collaboration, and potential environmental benefits like reduced oil consumption and CO2 emissions.

Way Forward

- **Skilling and Workforce Development:** The transition to EVs necessitates a skilled workforce. Investing in skilling programs will be crucial to bridge potential skill gaps.
- **Developing Robust Charging Infrastructure:** A widespread and reliable charging infrastructure is essential to alleviate range anxiety among consumers and encourage EV adoption.
- **Battery Recycling and Sustainability:** Developing a robust battery recycling ecosystem is crucial for environmental sustainability and cost reduction in the long run.
- **Financing Options for Consumers:** Offering attractive financing options, such as low-interest rate loans, can incentivize consumers to purchase EVs, especially in the initial stages.
- **Standardization and Regulations:** Implementing clear and standardized regulations for EV manufacturing and battery safety will ensure consumer confidence and industry growth.

Conclusion

By addressing these aspects such as hurdles like **battery cost infrastructure gap etc. alongside the new manufacturing scheme**, India can take a significant leap towards becoming a global leader in the electric vehicle revolution.

Expected Questions for UPSC CSE

Prelims MCQ

Q1. Consider the following statements regarding Scheme to Promote Manufacturing of Electric Passenger Cars in India:

1. Ministry of Electronics and Information Technology providing secretarial and managerial support.
2. Manufacturers need to achieve 25% Domestic Value Addition (DVA) within three years and 50% within five years of approval.
3. The scheme will be implemented for a period of five years.

How many of the above statements are correct?

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

Answer: (b) and (c) only

Descriptive Question

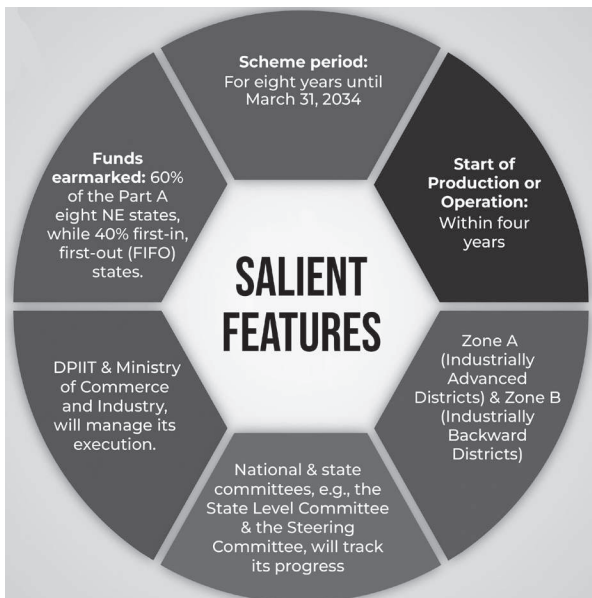
Q. What is the principle of working of e-vehicles? What are its advantages and disadvantages with respect to hybrid vehicles? Discuss the government initiatives to promote e-vehicles in India. [15 Marks] [250 words]

UNNATI (UTTAR POORVA TRANSFORMATIVE INDUSTRIALIZATION SCHEME)

Why in News: Recently, The Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024) proposal from the Department for Promotion of Industry and Internal Trade (DPIIT) was approved by the Union Cabinet.

Key details

- It aims to establish manufacturing and service-related companies and create jobs in the Northeast region by fostering productive economic activity.
- Its primary goal is to provide productive employment, which will contribute to the region’s general socioeconomic growth.
- Expenditure
 - This will be a Central Sector Scheme;
 - Two sections are suggested:
 - ◆ Part A provides incentives to qualifying units (up to Rs. 9737 crores), while
 - ◆ Part B handles the scheme’s institutional setup and execution. (three hundred crore rupees).



Conclusion

The UNNATI program will promote socioeconomic development, industrial expansion, and the establishment of a favourable environment for the manufacturing and service sectors in the Northeast.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding UNNATI 2024:

1. The Uttar Poorva Transformative Industrialization Scheme (UNNATI – 2024) is a 20-year Central Sector Scheme aimed at fostering industrial development and employment generation.
2. It aims for the development of the North-Eastern region only.

Which of the statements given above is/are correct?

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

Answer: (b)

Descriptive Question

Q. Explain the objectives and key features of the Uttar Poorva Transformative Industrialization Scheme (UNNATI). How does it aim to address the industrial development challenges in the North-East region? [15 Marks] [250 Words].

FAME II

Why in News: The faster adoption and manufacturing of electric vehicles II scheme ended on March 31, 2024.

Key details

- The main objective of the scheme is to encourage faster adoption of electric and hybrid vehicles by offering an upfront incentive on the purchase of electric vehicles and also by establishing a necessary charging infrastructure for electric vehicles.

Features

- The emphasis is on the electrification of public transportation, which includes shared transport.

A Big Push Towards PM's Vision of Sustainable Transportation under FAME Scheme



FAME Phase II

- Being implemented for 3 years w.e.f. 1st April'19, with a budgetary support of ₹10,000 crore
- To support approx. 7000 e-Buses, 5 lakh e-3 Wheelers, 55000 e-4 Wheeler Passenger Cars, 10 lakh e-2 Wheelers & creation of charging infrastructure
- 670 new Electric buses sanctioned for Maharashtra, Goa, Gujarat & Chandigarh
- 241 new Charging Stations sanctioned for Madhya Pradesh, Tamil Nadu, Kerala, Gujarat & Port Blair

- **Demand incentives** on the operational expenditure model for electric buses will be delivered through State/city transport corporation (STUs).
- To encourage advanced technologies, the benefits of incentives will be extended to only those vehicles which are fitted with advanced batteries like **lithium-ion batteries** and other new technology batteries.
- The scheme proposes the establishment of **charging infrastructure**, whereby about **2700 charging stations will be established in metros**, other million-plus cities, smart cities, and cities of hilly states across the country so that there will be availability of **at least one charging station in a grid of 3 km x 3 km**.
- Under the scheme of FAME-II, the demand incentive for e-2W has been increased to Rs. 15,000/KWh from Rs. 10,000/KWh, with an increase in cap from 20% to almost 40% of the cost of the vehicle to increase the adoption of e-2W.

Conclusion

India needs the **auto industry's active involvement to make the transition to electric mobility easier**. To increase consumer awareness, support domestic production, promote new business models, perform R&D for EVs and componentry, and investigate new business models to promote EVs, the auto and battery sectors should work together.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding FAME II scheme:

1. Through this scheme, it is planned to support 10 Lakh e-2W, 5 Lakh e-3W, 55000 e-4Ws, and 7000 e-buses.

2. There will be availability of at least one charging station in a grid of 3 km x 3 km.
3. The emphasis is on the electrification of public transportation.
4. In the 3W (3-wheeler) and 4W (4-wheeler) segments, incentives will be applicable mainly to vehicles used for public transport or registered for commercial purposes.

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

- (a) Only one (b) Only two
(c) Only three (d) All of the above

(d) Answer

Descriptive Question

Q. Elaborate the objectives and key features of the Faster Adoption and Manufacture of Hybrid and Electric Vehicles Phase two scheme (FAME II). Analyse the challenges and policy measures required to accelerate the adoption of electric and hybrid vehicles in the country. [15 Marks] [250 Words].

LAKHPATI DIDI YOJANA

Why in News: Prime Minister reiterated the aim of creating 3 crore Lakhpati Didi's across India.

Key details

- The Lakhpati Didi Yojana aims to create three crores 'lakhpati didis' (**prosperous sisters**) in villages across India by providing them with **tools to become financially self-reliant**. It is a **skill development programme** catering to **women in rural areas**.
- Implemented by the **Ministry of Rural Development**, Government of India, it aims to catalyze **economic empowerment** and **financial independence** among women in rural areas.
- A Lakhpati Didi is a **Self-Help Group member** who earns an **annual household income of Rupees One Lakh (₹1,00,000) or more**. This income is calculated for at least four agricultural seasons and/or business cycles, with an average monthly income exceeding Rupees Ten Thousand (₹10,000), so that it is sustainable.
- It seeks to support economically disadvantaged women, providing them with a **loan of INR 5 lakh without interest**. By doing so, the scheme **empowers women to initiate and grow their businesses, breaking free from financial constraints**.

Other Benefits

- Alongside financial aid, the Lakhpati Didi scheme offers various benefits-

- **Training for all women:** The scheme ensures comprehensive training opportunities for women, enhancing their skills and empowering them economically.
- **Connection with Self-Help Groups (SHGs):** Women are connected with SHGs, enabling them to receive training in areas such as making LED bulbs, plumbing, repairing drones, fostering financial independence.
- **Introduction of 20,000 women to self-help groups:** Lakhpati Didi facilitates the entry of 20,000 new women into self-help groups, encouraging them to initiate and manage their businesses.
- **Drone provision for agriculture:** Women SHGs will receive drones for agricultural activities, marking a technological shift to enhance the rural agricultural sector and empower women. Approximately 15,000 women's SHGs will undergo training in drone operation and repair. The integration of drones holds the potential to revolutionize agriculture, enabling precision farming, crop monitoring, and pest control.
- **Additional benefits of the scheme:** The scheme provides various additional benefits, including financial literacy workshops, credit facilities, vocational training, insurance coverage, talent development, financial incentives, virtual monetary inclusion, self-belief construction, work teaching, and empowerment.

Conclusion

The Lakhpati Didi Scheme represents a **significant step towards empowering women in rural India and fostering economic independence**. Through skill development, income generation, and broader inclusion, the scheme contributes to the government's vision of creating a more self-reliant and prosperous nation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding LAKHPATI DIDI YOJANA:

1. The Lakhpati Didi Yojana aims to create three crores 'lakhpati didis' by providing them tools to become financially self-reliant.
2. It is a skill development programme catering to women in both rural and urban areas.
3. It is implemented by the Ministry of Women and Child Development.

How many of the above statement(s) is/are correct?

(a) Only one (b) Only two

(c) All of the above (d) None of the above

Answer: (a) [1 Only]

Descriptive Question

Q. Examine the role of the Lakhpati Didi Yojana in addressing gender disparities in entrepreneurship and economic participation of Women in India. [10 Marks] [150 Words]

**PRADHAN MANTRI SAMAJIK
UTTHAN EVAM ROZGAR ADHARIT
JANKALYAN (PM-SURAJ) PORTAL**

Why in News: Recently, PM participated in a programme marking nationwide outreach for credit help to vulnerable groups.

Key details

- PM-SURAJ approves loan help for **1 lakh rupees** in businesses from underprivileged groups.
- More than 3 lakh beneficiaries of various government projects from disadvantaged groups will participate from over 500 districts in the programme.

About PM-SURAJ Portal

- The portal acts as a **one-stop shop for persons from disadvantaged backgrounds to apply for and track the status of all loan and credit schemes** that are already available to them.
- Credit support will be provided **through banks, Non-Banking Financial Companies Finance Institutions (NBFC-MFIs)**, and other organisations to provide nationwide accessibility.
- An NBFC MFI is a **non-deposit-taking NBFC with a minimum Net Owned Funds (NOF) of Rs. 5 crore** (Rs. 2 crore for those registered in India's North Eastern Region) and at least 85% of its net assets as "qualifying assets (intended use or sale)".
- The program will also see the **Prime Minister distribute Ayushman Health Cards and PPE kits to Safai Mitras** (sanitation workers) under **NAMASTE** (National Action for Mechanised Sanitation Ecosystem).
- This initiative highlights the government's focus on ensuring the health and safety of sanitation workers engaged in essential but challenging work.

NAMASTE Scheme (National Action for Mechanised Sanitation Ecosystem)

Goal: To create a safe and dignified work environment with sustainable livelihood opportunities for sanitation workers in urban India.

Collaboration: A joint initiative between the Ministry of Social Justice & Empowerment (MoSJE) and the Ministry of Housing and Urban Affairs (MoHUA).

Implementation: National Safai Karamchari Financial Development Corporation (NSKFDC)

Coverage: Initial phase targets 500 cities (converging with AMRUT cities) during 2022-2026.

Objectives

- Eliminate sanitation-related deaths.
- Ensure all sanitation work is performed by trained professionals.
- Prevent direct contact with human waste.
- Empower sanitation workers through self-help groups (SHGs) and sanitation enterprises.
- Provide access to alternative livelihoods for all sewer and septic tank sanitation workers (SSWs).

Key Interventions

- **Health Insurance:** Coverage under Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (**AB-PMJAY**) for identified SSWs and their families, with premium support for those previously uninsured.
- **Empowers sanitation workers:** The scheme offers comprehensive **livelihood assistance**, including promoting mechanization and skill development for those who wish to remain in sanitation, while also

providing counselling and support for those seeking alternative careers or entrepreneurship. Additionally, all sanitation workers and their families gain access to social security schemes.

• Reduces financial burdens:

- Capital subsidies (up to ₹5 lakh) for sanitation machinery (up to ₹15 lakh).
- Interest subsidies on loans with capped rates (4-6%).
- Training stipends (up to ₹3,000 per month) during equipment familiarization.

Conclusion

The Prime Minister launched the PM-SURAJ portal to provide financial inclusion for underprivileged entrepreneurs and sanitation workers, promoting economic empowerment and well-being.

Expected Questions for UPSC CSE

Prelims MCQ

Q. What is the primary objective of the PM-SURAJ scheme launched by the Government of India?

- (a) To promote solar energy adoption in rural areas.
- (b) To enhance rural electrification and ensure 24x7 power supply to all the villages.
- (c) To uplift the most marginalised segments of society through credit support to entrepreneurs in marginalised communities.
- (d) To improve healthcare facilities and services in rural regions.

Answer: (c)

MISCELLANEOUS

INDIA RECEIVES MEASLES AND RUBELLA CHAMPION AWARD

Why in News: Recently, in recognition of country's tireless efforts to combat Measles and Rubella, India has been bestowed with the prestigious Measles and Rubella Champion Award by The Measles and Rubella Partnership at the American Red Cross Headquarters in Washington D.C., USA.

Key details

- The award has been presented for India's exemplary efforts in measles and rubella disease prevention resulting in 50 districts consistently not witnessing any measles case while 226 districts not reporting rubella cases over the past 12 months.
- The Award represents India's unwavering dedication to public health and its efforts to combat measles and rubella via the implementation of successful solutions.
- It acknowledges India as a regional pioneer in the fight against measles and rubella, having strengthened routine immunization under the country's Universal Immunization Programme (UIP) by employing "measles as a tracer."

About the Rubella and Measles Partnership

- A global movement known as the Measles & Rubella Partnership aims to direct and coordinate efforts towards eradicating the measles and rubella virus.
- The Measles & Rubella Partnership (M&RP) is led by the American Red Cross, the Bill & Melinda Gates Foundation, Gavi the Vaccine Alliance, the United Nations Foundation, the U.S. Centers for Disease Control and Prevention, UNICEF, and the World Health Organization.
- The M&RP works to eliminate measles and rubella worldwide by
 - Funding, organizing, carrying out, and overseeing high-quality supplemental programs;
 - Assisting nations in increasing vaccination rates;
 - Investigate into epidemics and offer financial and technical assistance to improve vaccine delivery;
 - Support of an international measles and rubella laboratory network.
- The MSRF 2021–2030 aims to create "A world free from rubella and measles."

About Measles and Rubella**Measles**

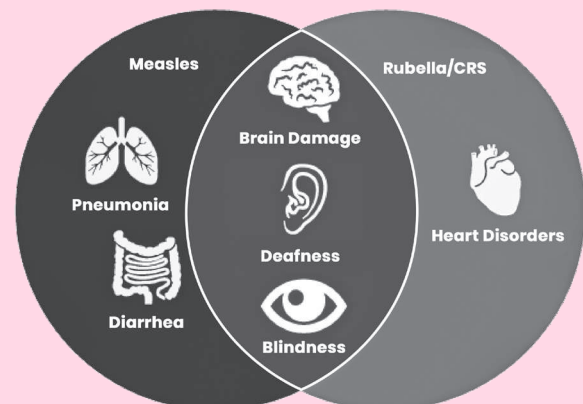
- The highly contagious viral disease, measles is brought on by the Paramyxoviridae family's Morbillivirus.
- **Transmission:** An infected person's breath, cough, or sneezes can transmit it.
- **Children are the most vulnerable to the illness**, and infections initially affect their respiratory systems.
- A high temperature, cough, runny nose, and a generalized rash are among the symptoms.
- **Mortality:** Despite the availability of a secure and affordable vaccination, a projected 128,000 persons died from measles in 2021, the majority of them were children under the age of five.

Rubella

- This infectious virus is most recognized for causing a characteristic red rash. Other names for it include three-day measles and German measles.
- The rubella virus can be extremely dangerous for unborn children whose mothers contract it while they are pregnant.
- Pregnant women who contract rubella may die or have birth abnormalities known as Congenital Rubella Syndrome (CRS).
- **Therapy:** Rubella is preventable with the measles, mumps, and rubella (MMR) vaccine, which is both safe and very effective. Rubella immunity is lifelong thanks to the vaccination.

Health issues due to Measles and Rubella

- Rubella and the measles are illnesses that can cause fatalities or major health problems. These illnesses can lead to overlapping health issues.



Way Forward

- To **eradicate measles and rubella**, India should keep up its **proactive immunization campaigns, surveillance programmes, and public awareness campaigns**.
- It is imperative that the roadmap plan for MR Elimination be implemented, the MR Laboratory network be expanded, and regular immunization under **the Universal Immunization Programme (UIP)** be strengthened.
- To achieve the objective of a world free from measles and rubella, cooperation with **international partners and ongoing support for the Measles & Rubella Partnership will be essential**.

Expected Questions for UPSC CSE

Prelims MCQ

Q. With respect to the Rubella and the Measles consider the following statements,

1. It can cause blindness, deafness, and brain damage.
2. It is viral disease.
3. In Measles, children are the most vulnerable to the illness, and infections initially affect their respiratory systems.

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. Immunization Programme in India have the long history from the 1970s. In this regard comment on mission Indradhunush with special focus on steps to improve its implementation. [15 Marks] [250 Words].

REDEVELOPMENT OF SABARMATI ASHRAM

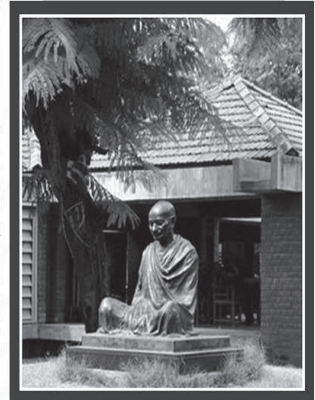
Why in News: Prime Minister recently, laid the foundation for the redevelopment of Mahatma Gandhi’s Sabarmati Ashram in Ahmedabad.

Key details

- On the occasion of Mahatma **Gandhi’s well-known Dandi Yatra**, or salt march, which began on **March 12, 1930**, Prime Minister recently inaugurated the renovation of Kochrab Ashram.

- The Prime Minister announced a big project to improve the Sabarmati Ashram, a place important to India’s history. The Ashram will grow from **5 acres to 55 acres**, and it will cost **1200 crore rupees**.
- He emphasized that the Sabarmati Ashram is a special place for both learning about **India’s fight for freedom and its future as a developed nation**.
- The famous Sabarmati Ashram will be improved to show the story of India’s freedom fight in new and exciting ways like **‘Viksit Bharat’**, while **still keeping its original feel**. There will be special displays and talks about Gandhi’s journeys and protests.

ABOUT SABARMATI ASHRAM



- Mohandas Gandhi started his first Indian Ashram at **Kochrab area in Ahmedabad in 1915**. In 1917, he moved it to **Sabarmati riverbank** for experiments in self-sufficient living and because of its historical and symbolic location. The Sabarmati Ashram became a center for India’s fight for freedom under Gandhi’s leadership.
- Gandhi’s Sabarmati Ashram was a place to **teach new ideas about truth and non-violence**. It included a school and was the starting point for a famous **protest march against British salt taxes**. Over time, the Ashram became a **symbol of India’s fight for freedom** and continues to inspire others today.
- The Sabarmati Ashram preserves historical artefacts, hold exhibition, and publishes writings about Gandhi. They also offer educational programs and maintain the Ashram grounds for visitors.
- The Ashram associates many institutions with it for the welfare of society at collective level as mentioned; **Harijan Ashram Trust, Gujarat Khadi Gramodyog Mandal, Khadi Gramodyog Prayog Samiti, Gujarat Harijan Sevak Sangh, Ashram Guest House**.
- The **objective of this Ashram** is that its members should qualify themselves for, and make a constant **endeavour towards**, the service of the country, **not inconsistent with universal good**.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Sabarmati River:

1. It originates from Aravalli Hills, Rajasthan and meets in Gulf of Khambat in the Arabian Sea.
2. Siri is its right bank tributary and Khari is its left bank tributary.

Which of the above statement(s) is/ are correct?

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

(c) :.ɹɐʍsɹɹ

Descriptive Question

Q. Discuss in detail about the historical significance of the Sabarmati Ashram. [10 Marks] [150 words]

NATIONAL YOUTH PARLIAMENTARY FESTIVAL

Why in News: Recently, the Ministry of Youth Affairs and Sports organized the finals of the National Youth Parliament Festival, 2024.

Key details

- The concept for NYPF originated with the Prime Minister at his Mann Ki Baat Address in 2017.
- It comprises of the Youth Parliament for the District, the State, and the Nation.
- **Aim:** To hear the opinions of young people in the 18–25 age range who are able to vote but are not permitted to run for office.
 - To inspire young people to become involved in public affairs, comprehend the viewpoint of the average person, develop an opinion, and articulately express it.
- Increases knowledge of citizenship, fosters youth involvement, and fosters the development of leadership skills.
- **Theme :** “Young Voices: Engage and Empower for Nation’s Transformation”
- **Languages**
 - Youth Parliaments in the District and State: Hindi, English, or the State’s official language.
 - Participants in the National Youth Parliament may speak in Hindi or English.

Requirements for Participation

- As of February 1, 2024, participants must be between the ages of 18 and 25.
- Promotion of female and underrepresented group representation.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Parliament:

1. Speaker nominates Anglo Indians to Lok Sabha.

2. A nominated member cannot join a political party.

Which of the above statement(s) is/ are correct?

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

(d) :.ɹɐʍsɹɹ

Descriptive Question

Q. Write in brief about the measures taken to improve political education in India. [10 Marks] [150 Words].

SELA TUNNEL PROJECT

Why in News: PM inaugurated the 13,700-foot-tall Sela Tunnel in Arunachal Pradesh, constructed by the Border Roads Organisation.

Key details

- The Prime Minister officially started the tunnel project in February 2019, and construction began two months later in April 2019.
- They finished building the tunnel in just five years, even though the landscape was tough and the weather conditions was bad.
- This project will facilitate **connectivity** between **Tezpur, Assam to Tawang in Arunachal Pradesh** built with the cost of Rs 825 crore.
- The Sela Tunnel has the highest criteria for safety measures and was built using the **New Austrian Tunnelling Method (NATM)** that will improve the preparedness of the Armed personnels for any disturbed situations.

About Se la Pass

- **Beautiful and Snowy View:** Se la Pass covered in snow and frozen lake for most of the year, making it the first scenic spot on the way to Tawang. Travelers stop here to enjoy the view and it can be one of the emerging tourist places of India.
- **Border Pass:** Located on the Sela Mountain, it separates the Tawang and West Kameng districts.
- **Birding Paradise:** Despite the cold, rare birds’ nest in the rocky areas around the pass. Birdwatchers even come from the Eagle nest Wildlife Sanctuary to see these special birds.

New Austrian Tunneling Method (NATM)

- NATM is a method to stabilize the tunnel perimeter with the help of sprayed concrete, anchors and other support and uses regular monitoring to control stability of the tunnel.

- The Sequential Excavation Method (SEM) or Sprayed Concrete Lining (SCL) Method.
- It uses advanced monitoring to modify different wall strengthening methods according to the variety of rock that is found during tunnelling which makes project cost effective.

Border Roads Organisation (BRO)

- The BRO was started by Prime Minister Jawaharlal Nehru in 1960 to make India’s borders stronger and improve roads in the north and northeast
- It’s now part of the Ministry of Defence and helps build roads and infrastructure in those areas.
- Their motto is “Shramena Sarvam Sadhyam” which means “everything is achievable through hard work”.
- The **Border Roads Organisation (BRO)** built a record number of roads and bridges (330 of them) in the past three years. It cost them 8,737 crore rupees to do all this.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following pairs regarding passes and their location:

Passes	Location
Rohtang La	Himachal Pradesh
Se La	Assam
Pensi La	Kashmir

How many of the above pair(s) is/are correctly matched?

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

Answer: (a) [Only]

Descriptive Question

Q. Discuss the various types of tunnelling methods in India. Substantiate with examples. [10 Marks] [150 Words].

GLOBAL E-WASTE MONITOR 2024

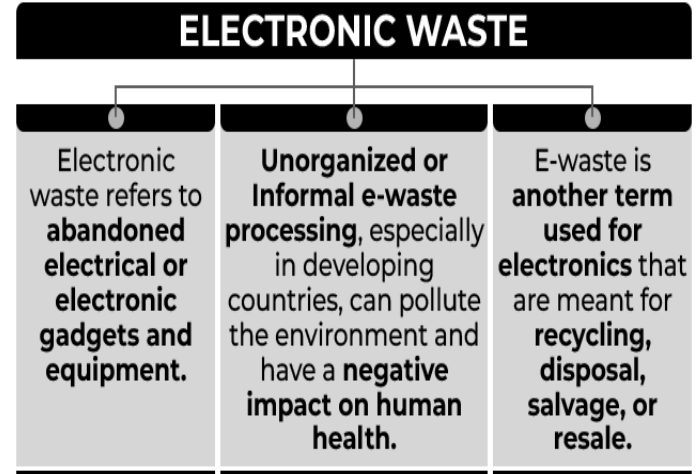
Why in News: The UN Agencies gave warning regarding the piling up of electronic waste across the globe.

Key details

- UN agencies have **issued warnings that electronic waste is stacking up globally** and that recycling rates are likely to continue to decline.
- In a report released yesterday, the **UN’s International Telecommunications Union** and research arm **UNITAR** claimed that **over 62 million tons of “e-waste” were produced in 2022**—enough to fill a global bumper-to-bumper line of tractor-trailers.
- By 2030, it is **expected to reach 82 million tons**.

Key Findings from the Report

- The United Nations has released its **fourth Global E-waste Monitor (GEM)**, which shows that the global creation of electronic waste is growing five times faster than reported e-waste recycling.
- According to an **ITU and UNITAR assessment**, the 62 million tonnes of e-waste produced in 2022 would fill 1.55 million 40-ton trucks, or about enough trucks to create a **bumper-to-bumper line encircling the equator**.
- The reported collection and recycling rate is predicted by the report to **decline from 22.3% in 2022 to 20% by 2030 as a result of the growing disparity between recycling efforts** and the startling global increase in e-waste output.



Expected Questions for UPSC CSE

Prelims MCQ

Q. Which international organization publishes the Global E-waste Monitor report annually?

- (a) United Nations Environment Programme (UNEP)
- (b) World Health Organization (WHO)
- (c) International Telecommunication Union (ITU)
- (d) World Economic Forum (WEF)

Answer: (c)

Descriptive Question

Q. Discuss the key highlights of Global E-Waste Monitor 2024. How is E-waste regulated in India? [10 Marks] [150 Words]

GLOBAL METHANE TRACKER 2024 REPORT

Why in News: The International Energy Agency’s (IEA) recently released Global Methane Tracker 2024 report paints a concerning picture regarding Methane emission.

Methane

- Methane (CH₄), though **colorless and odorless**, is a potent greenhouse gas with over **80 times the warming potential of carbon dioxide** over a 20-year period.
- Rapid and sustained reductions in methane emissions are critical for mitigating near-term global warming and improving air quality.

Key Findings in Report

- **Persistent Problem:** The report reveals that methane emissions from the energy sector, **primarily from fossil fuel production and use** (oil, natural gas, and coal), reached nearly 120 million tonnes (Mt) in 2023.
 - **Bioenergy** contributed an additional 10 Mt.
- **Top Emitters:** A concerning trend is the concentration of emissions. Around 70% (80 Mt) of methane emissions from fossil fuels originate from just 10 countries, with the **United States leading in oil and gas operations, followed by Russia.**
 - **China** tops the list for emissions from the **coal sector.**
- **The Cost of Action:** Achieving a substantial 75% reduction in methane emissions by 2030 is crucial to meet global climate goals. However, this target comes at an estimated cost of US\$170 billion by 2030.

- India, with the world’s largest cattle population and the second-largest rice producer, faces a unique challenge.
- **Agriculture**, particularly livestock rearing and paddy rice cultivation, accounts for a staggering **61% of India’s total methane emissions.**
- This surpasses emissions from the **energy sector (16.4%) and waste (19.8%).**

Conclusion

Unlike CO₂, methane breaks down within a decade. This means rapid reductions in methane emissions can significantly slow down near-term global warming. Experts estimate a 45% cut in human-caused methane emissions by 2030 is achievable, preventing nearly 0.3°C of warming by 2045 and aiding in achieving the Paris Agreement targets. Thus, by adopting a multi-pronged approach, we can significantly reduce their environmental footprint.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Which of the following is a significant source of methane emissions contributing to climate change?
1. Oceanic releases from deep-sea vents
 2. Agricultural activities such as rice cultivation
 3. Volcanic eruptions
 4. Forest fires in tropical regions

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

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All of the above

Answer: (b) (2 and 4 only)

Descriptive Question

Q. Discuss the sources, impacts, and mitigation strategies associated with methane emissions, emphasizing their significance in the context of global climate change. [15 Marks] [250 Words]

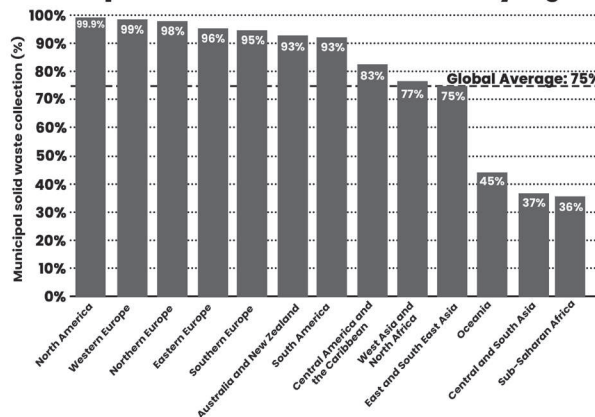
GLOBAL WASTE MANAGEMENT OUTLOOK 2024

Why in News: The United Nations Environment Programme (UNEP) and International Solid Waste Association (ISWA) jointly released the concerning report titled “Beyond an Age of Waste: Global Waste Management Outlook 2024 (GWMO 2024)”.

Major Highlights

- **Global Scenario:** The report reveals a staggering statistic - over **2 billion tonnes** of municipal solid waste (MSW) are generated globally every year. This highlights the immense scale of the challenge.
- **Waste Collection Crisis:** A significant portion of the world’s population, **over 2.7 billion people**, primarily residing in developing regions, lack access to basic waste collection services. This translates to **540 million tonnes**, nearly **27% of global waste**, remaining uncollected, posing significant health and environmental risks.

Municipal solid waste collection rates by region



- **Future Projections:** The report paints a grim picture of the future, predicting a potential **increase in waste generation from 2.3 billion tonnes in 2023 to 3.8 billion tonnes by 2050.** This alarming growth necessitates immediate and effective interventions.
- **Health Impact:** The report warns of the detrimental **impact of MSW on climate, biodiversity, and human health**, with these negative effects potentially **doubling by 2050.** This emphasizes the urgency of addressing the issue to safeguard public health and the environment.

Conclusion

Addressing the global waste crisis requires a multi-pronged approach, encompassing collective action from governments, businesses, and individuals. By acknowledging the urgency of the issue, implementing robust waste management strategies, and adopting sustainable practices, we can move towards a cleaner and healthier future for all.

- (b) underinvestment in waste reduction and management
- (c) Segregated waste collection
- (d) Rapid Urbanization

Answer: (c)

Expected Questions for UPSC CSE

Prelims MCQ

- Q. What is NOT the Barrier commonly associated with the Waste Management?
- (a) limited capacity and improper management of landfills

Descriptive Question

- Q. Waste Management is very important for sustainable cities as per SDG goal-11. Suggest some steps for the effective Urban Waste Management. [15 Marks] [250 Words].

STATE ENERGY EFFICIENCY INDEX 2023

State Energy Efficiency Index 2023

Why in News?
The Bureau of Energy Efficiency (BEE) released the State Energy Efficiency Index (SEEI) 2023 on its 22nd foundation day.

About SEEI

- **Developed by**
The Bureau of Energy Efficiency (BEE) in collaboration with the Alliance for an Energy Efficient Economy (AEEE).
- **Objective**
To track and assess Energy Efficiency initiatives undertaken by states and UTs.

Assessment Framework

- Evaluates 36 states and UTs based on 65 indicators.
- Covers Seven Key Demand Sectors: Buildings, Industry, Municipal Services, Transport, Agriculture, Distribution Companies (DISCOMs), and Cross-Sector initiatives.
- States/UTs categorized as:

Front Runner ≥ 60 points	Achiever 50-59.75 points	Contender 30-49.75 points	Aspirant < 30 points
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		Sectors							
Categories		☆	🏠	🏭	🚗	🏘️	🌾	⚡	☺️
Policy									
Finance									
Institutional Capacity									
Adoption of EE Measures									
Energy Savings									
		Programme-specific Indicators							
		Common Indicators							
Sector weights		15	22	17	11	16	8	11	100
Indicator Weights	Common	15	9	6	2	7	3	6	48
	Programme		13	11	9	9	5	5	52

Key Findings of SEEI 2023

- **Top Performers**
 - ▶ Karnataka secured the top position, being the only state with an active "Energy Conservation and Energy Efficiency Policy."
 - ▶ Andhra Pradesh followed closely.
- **Improved Performance**
 - ▶ 15 states showed improvement compared to 2021-22, with Maharashtra and Haryana exhibiting the most significant strides.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding State Energy Efficiency Index (SEEI):
1. The index is developed by a statutory body, Bureau of Energy Efficiency (BEE).
 2. It assesses the quarterly progress of states and UTs in energy efficiency.
 3. According to 2023 data, 18 states improved their scores compared to previous 2021-22 data.

How many of the above statements is/are correct?

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

Answer: (a) [1 only]

Descriptive Question

- Q. "SEEI serves as a valuable tool for evaluating and promoting energy efficiency initiatives across Indian states and UTs." Discuss. [10 Marks] [150 Words]

GEOGRAPHICAL INDICATION (GI) TAG

Geographical Indication (GI) Tag

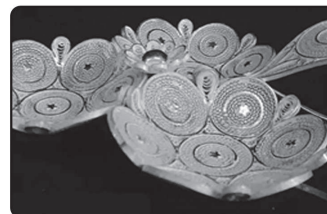
Why in News: A number of products from different parts of the country received GI tags.

GI Tags

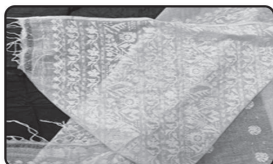
- A name or sign put on some products that represents a particular geographic region or origin is called a "GI tag."
- The GI tag makes sure that the popular product name may only be used by authorized users or those who live in the designated geographic area.
- Additionally, it stops other people from duplicating or copying the product.
- The validity of a registered GI is ten years.

Rupa Tarakasi (Silver Filigree) of Cuttack, Odisha

- **Tarakasi:** Traditional metalwork technique for intricate jewelry and decor.
- **Material:** Primarily silver (at least 90% pure)
- **Origin:** Likely arrived in Cuttack (India) via sea trade 500 years ago, possibly influenced by Indonesian metalwork.
- **Process:** Skilled artisans transform silver into wires and sheets, then craft intricate designs.
- **Application:** Known for adorning jewelry in Odissi, a classical Indian dance.



Banglar Muslin, Bengal



- **Banglar muslin** is a prominent traditional handloom skill from Bengal.
- This finest type of muslin is made of **cotton**, which is spun into threads with better tensile strength than any other cotton product.
- Original muslin was made entirely from a cotton plant known as **Phuti Karpas**, which grew only along the banks of a specific section of the **Brahmaputra River**.

Narsapur Crochet Lace, Andhra Pradesh

- Narsapur, in the **West Godavari region**, is well-known for its crochet talents.
- Crochets are **skillfully** constructed **with cotton thread**, and it is thought that the women of this region's farming population **since** multicoloured lace around 150 years ago.



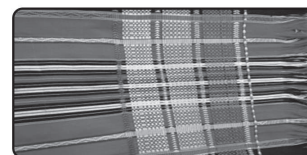
Kutch Rogan Craft & Ambaji White Marble Gujarat



- **Rogan art**, a historical textile art with Persian roots, arrived in Nirona Village, **Kutch Gujarat**, **approximately 400 years ago**.
- The creation of Rogan art involves boiling castor or linseed oil for two days, followed by the incorporation of mineral pigments (**vegetable dyes**) and a binding agent.
- The art form is renowned for its **"Tree of Life" motif**.
- The Rogan art tradition originated among the Muslim Khatri community of Gujarat.

Risa Textiles, Tripura

- It normally measures **five feet in length** and wraps around the upper body.
- Some of the designs are referred to as '**kosom pali**', '**khamjang**', etc.



Expected Questions for UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding Geographical Indications (GI) tags is/are correct?

1. GI tags are granted to agricultural, natural, or manufactured goods originating from a specific geographical region known for unique qualities or reputation.
2. The primary purpose of GI tags is to prevent unauthorized use of the product's name and protect consumers from imitation.
3. The authority responsible for granting GI tags in India is the Ministry of Commerce and Industry.

How many of the above statements are correct?

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

Answer: (c)

WORLD TUBERCULOSIS DAY

Why in News: A fashion designer from Mumbai remembers how the extended oral medication regimen was a game-changer in her battle with the illness.

Key details

- Raise awareness about tuberculosis (TB) and efforts to eradicate the disease. Celebrated annually on March 24th.

Significance

- **Commemorates Dr. Robert Koch's discovery of the TB bacteria** (March 24, 1882).
 - Promotes access to quality TB care for all.

- Unites governments, health organizations, and communities in the fight against TB.
- This year's observance reprises the 2023 **theme** of Yes! We Can End TB.

About Tuberculosis

- Caused by **Mycobacterium tuberculosis bacteria**.
- Spread through inhalation of infected droplets from **coughs or sneezes**.
- Primarily affects the lungs, but can spread to other parts of the body.
- **Treatable with antibiotics**.

Expected Questions for UPSC CSE

Prelims MCQ

Q. With respect to Tuberculosis, consider the following statements:

1. It is caused by fungus in damp atmosphere.
2. It can also affect skin along with lungs.
3. It is a notifiable disease in India from 2012.

How many of the above statement(s) is/are correct?

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

Answer: (b) (2) and 3 only

Descriptive Question

Q. What are notifiable diseases? What steps are being taken by the Government of India to tackle Tuberculosis in India? [10 Marks] [150 Words].

ARTICLE FROM YOJANA (MARCH 2024)

TRADITIONAL ART FORMS IN DIGITAL AGE

Introduction

Art in any form is a **manifestation of human brain's potential for creation**. The capacity may be latent, but it is there in every human being, concealed as vigour and vibrance of the verve of life. Artistic traditions have kept changing and will continue to do so since creativity is a phenomenon of incessant evolving. Digital enhancement technology has been instrumental keeping their journey synced with that of human race.

The Enduring Legacy of Artistic Traditions

- Artistic traditions form the cornerstone of a civilization's cultural identity. Their evolution has always been intertwined with the development of **various art forms, and this remains true even in our digitally connected world**.
- The complexities of the modern world demand a fusion of artistic traditions with technology to ensure their continued relevance. Our **cultural heritage, built upon millennia of artistic expression, is a testament to the enduring power of art**.
- Throughout history, we have held onto the essence of our artistic spirit, discarding the transient and embracing the timeless. Now, on the precipice of the digital age, a crucial question arises: **how can we preserve, expand, and enhance our artistic traditions?**

The Digital Canvas: A New Realm of Artistic Exploration

- The integration of digital tools into artistic practices is gaining momentum across various disciplines, with artists employing specialized tablets and software to produce novel creations.
- This digital shift empowers them with **significant creative freedom, fostering experimentation** and the merging of artistic styles.
- Digital art offers numerous advantages, including enhanced **design innovation, broader accessibility, increased convenience, and the potential** for instant global sharing and recognition.
- Interactive multimedia elements, installations, **2D/3D/4D projections**, and cutting-edge concepts like **virtual reality (VR)** and **augmented reality (AR)** offer an unimaginable scope for creating and popularizing artistic masterpieces with the help of technology.

Preserving the Soul of Tradition: A Delicate Balance

- Artistic traditions are inherently dynamic, constantly

evolving alongside human creativity. Stagnation can lead to their **decline, making digital enhancement crucial** for their continued relevance. While technology plays a vital role in keeping artistic traditions relevant to the modern world, there is a concern for the preservation of their soul.

- Traditional art forms embody centuries-old techniques and craftsmanship. **The dedication, skill, and individuality** poured into each creation, along with the inherent imperfections and subtleties arising from the human touch, evoke a sense of timelessness.
- The aesthetics of such works resonate with hearts across generations and transcend geographical and temporal boundaries. This essence of human creation breathes life into new generations, ensuring the continuity of artistic traditions.

The Human Touch: Irreplaceable in the Artistic Realm

- The adoption of machine-based tools for artistic creation isn't always embraced by traditionalists. Reasons for this resistance may vary, ranging from a reverence for **age-old practices and temperaments** to a lack of technical knowledge or limitations imposed by age or educational background.
- Regardless, these dedicated traditional artists, often residing in remote corners of the world, are invaluable custodians of our artistic heritage. They will undoubtedly continue to preserve these art forms, irrespective of technological advancements.

Technology: A Tool for Preservation and Promotion

- While acknowledging the irreplaceable aspects of live performance, the performing arts can utilize **digital technology to enhance artistic expression and audience engagement**.
- Live performance, with its tangible nature and connection between **artist and audience**, remains the core experience. Technology can serve a valuable ancillary role in promotion and outreach.
- **Digital tools** such as social media are crucial for expanding reach, fostering artistic communities, and ensuring the continued success of the performing arts.

Digital Advocacy: A Force for Artistic Revival

- The role of digital media in **promoting performing arts** has proven miraculous. Numerous art forms have witnessed a resurgence thanks to dedicated online campaigns. Lost artists have been rediscovered through

the tireless efforts of digital enthusiasts scouring social media networks.

- Dormant art techniques have been revived by passionate individuals determined to **prevent their disappearance**. The invaluable artistic heritage that could have been lost forever has been restored, primarily due to the empowering reach of digital media.

The Need for Discernment: Maintaining Artistic Integrity

- While the digital world offers magnificent opportunities for wider human connection, it also presents challenges. Technological advancements have allowed certain creators to exploit this medium for the **expression of controversial or inartistic ideas**.

- The absence of a filter necessitates a clear distinction between the supportive role of digital technology and its potential to become a generative force.
- A discerning approach is crucial. Human creativity must remain irreplaceable at the core, while **digital tools can be utilized to enhance and amplify**.

Conclusion

A discerning approach is paramount. The **core of artistic expression must remain firmly rooted in human creativity**, with digital technology acting as a powerful tool for enhancement. Technology should not be used to create, but rather to elevate. By embracing this harmonious blend, we can ensure the continued evolution and flourishing of artistic traditions in the digital age.

Blue Book Series

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