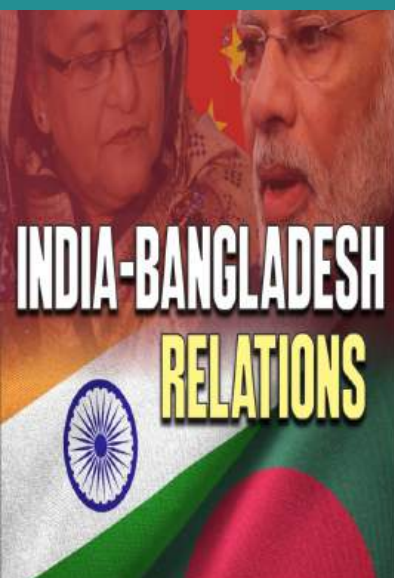


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SUB CLASSIFICATION OF SCHEDULED CASTES AND SCHEDULED TRIBES

Why in News: Recently, the Supreme Court of India has allowed states to sub-classify Scheduled Castes(SCs)/ Scheduled Tribes for quotas to provide substantive equality.

Key Details

- A seven-judge bench, in a 6:1 order, overruled a 2005 five-judge bench verdict in the E.V. Chinnaiah case that outlawed the Andhra Pradesh government's notification to sub-categorise SC/STs in the state.
 - The Supreme Court had in 2005 said it was contrary to Article 341 of the Constitution, which confers the right to prepare a list of SC/STs to the President.
- The Supreme Court through its recent judgement has introduced two concepts
 - First, the Scheduled Castes are not a homogenous group and can therefore be classified into groups for the purpose of reservations.
 - Second, that SCs and STs can be equated to 'other backward classes' by imposing the creamy layer principle based on economic criteria.

Why did state governments want to sub-classify SCs and STs?

- Article 341 of the Constitution allows the President, through a public notification, to list as SC "castes, races or tribes" that suffered from the historical injustice of untouchability.
 - SC groups are jointly accorded 15% reservation in education and public employment.
- Despite reservation, some castes are grossly underrepresented compared to other dominant SCs and STs.
- In 1975, the Punjab government issued a circular providing half of reservation exclusively to the Balmiki and Mazhabi Sikh communities within 25% SC reservation.
- Similarly in 2000, the Andhra Pradesh government passed the Andhra Pradesh Scheduled Castes (Rationalisation of Reservations) Act 2000, which granted legal status to sub-categorisation among SCs in Andhra Pradesh (undivided).
- **Note:** During pre-Independence era SCs were listed solely

on the basis of the practice of untouchability, and after the 1911 Census, they became a constitutional category in the Government of India Act, 1935. This continued in the Constitution of India and Presidential Orders on the basis of the 1931 Census listing.

Significance of Sub-classification of SCs and STs

- **Addressing Intra-Group Inequities:** Within the broad categories of SCs and STs, there are often significant disparities in socio-economic status. Subclassification allows for more equitable distribution of benefits by ensuring that the most disadvantaged sub-groups within these categories receive appropriate support.
- **Enhanced Representation:** Targeted reservation can improve representation of marginalized sub-groups within SCs and STs in education, employment, and political institutions. This helps ensure that all segments within these communities have a voice and access to opportunities.
- **Promoting Social Justice:** By focusing on the needs of the most underprivileged sub-groups, subclassification aligns with the principles of social justice, aiming to uplift those who are historically and systematically deprived of opportunities.
- **Tailored Policy Interventions:** Subclassification enables the design of more specific and effective policy interventions that can address the unique challenges faced by different sub-groups within SCs and STs, leading to better outcomes in terms of education, employment, and socio-economic development.
- **Reducing Internal Competition:** It can reduce competition within the broader SC and ST categories, where more advanced sub-groups might otherwise dominate the benefits of reservation, leaving the most marginalized without adequate access to resources.
- **Judicial and Constitutional Validation:** Ensuring that subclassification is based on quantifiable and demonstrable data of backwardness helps maintain the constitutionality of reservation policies and withstands judicial scrutiny, thereby safeguarding the legal validity of affirmative action measures.

Conclusion

The issue arises when the demands for 'expertise' and 'merit' are positioned against the principles of "social justice" and "equality." However, these concepts should not be viewed as conflicting; rather, they are aligned and mutually reinforcing. As the Supreme Court emphasized in its recent judgment on subquotas for SCs and STs, the false dichotomy between merit and reservation must be challenged in India marked by deep inequalities. Merit should be understood in the context

of promoting equality and inclusivity — the real conflict lies between the privileged and the underprivileged, not between merit and distributive justice.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements

1. Right to reservation is a fundamental right.
2. Reservation is justified on the basis the equality before law.

Which of the following statements 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 significance of the Supreme Court's recent ruling on the sub-classification of Scheduled Castes and Scheduled Tribes for reservation purposes. How does this ruling address the socio-economic disparities within these communities, and what are the potential challenges in implementing such sub-classification? [15 marks] [250 words]

THE STATE OF INFRASTRUCTURE IN DISTRICT COURTS

Why in News: Recently a report was published by the Ministry of Law and Justice on the state of infrastructure in district courts across India.

The study, conducted across 20 district courts from 10 States — covering two districts each from the North, South, West, Central, and East regions, including the northeastern zones of India

Key Findings of the Report

- **Overcrowding of the Courtrooms:** Courtrooms are heavily burdened with case files and archived documents, leading to a lack of space for people inside. As a result, advocates, litigators, and parties have to stand in the courtroom due to limited space inside.
- **Inadequate IT infrastructure:** Only 45% of judicial officers surveyed reported having electronic display facilities, while 20% indicated that installations are still in progress.
 - Around 32.7% of judicial officers reported that their district court complexes lack video conferencing facilities, indicating significant gaps in technological resources available for judicial proceedings.

- **Lack of fire safety :** Around 39% of judicial officers reported the absence of fire safety equipment within their courtroom premises.
- **Lack of other basic facilities**
 - 29.3% of judicial officers do not have an Ahlmad room, essential for court clerks, which affects the efficiency of proceedings.
 - 36.3% of judicial officers agreeing that their courtrooms lack adequate seating and essential furnishings.
 - Only 14.6% of male support staff and 10.7% of female support staff have common rooms, while 73.7% of all support staff do not have attached toilets.
 - 41% of support staff reported the absence of computer units with multifunctional printers.
 - About 44.5% of judicial officers use their personal vehicles for official duties due to the lack of government-provided vehicles.
 - Approximately 50.4% of judicial officers responded that they reside in government-provided accommodations.

Central Scheme for Judicial Infrastructure

- The **Centrally Sponsored Scheme (CSS)** for Development of Infrastructure Facilities for Districts and Subordinate Judiciary was set up in 1993-94.
 - Planned and operated by the Department of Justice under the Union Ministry of Law and Justice, the scheme mandated the provision of financial assistance by the Centre to the States and Union Territories (UTs) for the construction of court halls and residential units for judicial officers and judges of the district and subordinate courts.
 - From its inception in 1993, up to 2020, the Centre allotted INR 7,460 crores to the States and UTs. The Government of India has already extended the scheme for five more years (2021-26) with a financial commitment of INR 5,357 crores.

Reasons for Poor Judicial Infrastructure

- Despite the quantum of central funds being made available in recent years, the infrastructure gaps at the district and lower levels of the judiciary remain a matter of grave concern due to following reasons:
 - **Erratic Financing:** The yearly funding averaged INR 69.18 crores per year for all states and UTs.
 - **The non-utilisation of funds by the states:** In 2019-20, for example, as much as 91 percent of CSS funds were unused. The CSS requires states to match 40 percent of the grant from the central government, however most states have routinely failed to fulfil this commitment. As a result, the allocated funds either go unspent or they lapse.
 - **Diversion of funds:** Many studies have also found that certain states have diverted funds meant for judicial infrastructure to other projects.
 - **Poor coordination among multiple authorities:** A 2019 it was noted that poor coordination among the key state departments—in particular, the Finance, Law, Home, District Collector, Public Works—was the reason why the

allocated money for the District Courts were ending up unspent.

- **Communication gaps between the Centre and states:** The Vidhi report highlights this, leading to inefficiencies.

Way Forward

- **National Judicial Infrastructure Corporation (NJIC):** Proposed by CJI in 2021 to address court infrastructure issues, monitor land allotment delays, and fund management, but faces concerns over federalism and centralization.
- **Decentralisation of Funds:** Issues in coordination, rigid guidelines, and unspent funds highlight the need for flexibility and decentralization.
- **Standard Protocols and Rules by National Courts Management Systems Committee:** It includes features like accessible navigation, ease of reaching the court, waiting areas, barrier-free access, case displays, security, amenities, and toilets. Additionally, there should be efforts to modernize existing courtrooms by equipping them with better technology to improve overall efficiency and accessibility.
- **Constitutional Mandate:** Article 38(1) of the Constitution requires that the state should strive to secure and protect "a social order in which justice, social, economic and political, shall inform all the institutions of the national life. The Supreme Court, in numerous judgments, has highlighted these constitutional goals of justice: fair, affordable, and quick. Thus as a part of non-negotiable sovereign function, both centre and states have to address the fundamental aspects of judicial efficiency.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. The state of judicial infrastructure in India, particularly at the district and lower court levels, has been a persistent concern despite the allocation of central funds. Critically analyze the reasons for these infrastructural gaps and suggest ways to address them, considering both the financial and administrative challenges. [15 marks] [250 words]

ARTICLE 311 OF THE INDIAN CONSTITUTION

Why in News: The Jammu and Kashmir Lieutenant-Governor recently invoked Article 311 of the Constitution and terminated the services of six government employees.

Key Details

- Article 311 of the Constitution deals with 'dismissal, removal or reduction in rank of persons employed in civil capacities under the Union or a State'.
- Under Article 311(2), no civil servant can be "dismissed or removed or reduced in rank except after an inquiry in which he has been informed of the charges and given a reasonable opportunity of being heard in respect of those charges".

Exception to the above

- **Conviction on criminal Charges:** Article 311 (2) (a) - where a person is dismissed or removed or reduced in rank on the ground of conduct which has led to his conviction on a criminal charge.
- **Dismissal Without Inquiry Due to Impracticability:** Article 311 (2) (b) - where the authority empowered to dismiss or remove a person or to reduce him in rank is satisfied that for some reason, to be recorded by that authority in writing, it is not reasonably practicable to hold such inquiry.
- **Security Reasons:** Article 311 (2) (c) - where the President or the Governor, as the case may be, is satisfied that in the interest of the security of the State it is not expedient to hold such inquiry. The amended Article 311(2)(c) requires no departmental inquiry except for a police or an official report to terminate the services.

Special Task Force for Screening

- In 2021, to screen the cases of employees suspected of involvement in activities requiring action under the provision of the Constitution, the Jammu and Kashmir government had constituted a Special Task Force.
- This Special Task Force is headed by the Additional Director General of Jammu and Kashmir Police as its chairman, and having members representing the Departments of Home, Law, Justice, and Parliamentary Affairs.
- The Special Task Force was tasked with compiling a record of such employees wherever necessary, and referring it to a committee constituted by the government.

Appeal against the Government Order

- The available remedy to terminated employees is to challenge the government's decision in the State Administrative Tribunal, Centre Administrative Tribunal, High Court and Supreme Court.

The Doctrine of Pleasure

The Doctrine of Pleasure, originally derived from British common law, allows the Crown and by extension in the Indian context, the President or the Governor, to terminate the services of a civil servant without prior notice. This doctrine is prominently featured in Articles 310 and 311 of the Indian Constitution, balancing the interests of the state with the rights of government employees. However, the application of this doctrine is not absolute.

Article 311 introduces critical safeguards that modify this doctrine by providing certain protections to civil servants. It specifies that no civil servant can be dismissed, removed or demoted without an inquiry wherein the accused has been informed of the charges against them and given a reasonable opportunity to defend themselves. This ensures that the

process remains fair and that the power is not used arbitrarily. This clause enforces the principles of natural justice in the administrative processes, ensuring fairness and transparency in disciplinary actions.

Case Study: Drug issue in J&K

- According to the Ministry of Social Justice and Empowerment, an estimated 10 lakh residents in a population of 1.25 crore (or 8%) were drug addicts in J&K in 2019-20.
- According to IMHANS-K, heroin was the most common opioid among 84.33% of the respondents surveyed in 2019-2020.
 - Heroin is a costly drug and poses a financial burden for addicts. The monthly average expense incurred by a heroin user is ₹88,183.58.
- According to an IMHANS study, 1.67% of drug abusers in Kashmir are women, with 16% married. Women, especially those working outside J&K or under peer pressure, are often hooked on opioids. Many female drug abusers also face personality disorders and abuse, including sexual exploitation and drug peddling.

Factors Responsible for Drug Menace in J&K

- **Poor Mental Health:** Substance use and poor mental health have a bidirectional impact hence poor mental health leads to substance use.
- **Virtual World:** Addiction to social media is acting as a force multiplier. Many teenagers and youngsters are getting influenced by social media start experimenting with drugs without knowing the consequences.
- **Push from Pakistan:** Pakistan is pushing drugs to generate funds for terrorism activities. The constant infiltration of drugs by Pakistan via the Valley's Kupwara and Baramulla districts, less-used other drugs such as brown sugar, cocaine, and marijuana are also readily available within the Valley and even in parts of Jammu.
- **Collapse of traditional culture:** Pakistan's nefarious attack on the Valley's cultural core has rendered this traditional mechanism of social control ineffective.

Fight Against Drug Menace

Creating Awareness Among People

- Religious centres and educational institutions are assuming a new role in Kashmir by doubling up as counselling and testing centres to curb the fast-spreading menace of drugs.
- Government of India has focused on prevention and organise people-centric initiatives. Government is putting thrust on engaging women to make de-addiction a community-centric initiative.
- Preventive screening of youth is proving to be the key in creating a deterrence.
 - The J&K Police Public School (JKPPS), Bemina, in Srinagar has become the first school in the Valley to implement a drug policy, to conduct random screening of students annually.
- In another community-centric initiative, youth clubs are being formulated in south Kashmir's Anantnag district to promote the culture of entertainment as well as conversation among youth after school and college hours.

- Parenting styles do impact the approach of children. Government also counsel the parents on parenting styles. There are higher chances of youth from broken families taking up drugs as a coping mechanism

Firm Action Against Drug Peddlers

- Police have identified 14 locations as drug hot spots in the city and carried out 85 raids at these places besides increasing the presence of manpower.
- If any police personnel is found involved in drug peddling, strict action will be taken against such persons as per the prevalent laws.
- The police are also keeping surveillance on former Over Ground Workers of terrorists to ensure that they are not recycled and get involved in narco-terrorism.
- Police are trying to bust the forward and backward linkages and attaching properties of notorious drug peddlers.

Rehabilitation

- Police has recently opened a state-of-the-art drug rehabilitation centre which is equipped with all facilities and a qualified staff.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which one of the following statements about dismissal or removal of persons employed in civil capacities under the Union or State (Article 311) is not correct?
- (a) Protection under Article 311 is not available to military personnel.
 - (b) The employees of statutory corporations such as the LIC, ONGC are not entitled to the protection of Article 311.
 - (c) The provisions of Article 311 are applicable to permanent civil servants only and not to temporary servants.
 - (d) Suspension of government servant from service is neither dismissal nor removal and is not within the scope of protection of Article 311.

Answer : C

THE WAQF (AMENDMENT) BILL, 2024

Why in News: The ruling Union Government has recently referred the Waqf (Amendment) Bill, 2024, to a Joint Committee of Parliament.

Key Details

- The Joint Parliamentary Committee on the Waqf (Amendment) Bill 2024 has 31-member headed by Member of Parliament Jagdambika Pal. Out of 31 total membership, 21 members of the committee are from the Lok Sabha and 10 members from the Rajya Sabha.
- The Waqf (Amendment) Bill, 2024, is intended to overcome

the shortcomings and enhance the efficiency of the administration and management of the waqf properties.

- The Bill has provisions for renaming the Waqf Act, 1995, as the Unified Waqf Management, Empowerment, Efficiency, and Development Act, 1995.

What are the Proposed Key Amendment?

- No person shall create a Waqf unless he is the lawful owner of the property and competent to transfer or dedicate such property.
 - This provision appears to address the assumption that land that does not belong to an individual is not given as Waqf.
- Government property identified or declared as Waqf property, before or after the commencement of this Act, shall not be deemed to be a Waqf property.
- It also empowers the government to decide if a property given as Waqf is government land. If any question arises as to whether any such property is a Government property, the same shall be referred to the Collector having jurisdiction who shall make such inquiry as he deems fit, and determine whether such property is a Government property or not and submit his report to the State Government.
 - This provision essentially means that the Collector — and not the Waqf Tribunal — will make this determination in case of a dispute.
- The proposed Bill would also give the central government the power to direct the audit of any Waqf at any time by an auditor appointed by the Comptroller and Auditor-General of India, or by any officer designated by the Central Government for that purpose.

About Waqf Properties

- A Waqf is personal property given by Muslims for a specific purpose — religious, charitable, or for private purposes.
- While the beneficiaries of the property can be different, the ownership of the property is implied to be with God.

How is a Waqf formed?

- A Waqf can be formed through a deed or instrument or orally, or a property can be deemed to be Waqf if it has been used for religious or charitable purposes for a long period of time.
- Once a property is declared as Waqf, its character changes forever, and cannot be reversed.

Governance of Waqfs in India

Before Independence: Since 1913, India has had a legal regime for the governance of Waqfs, when the Muslim Waqf Validating Act came into force. The Mussalman Wakf Act, 1923 followed by the Wakf Act, 1954, which improved upon the earlier legislation. The 1954 Act established a supervisory body and provided clearer guidelines.

Post-Independence:

- After Independence, the Central Waqf Act, 1954, was enacted, which was ultimately replaced by the Waqf Act, 1995.
- In 2013, the law was amended to prescribe imprisonment of up to two years for encroachment on Waqf property, and to explicitly prohibit the sale, gift, exchange, mortgage, or transfer of Waqf property.

- **Survey Commissioner:** The Waqf law provides for the appointment of a survey commissioner who maintains a list of all Waqf properties by making local investigations, summoning witnesses, and requisitioning public documents.
- **Management of a Waqf property:** It is managed by a mutawalli (caretaker), who acts as a supervisor. Waqf properties are managed in a way that is similar to how properties under Trusts are managed under the Indian Trusts Act, 1882.
- **Waqf Tribunal to resolve dispute:** Any dispute related to Waqf properties will be decided by a Waqf Tribunal. The Tribunal is constituted by the state government, and comprises three members — a chairperson who is a state judicial officer not below the rank of a District, Sessions or Civil Judge, Class I; an officer from the state civil services; and a person with knowledge of Muslim law and jurisprudence.
- The law also has provisions for the constitution and appointment of Waqf Boards, Waqf Councils, Chief Executive Officers for Waqf Boards in the states. The CEOs and parliamentarians who are part of the Waqf Boards must be from the Muslim community.

About Waqf Boards

- A Waqf Board is a body under the state government, which works as a custodian for Waqf properties across the state.
- A Waqf Board is headed by a chairperson, and has one or two nominees from the state government, Muslim legislators and parliamentarians, Muslim members of the state Bar Council, recognised scholars of Islamic theology, and mutawallis of Waqfs with an annual income of Rs 1 lakh and above.
- In most states, there are separate Waqf Boards for the Shia and Sunni communities.
- Almost all prominent mosques in the country are Waqf properties and are under the Waqf Board of the state.

Power of Waqf Boards

- It has power to administer the property and take measures for the recovery of lost properties of any Waqf.
- It has also power to sanction any transfer of immovable property of a Waqf by way of sale, gift, mortgage, exchange, or lease. However, the sanction shall not be given unless at least two thirds of the members of the Waqf Board vote in favour of such a transaction.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements correctly describes the concept of Waqf?
- A Waqf is personal property given by Muslims to a specific individual for their private use and enjoyment.
 - The ownership of a Waqf property is retained by the individual who has donated it, and it can be transferred or sold.
 - A Waqf is personal property given by Muslims for specific purposes such as religious, charitable, or private uses, with the ownership implied to be with God.
 - A Waqf property can only be used for commercial purposes and cannot be dedicated to religious or charitable activities.

Answer : c

Descriptive Question

- Q. Analyze the key provisions of the Waqf (Amendment) Bill, 2024, and their implications for the administration and management of Waqf properties in India. [10 marks] [150 words]

LATERAL ENTRY IN THE INDIAN CIVIL SERVICES

Why in News: The Union Public Service Commission (UPSC) has recently canceled the advertisement of lateral entry in the bureaucracy following the directions from the Department of Personnel and Training.

Key Details

- The Union Minister for the Department of Personnel and Training had noted that
 - The ruling government is of the firm belief that the process of lateral entry must be aligned with the principles of equity and social justice enshrined in the Constitution, particularly concerning the provisions of reservation.
 - Reservation in public employment is a cornerstone of the government's social justice framework, aimed at addressing historical injustices and promoting inclusivity.
 - It is important that the constitutional mandate towards social justice is upheld so that deserving candidates from marginalized communities get their rightful representation in government services.
 - Since lateral entry positions have been treated as specialized and designated as single-cadre posts, there has been no provision for reservation in these appointments, and this aspect needs to be reviewed and reformed after ensuring social justice.

About Lateral Entry

In a lateral entry to the civil services, persons are recruited from outside the usual bureaucratic setup for certain posts in government departments. In India, this may include mid or senior-level positions in services such as the Indian Administrative Service.

Lateral entry envisages the inclusion of domain experts or those with experience in policy-making and implementation from outside the civil services.

The 'lateral entry' route, however, is deemed a private contract between the individual and the government, and thus doesn't fall under the recruitment policy in government services.

Lateral Entry at senior and middle management levels in government has been repeatedly upheld and affirmed by the Second Administrative Reforms Commission in 2005, the Sixth Pay Commission in 2013, and the recommendations of the Niti Aayog in 2017.

As per the DoPT rules, government appointments could be exempt from the reservation policy only if they are temporary roles and for a period of less than 45 days.

History of Lateral Entry in India

- First time it was the government of Jawaharlal Nehru which made dozens of appointments from the "open market" based on candidates' competence and expertise in various fields.
- Post-Independence, the country needed officers to help frame policies and to implement them on the ground. Not many qualified officers were available, as the last batch of ICS was recruited in 1943, and the first batch of the IAS came only in 1948.
- The special recruitment was designed to select the best brains in India and from Indians living abroad to deploy in the service of the newly independent nation.
- To address the shortage of officers, especially those with specialised skills, special recruitment drives were undertaken in 1948-49 and again in 1956.
- Some reports suggest that the idea was mooted by the Second Administrative Reforms Commission in 2005.
- The NITI Aayog had in 2017 recommended the induction of officials at middle and senior management levels in the central government as 'lateral entrants'.
- The 'lateral entry' into certain posts in the Union government came into being in 2018.
- In the first round in 2018, as many as 6,077 applications for joint secretary-level posts were advertised. After a selection process by the UPSC, nine individuals were recommended for appointment to nine different ministries/ departments in 2019.
- The next round was advertised in 2021 followed by two more rounds in May 2023.
- Presently, 57 officers recruited as lateral entrants are posted in positions in central government ministries and departments.

Advantage of Lateral Entry

- Innovation:** Private sector known for innovation and government comes across various issues to solve the citizens problem. Lateral entry can infuse fresh ideas and innovative thinking into the government, which might otherwise be bound by traditional bureaucratic approaches.
 - Nilekani is credited with building Aadhaar, India's mammoth identity card scheme, while chairman of the Unique Identification Authority of India.
- Bring Specialization:** They can help fill the gaps of expertise and specialisation for specific durations, for well-defined objectives. There are many area which require specialisation for example cyber security, finance, science and technology etc.
 - Rajesh Kotecha who was former Vice-Chancellor of Gujarat Ayurved University, an expert in Ayurveda, appointed as the Secretary of the Ministry of AYUSH, brought specialized knowledge and expertise that helped in promoting traditional Indian medicine systems on a global platform.
- Improve Efficiency of the Administration:** It can bring in much-needed fresh ideas and energy. Professionals from the private sector are often accustomed to working in results-oriented environments with strict deadlines. Their entry into the civil service can help streamline processes, reduce red tape, and improve the overall efficiency of the administration.

- The appointment of Amitabh Kant as the CEO of NITI Aayog, with his background in tourism and experience in steering large-scale projects like the 'Incredible India' campaign.
- **Availability of Diverse pool of talent:** Lateral entry allows the government to tap into a broader and more diverse pool of talent that might not be available through the traditional UPSC route. This diversity includes individuals with specialized skills, global exposure, and experience in various fields.
- **Encouraging Healthy Competition:** Lateral entry can encourage healthy competition among traditional civil servants, pushing them to upskill and adapt to new challenges.
- **Flexible Hiring:** It allows the government to bring in talent on a need basis, especially for time-bound projects or to address immediate challenges.

Disadvantages of Lateral Entry

- **Complex and Complicated Governance:** The Joint Secretary acts as the central hub in the Hub & Spoke Model, connecting and coordinating various parts of the government like she has to work with state governments to ensure policies are implemented uniformly; parliamentary committees & parliament; role of other government agencies and Institutions; ground reality of the field etc. For an outsider, it is an uphill task to understand all such things simultaneously.
- **Violation of Social Justice Principle:** Lateral entry into the civil service does not include reservations or quotas for marginalized groups. This can be seen as a violation of the social justice principle, as it bypasses the established affirmative action policies designed to ensure equal opportunities for underrepresented communities.
- **Conflict of Interest:** Professionals entering the civil service from the private sector or other fields might have prior affiliations or financial interests that could influence their decision-making in government roles.
- **Unwelcoming Attitude from Traditional Bureaucracy:** Lateral entry may face an unwelcoming attitude from traditional bureaucrats, who might perceive it as a threat to their positions, authority, and expertise. This unease can arise from concerns about job security, disruptions to established hierarchies, and challenges to the conventional processes within the civil service.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the concept of lateral entry into the bureaucracy in India. Critically analyze the advantages and disadvantages of this approach. [15 marks] [250 words]

GUIDELINES TO ENHANCE SAFETY & EQUITY IN NEWSROOMS

Why in News: Recently Women journalists' group NWMI (The Network of Women in Media, India) released guidelines to enhance safety and equity in newsrooms.

Key Details

- The guidelines was released on Independence Day, cover a wide range of issues including work hours, salaries, leave policies, harassment, and discrimination.
- It aims to address critical issues such as poor working conditions and unfair newsroom practices.
- To ensure enhanced safety and equity for journalists, reinforcing the importance of protecting their rights as both individuals and professionals.

Issues faced by Women at Media Organisations

	Abusive Behaviour Abusive and unacceptable behaviour is passed down from media owners and editors to seniors to juniors to interns and freelancers. This kind of public abuse is often accompanied by harassment in the form of text messages and emails on official messaging groups such as WhatsApp.
	Disparaging Comments Comments based on personal attributes such as caste, gender, and sexuality are also common, with women and LGBTQIA+ individuals facing the brunt of these attacks.
	Long Working Hours Under the guise of journalism being 'a greater calling', 'an important job', 'not a 9-to-5 role', and other high-sounding claims of exceptionalism women has to work for longer hours.
	Wage Inequality Most of women face job insecurity because journalists were employed like daily wage labour; contract system of employment; neglect of maternity and child-care provisions and sexual harassment. Other issues are: ➤ More women are employed in the media now since they are available at lower salaries on the contract system. In such circumstances gender fair reporting and practices are more difficult to promote.
	Personal Life Women's most productive years are also their reproductive years. Another dilemma is childcare vs. profession. Effect of work on marital relations differ between male journalists and women journalists.
	Gaslighting 'Gaslighting' in the newsroom is also a pervasive problem, with editors and team leaders refusing to communicate properly with certain team members, particularly women. Such practices often lead to the women journalists concerned questioning their own professional skills and understanding of subjects.
	Sexism Several women feel they are judged on the basis of their personal relationships and marital status unlike their male colleagues. ➤ Some women reporters being denied jobs because they are mothers; others say job interviews include questions about pregnancy and plans for motherhood.
Other forms of harassment have been less discussed and resisted	
yelling, throwing insults around, aggressive and passive aggressive behaviour	unhealthy levels of competition.
	non-existent or dysfunctional grievance redressal mechanisms

Highlights of the Guidelines

- **Adherence to legally sanctioned work hours:** According to the Occupational Safety, Health and Working Conditions Code, 2020, journalists should work no more than 144 hours over four consecutive weeks, with at least one day off each week. Any work beyond this limit should be recognised as overtime, the document suggests.
- **Fair and regular salaries:** Media organisations are expected to provide compensation that reflects the professional nature of journalism, considering the education, skills, and experience required for the role.
 - Salaries should be benchmarked against comparable industries and adjusted for cost of living and inflation.

Transparency in job postings regarding financial compensation is also mandated.

- **Paid Leave:** Employees should receive a minimum of 30 days of paid leave annually, encompassing various types such as earned, casual, sick, and festival leave. The guidelines also cover health-related leave, including mental health and menstrual leave, and ensure compliance with legal provisions for maternity, paternity, and childcare leave.
- **Performance appraisals:** It should follow clear and transparent processes, with proper documentation and defined criteria to prevent arbitrary decisions regarding appraisals, promotions, and salary increases. Employees should have access to reports on average salary hikes to promote transparency.
- **Grievance Redressal Mechanisms:** It must address complaints of toxic behaviour within newsrooms, ensuring confidentiality and involving neutral fact-finding processes. Management should enforce a zero-tolerance policy for such behaviour and take disciplinary action against violators, regardless of their position or popularity.
- **Committees to address sexual harassment:** Setting up of legally mandated Internal Committees with representation from across departments as well as an impartial external member without personal or professional connections to the organisation or its management.
- **Addressing Staffing Shortages:** Acknowledgement of the fact that inadequate staffing is an institutional problem and that vacancies must be filled as quickly as possible so that the burden of extra work is not shifted onto other employees for long periods.
- **Comprehensive Healthcare for Journalists:** Ensure paid healthcare coverage for journalists, including freelancers, injured on assignment. This should cover mental health issues arising from trauma experienced during events like conflicts or disasters, as well as psychological distress from workplace toxicity, including harassment or bullying.

Conclusion

Despite constitutional mandates promoting equality, women continue to face significant challenges. Addressing these issues is crucial not only for achieving true equality but also for harnessing the full potential of women in the workforce. By creating an inclusive environment, empowering women to contribute equally, and removing systemic barriers, we can drive economic growth and foster a more just and prosperous society for all.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the challenges faced by women professionals in media organisations. How does the new guidelines will help in overcoming such challenges? [15 marks] [250 words]

THE BHARATIYA VAYUYAN VIDHEYAK BILL 2024

Why in News: Recently Lok Sabha has passed the Bharatiya Vayuyan Vidheyak Bill to replace the 90-year-old Aircraft Act 1934.

Reasons to Bring the New Bill

- It seeks to remove redundancies and improve the ease of doing business **and manufacturing** in the aviation space.
- The earlier amendments had created a lot of ambiguity and contradictions in terms of the functioning of internal organisations like the Directorate General of Civil Aviation (DGCA) and Bureau of Civil Aviation Security (BCAS).
- The bill includes provisions to regulate the design and manufacturing of aircraft to support the Aatmanirbhar Bharat initiative for self-reliance.
 - As according to ICRA Indian air passenger traffic will grow at the rate of 8 to 13% for the fiscal year 2024, reaching between 150 to 155 million.
 - The Bill's role in fostering growth in the helicopter industry, noting that India currently operates around 250 helicopters.
- The bill is also expected to strike a balanced approach where there is a level playing field for the airlines and the people are not exploited with higher airfares.

Though the Bill seeks to replace the Aircraft Act, 1934 but retains the regulatory structure and most of the provisions under the 1934 Act in addition to new provisions:

Important Features of the Bharatiya Vayuyan Vidheyak Bill 2024

- The bill has an updated definition of aircraft that covers comprehensive coverage of all flying machines. The new definition is: 'Any machine capable of deriving support in the atmosphere from air reactions, excluding reactions against the Earth's surface.'
- **It sets up three authorities:**
 - Directorate General of Civil Aviation (DGCA) for performing regulatory functions and overseeing safety.
 - Bureau of Civil Aviation Security (BCAS) for overseeing security.
 - Aircraft Accidents Investigation Bureau for investigation of aircraft accidents.
- It will empower above regulatory bodies to regulate and oversee the aviation sector, ensuring stricter compliance and enhanced safety standards. Thus, the Bill aims to align India's policies to be at par with international standards.
- The bill regulates activities related to aircrafts including manufacturing, possession, use, operation, trade.
 - To give impetus to Atamnibharbharat, the bill aims to set up final assembly line for the design and manufacturing of aircraft in India.

- It provides a system of support for the advancement of maintenance, repair, and overhaul (MRO) services and establish a stable environment for the MRO industry.
- It covers provisions in the area of air routes like prohibiting/restricting flight movement over certain sensitive areas.
- The bill empowers the central government to make Rules on several matters. These include:
 - Regulation of specified activities related to aircrafts and matters related to licencing, certification, and inspection,
 - Regulation of air transport services, and
 - Implementation of Convention relating to International Civil Aviation of 1944.
 - It adds that the central government may make Rules on radio telephone operator certificate and licences under the International Telecommunication Convention.
- The bill also specifies Rules for cancellation of pilot-licences in case of dangerous flying.
- The bill has provision to establish an efficient online grievance redressal mechanism to manage passenger complaints and ensure timely resolutions.
- The bill allows the central government to impose penalties for contravention of Rules. It empowers the central government to appoint an officer for adjudication of penalties. This officer must be of the rank of the Deputy Secretary to Government of India or above.
 - Further it adds an additional level of appeal. The appeal against the decisions of the First Appellate Officer will lie before the Second Appellate Officer. The Second Appellate Officer must be an officer of a higher rank than the First Appellate Officer.
- The Bill adds that appeals against an order of DGCA or BCAS will lie before the central government. No further appeals will be allowed against the central government's orders.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Bharatiya Vayuyan Vidheyak Bill 2024, consider the following statements:

1. It empowers the central government to make rules for the investigation of any air accident or incident.
2. The Bill introduces new taxes on aviation fuel.
3. The Bill, through its provisions, aims to support Make in India initiative.

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

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

Answer : d

THE DELIMITATION COMMISSION

Why in News: The Supreme Court of India recently held that orders passed by the Delimitation Commission are not out of purview of judicial review.

Key Details

- The Supreme Court of India in its Kishorchandra Chhanganlal Rathod vs Union of India 2024 judgement has set aside observations of the Gujarat High Court that there is bar on exercising power of judicial review in delimitation matters.
 - Earlier Gujarat High Court held that the order of delimitation of constituencies, issued in the exercise of statutory powers under the Delimitation Act, is entirely insusceptible to the powers of judicial review exercisable under Article 226 of the Constitution.
- The apex court observed that though Article 329 undeniably restricts the scope of judicial scrutiny, if judicial intervention is deemed completely barred, citizens would not have any forum to plead their grievances, leaving them solely at the mercy of the Delimitation Commission.
 - As a constitutional court and guardian of public interest, endorsing the view of the Gujarat High Court would be contrary to the Supreme Court's duties and the principle of separation of powers.
 - If the order made by Delimitation Commission is found to be manifestly arbitrary and irreconcilable to the constitutional values, the Court can grant the appropriate remedy to rectify the situation.
- The Supreme Court of India had also mentioned that a three-judge bench decision in Dravida Munnetra Kazhagam v. State of T.N. where the Court was called upon to interpret Articles 243O (Panchayat Election) and 243ZG (Municipal Corporation Election) of the Constitution, which mirror Article 329. The Court observed, "Rejecting the contention that these provisions place a complete bar on judicial intervention, it was noted that a constitutional Court can intervene for facilitating the elections or when a case for mala fide or arbitrary exercise of power is made out."

About Delimitation

- Delimitation means the process of fixing the number of seats and boundaries of territorial constituencies in each State for the Lok Sabha and Legislative assemblies.
- It also includes determining the seats to be reserved for Scheduled Castes (SC) and Scheduled Tribes (ST) in these houses.
- Article 82 and 170 of the Constitution provide that the number of seats in the Lok Sabha and State Legislative assemblies as well as its division into territorial constituencies shall be readjusted after each Census.
- This 'delimitation process' is performed by the 'Delimitation Commission' that is set up under an act of Parliament. Such an exercise was carried out in 1952, 1972 and 2002.

- However, it has been frozen as per the 1971 Census in order to encourage population control measures so that States with higher population growth do not end up having higher number of seats.
- This was done through the 42nd Amendment Act till the year 2000 and was extended by the 84th Amendment Act till 2026. Hence, the population based on which the number of seats is allocated refers to the population as per the 1971 Census.
- This number will be re-adjusted based on the first Census after 2026.
- The boundaries of territorial constituencies were readjusted (without changing the number of seats) and seats for SC and ST were determined as per the 2001 Census and will again be carried out after 2026.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the Delimitation process in India, consider the following statements:

1. The Delimitation process includes fixing the number of seats and boundaries of territorial constituencies in the Lok Sabha and State Legislative Assemblies.
2. The number of seats for Scheduled Castes (SC) and Scheduled Tribes (ST) is determined during the Delimitation process.
3. The Delimitation of constituencies has been frozen based on the 1971 Census, and this freeze has been extended by the 84th Amendment Act till 2026.
4. The population figures from the 2001 Census will be used for re-adjusting the number of seats after 2026.

Which of the statements given above is/are correct?

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

Answer : a

THE UNIFORM CIVIL CODE

Why in News: During Independence Day Speech, the Prime Minister of India had highlighted the need to move towards a “secular civil code” instead of the existent “communal civil code”.

What is Uniform Civil Code?

- A Uniform Civil Code is one that would provide for one law for the entire country, applicable to all religious communities in their personal matters such as marriage, divorce, inheritance, adoption etc.
- Article 44 of the Constitution of India states that the State shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India.

Present Situation in India

- Currently, Indian personal law is fairly complex, with each religion adhering to its own specific laws. Separate laws govern Hindus including Sikhs, Jains and Buddhist, Muslims, Christians, and followers of other religions.
- At the same time, Indian laws do follow a uniform code in civil matters like Indian Contract Act, Civil Procedure Code, Sale of Goods Act, Transfer of Property Act, Partnership Act, Evidence Act etc.
- However, States have made hundreds of amendments and therefore in certain matters, there is diversity even under these secular civil laws.

Arguments in Favour of the Uniform Civil Code

- A common law unites people by avoiding animosity due to preferential treatment to certain communities by law.
- It would ensure equality before the law for all Indians, as promised in Article 14 of the Constitution.
- It will help in streamline the process of registration of marriages, a transparent system of divorce which upholds the dignity of women, a right to maintenance and alimony to the spouse and children in case of separation and divorce, a civil process for divorce, a right to remarry, an equal right to inheritance for all children in parental property, whether inherited or self-acquired, right to adoption and rights of adopted children being the same as biological children.
- It reduces complexities, contradictions and legal ambiguities.
- Loopholes in personal can't be exploited.
 - For example, polygamy is illegal in India but it is allowed under Islamic personal law.

Arguments Against the Uniform Civil Code

- It would destroy the essential fabric of India, which is a mosaic of 22 official languages, 398 dialects, and 645 tribes.
- UCC is Infringement upon the constitutional right to freely exercise one's chosen religion. This right enables religious communities to adhere to their respective personal laws.
 - For example, Article 25, which grants each religious collective the entitlement to autonomously administer its internal matters, while Article 29 safeguards their prerogative to preserve their unique cultural heritage.
- There is a contention that the Uniform Civil Code may potentially enforce a code that is influenced by one particular religious practices in all communities. Uniform provisions tend to be unjust towards marginalised and vulnerable groups.
- According to the 21st Law Commission, the presence of disparities does not necessarily indicate discriminatory practices, but rather serves as an indication of a strong and vibrant democratic system.

- According to the Constitution, the authority to enact legislation pertaining to personal laws is vested in both the Parliament and state Assemblies. The inclusion of personal law in the Concurrent List (entry No. 5) appears to be motivated by the desire to maintain legal diversity.
- The Adivasis possess distinct personal laws and are not classified as Hindus due to their practice of nature worship instead of idol worship and their observance of burial rituals for the deceased. It has been argued that the marriage and death rituals observed by tribal communities differ from Hindu customs, and there is concern that these practices may also face prohibition.

Way Forward

- Implementing a Uniform Civil Code (UCC) in India requires a careful, phased approach that respects the nation's cultural and religious diversity. This process should begin with inclusive consultations involving all communities to build consensus and address concerns.
- Harmonizing existing personal laws where possible, and initially introducing the UCC on a voluntary basis, can facilitate broader acceptance.
- The UCC should focus on promoting gender equality and social justice while ensuring that religious freedoms are respected and minority rights are protected.
- Political consensus and independent monitoring will be crucial to its success, and learning from international examples can guide its implementation.
- Ultimately, a balanced and inclusive approach is essential to achieving a UCC that unites the nation while upholding equality and justice.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following Articles of the Indian Constitution explicitly provides for the promotion of a Uniform Civil Code?

- (a) Article 21 (b) Article 25
(c) Article 44 (d) Article 46

Answer : c

Descriptive Question

Q. The Uniform Civil Code (UCC) aims to provide a common set of laws governing personal matters for all citizens. Discuss. [10 marks] [150 words]

SENIOR ADVOCATE OF THE SUPREME COURT OF INDIA

Why in News: The Supreme Court of India, in a full court meeting, recently designated 39 lawyers and advocates-on-record as senior advocates.

Key Details

- The process was led by Chief Justice D Y Chandrachud.
- Out of the 39 lawyers elevated, 10 are women.
- According to the rules framed by the Supreme Court under Article 145 of the Constitution, only advocates designated as advocate-on-record can file cases in the apex court, which conducts AoR examinations twice a year.
- These designations were given based on new guidelines which were delivered on May 12, 2023, by a three-judge Bench led by Justice S K Kaul in a case seeking modifications to the 2018 guidelines on how the 'senior advocate' designation is granted.

About Senior Advocate

- Section 16 of the Advocates Act refers to the separate class of 'senior advocate'. Both the Supreme Court and High Courts can confer senior designation to lawyers based on their merit, experience, special knowledge of the law and standing at the Bar.
 - Section 16 of the Advocates Act, 1961 prescribes two different classes of advocates, "senior advocates and other advocates".
 - Section 16 also states that senior advocates may be subject to certain additional restrictions. For the senior advocates designated by the Supreme Court, these restrictions can be found in the Supreme Court Rules, 2013.
 - They are barred from filing a vakalatnama, appearing before a court without a junior or an advocate-on-record, doing drafting work, or directly accepting briefs for cases from clients.
- Section 23 of the Act says, "senior advocates shall have pre-audience over other lawyers and their right of pre-audience inter se shall be determined by their respective seniority".
- The designation of senior advocate is "a mark of excellence to advocates who have distinguished themselves and have made a significant contribution to the development of the legal profession.
- It identifies advocates whose standing and achievements would justify an expectation that they can provide outstanding services as advocates in the best interest of the administration of justice.

The conditions on which Advocates shall be eligible for designation as Senior Advocates are:

(i) At least

- (a) ten years' standing as an Advocate; or

(b) ten years' combined standing as an Advocate and as a District and Sessions Judge or as a Judicial Member of any Tribunal in India.

whose qualification for eligibility for such appointment is not less than that prescribed for appointment as a District Judge.

(ii) Practice mainly in the Supreme Court.

(iii) Attainment of the age of 45 years, unless the age limit is relaxed by the Committee, or the name has been recommended by the Chief Justice of India or a Judge of the Supreme Court.

Note: Applicant-advocates having domain expertise of practising before specialized Tribunals may be given concession with regard to the extent of appearances in the Supreme Court.

2018 Guidelines

- In October 2018, the Supreme Court of India released a list of 'Guidelines to Regulate the Conferment of Designation of Senior Advocates'.
- The guidelines discouraged the system of 'voting by secret ballot', except in cases where it was "unavoidable".
- It created a 'Committee for Designation of Senior Advocates' which is chaired by the CJI and comprises the two senior-most SC judges, the Attorney General of India, and a "member of the Bar" nominated by the chair and other members.
- The CJI or any other judge could recommend the name of an advocate for designation.
- Alternatively, advocates could submit their applications to the 'permanent secretariat', which would evaluate them on various criteria including years of legal practice as an advocate, district judge, or a judicial member of an Indian tribunal.
- Prior to 2018, Section 16 of the Advocates Act, 1961, governed the appointment of senior advocates.

New guidelines 2023

- The Chief Justice of India, along with any other Supreme Court judge, can recommend in writing the name of an advocate for the designation.
- The new guidelines prescribe the minimum age as 45 years to apply for the 'senior advocate' designation. This age limit may, however, be relaxed by the Committee for Designation of Senior Advocates (more on that later), the CJI, or a Supreme Court judge, if they have recommended an advocate's name. No minimum age was prescribed under the 2018 guidelines.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which one of the following statements is **not** correct?

- A senior advocate is the person who has been declared by the President as "senior advocate" after analysing his profile, practice, citations and history.
- An Advocate on record is the person who by the way of vakalatnama represent clients as his advocate for the particular matter/case.

(c) Due to the vast experience of the senior advocate in the field of law and also due to his face value before the judge, the case of the client is strongly put before the court due to the appearance of a senior advocate in the matter.

(d) The reason to maintain the Advocate on record is to maintain the expected standard of drafting and pleading before the Hon'ble Supreme Court.

Answer : a

ALDERMEN TO THE MUNICIPAL CORPORATION OF DELHI

Why in News: The Supreme Court of India has recently upheld the Delhi Lieutenant Governor's decision to nominate 10 'aldermen' to the Municipal Corporation of Delhi (MCD).

What was the Issue?

- After the present government of Delhi won the municipal elections, the LG appointed 10 'aldermen,' which was opposed by the Delhi government. The petition of the Delhi government had sought the quashing of orders, whereby the L-G nominated 10 persons as nominated members of the MCD.
- Delhi government contention was that L-G has to work on the basis of aid and advice of council of minister.
- Also, this is the first time since Article 239AA came into effect in 1991 that such a nomination has been made by the L-G completely bypassing the elected government.
- The legal question before the Supreme Court was whether the L-G could nominate the 10 persons as a part of the statutory duty of his office or was he bound by the aid and advice of the Council of Ministers.

Judgment of the Supreme Court of India

- The authority of the Lieutenant Governor (L-G) of Delhi to nominate 10 aldermen to the Municipal Corporation of Delhi is a statutory duty attached to his office and he is not bound by the aid and advice of the Council of Ministers. Therefore, the power to be exercised is the statutory duty of the LG and not the executive power of the state.
- The apex court held that the power of the L-G is drawn from Section 3(3)(b)(1) of the Delhi Municipal Corporation Act, 1957.
 - Under Section 3(3)(b)(1) of the Delhi Municipal Corporation Act 1957, which provides that the Lieutenant Governor shall nominate 10 persons, who are not less than 25 years of age and who have special knowledge or experience in municipal administration, to the MCD.

Importance of Alderman in MCD

- Under the DMC Act, Delhi is divided into 12 zones. The Act also creates 'Wards Committee' for each zone comprising elected representatives and the aldermen within that territory.

- Though the aldermen do not have the right to vote in the MCD meetings, they play a crucial role in the functioning of the house through the Ward Committee. They have special knowledge or experience in municipal administration.
- Each of the 12 Wards Committees must elect a member to be a part of the MCD Standing Committee in their first meeting. Aldermen can vote in these elections and stand as candidates for being elected as a member of the Standing Committee. The remaining six Standing Committee members are chosen directly by the MCD house after the mayoral elections.
- Though the Mayor is the nominal head of the MCD, the Standing Committee effectively manages the functions of the corporation, and it cannot be constituted without the alderman participating in the voting process.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements accurately describes the authority of the Lieutenant Governor (L-G) of Delhi under Section 3(3)(b)(1) of the Delhi Municipal Corporation Act, 1957?
- (a) The L-G has the authority to nominate 10 persons to the Municipal Corporation of Delhi based on their political affiliation.
 - (b) The L-G's power to nominate members to the Municipal Corporation of Delhi is a statutory duty and is not subject to the aid and advice of the Delhi Council of Ministers.
 - (c) The L-G's nominations to the Municipal Corporation of Delhi are made under the executive powers of the Delhi government.
 - (d) Section 3(3)(b)(1) allows the Delhi Council of Ministers to directly nominate 10 persons to the Municipal Corporation of Delhi.

Answer : b

Descriptive Question

- Q. Briefly discuss how powers of the Lieutenant Governor of Delhi differ from the Governor of a State? [10 marks] [150 words]

SANCTION TO PROSECUTE A PUBLIC SERVANT

Why in News: Karnataka Governor recently approved the police investigation into an alleged corruption case against the Chief Minister Siddaramaiah.

Key Details

- Karnataka Governor approved to open an investigation against Chief Minister Siddaramaiah and to prosecute him in connection with alleged irregularities in the allotment of compensatory plots to his wife whose land had been lost to the acquisition process by the Mysore Urban Development Authority.

- The issue has raised legal and constitutional questions, resulting in the Karnataka High Court asking a trial court to postpone its consideration of private complaints against him.
- It is argued that the sanction was granted without application of mind as the Governor has not referred to the merits of the complaints with regard to allegations made against Chief Minister Siddaramaiah.

Provisions on granting sanction

- The Governor sanctioned initiating proceedings against the CM of Karnataka under the Prevention of Corruption Act, 1988, and the Bharatiya Nyaya Sanhita, 2023.
 - Section 17A of the PCA deals with investigation of offences related to public servants, allegedly committed during the "discharge of official functions or duties". This section was introduced through an amendment to the PCA in 2018.
 - To investigate any such offence, the police officer must receive the "previous approval" of the "authority competent to remove" the public official from office, or the Central or state government, depending on where the public official is employed.
- Section 218 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), the procedure code that has replaced the CrPC, retains the sanction provisions. When the PCA was amended in 2018, a new provision was introduced under which the government's approval is required, even to begin an investigation.
- While under Section 17A, the appropriate authority's approval is necessary to begin an investigation, the provision for sanction under Section 19 is a pre-requisite for any court to take cognisance of a charge sheet or complaint of corruption.
- Section 17A specifically deals with the procedure when the police seek sanction to conduct an inquiry. However, in the above case, no police officer approached the Governor and sanction was given based on the complaints made by three anti-corruption activists.

Governor's role in a case against a CM

- Provisions relating to sanction in the CrPC generally spoke of the State government and the Central government as the authority to grant sanctions for those employed by their respective governments. However, both the 1947 and 1988 versions of the PCA have a clause stating that in the case of "any other person", the sanction would be granted by the authority competent to remove the public servant in office.
- Article 163 of the Constitution of India states, "There shall be a Council of Ministers with the Chief Minister at the head to aid and advise the Governor in the exercise of his functions, except in so far as he is by or under this Constitution required to exercise his functions or any of them in his discretion".

- As the Governor is vested with the power to dismiss a CM, the Governor is seen as the authority to consider granting sanction for prosecuting a CM.
- Questions have often arisen as to whether the Governor exercises his discretion while considering sanction, or he is bound to act on the aid and advice of the Council of Ministers.
- The Supreme Court has held on numerous occasions that the Governor of a State is "bound" by the aid and advice of this Council of Ministers. In the MUDA scam case, CM Siddaramaiah argues that the Governor is bound by the resolution sent by the Council of Ministers on August 1 urging him to withdraw the show-cause notice.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. In light of the recent tussle between the Governor and Chief Minister of Karnataka, examine the discretionary powers of the Governor of a state. (10 Marks, 150 Words)

THE NATIONAL COMMISSION FOR ALLIED, HEALTHCARE PROFESSIONS ACT 2021

Why in News: The Supreme Court has recently asked the Centre and state governments to effectively implement the National Commission for Allied & Healthcare Professions Act (NCAHP), 2021 within given deadline.

Key Details

- The directive of the apex court came in response to a public interest litigation filed (PIL) by the Joint Forum of Medical Technologists of India (JFMTI).
 - The PIL called for the urgent implementation of the 2021 Act to regulate and standardise the allied healthcare sector in India, thereby ensuring better quality healthcare services and education.
 - The petition pointed out that the original timeline required state councils to be constituted within six months of the Act's commencement (May 25, 2021). As of now out of all states and UTs, only 14 states have constituted state councils.
 - The PIL has highlighted that the absence of a dedicated council in the country to regulate and set standards for health care professions has led to a proliferation of institutes offering diplomas and certificate courses without any standardised curricula or teaching methods.
- The apex court in its order included the establishment of the respective professional councils and state allied and health care councils to effectuate the central law, which

provides a regulatory mechanism to streamline the education and practice of allied health care professionals, such as technicians, therapists and duty assistants, in the country.

- The apex court has also directed the Union ministry of health to convene an online meeting with the concerned secretaries of the states within the given timelines to expedite the process.

Important Provision of NCAHP Act

- **National Commission for Allied and Healthcare Professions:** Act will set up the National Commission for Allied and Healthcare Professions.
- **Functions of the Commission:** The Commission will perform the following functions with regard to Allied and Healthcare professionals:
 - framing policies and standards for regulating education and practice,
 - creating and maintaining an online Central Register of all registered professionals,
 - providing basic standards of education, courses, curriculum, staff qualifications, examination, training, maximum fee payable for various categories, and
 - providing for a uniform entrance and exit examination, among others.
- **Professional Councils:** The Commission will constitute a Professional Council for every recognised category of allied and healthcare professions. The Professional Council will consist of a president and 4 to 24 members, representing each profession in the recognised category. The Commission may delegate any of its functions to this Council.
- **State Councils:** Within six months from the passage of the Bill, state governments will constitute State Allied and Healthcare Councils. The State Councils will:
 - enforce professional conduct and code of ethics to be observed by allied healthcare professionals,
 - maintain respective State Registers,
 - inspect allied and healthcare institutions, and
 - ensure uniform entry and exit examinations.
- **Establishment of institutions:** Prior permission of the State Council will be required to
 - Establish a new institution
 - Open new courses, increase the admission capacity, or admit a new batch of students to existing institutions.
 - If such permission is not sought, then any qualification granted to a student from such an institution will not be recognised under the act.
- **Offences and penalties:** No person is allowed to practice as a qualified allied and healthcare practitioner other than those enrolled in a State Register or the National Register. Any person who contravenes this provision will be punished with a fine of Rs 50,000.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which entity is responsible for providing guidelines on the basic standards of education and curriculum for allied and healthcare professions according to the NCAHP Act?

- (a) The State Allied and Healthcare Councils
- (b) The National Commission for Allied and Healthcare Professions
- (c) The Ministry of Health and Family Welfare
- (d) The Professional Councils

Answer : b

Descriptive Question

Q. Evaluate the key provisions of the National Commission for Allied and Healthcare Professions (NCAHP) Act, 2024, and their implications for the management and regulation of allied and healthcare professions in India. [15 marks] [250 words]

DRIVE TO POPULARISE THE CONSTITUTION OF INDIA

Why in News: The Government of India has taken various steps to popularise the understanding of the Indian Constitution and to increase the awareness about the legal rights.

Citizens' Duties Awareness Programme

- The Government of India, through the **Department of Justice** as the nodal department, launched the **Citizens' Duties Awareness Programme** (CDAP) on November 26, 2019, aiming to increase awareness of the Constitution with a focus on Fundamental Duties.
- CDAP was able to reach over 48.6 crore citizens through effective implementation of various programmes by various Ministries/Departments of the Government of India, States/UTs, Judiciary and NSS/NYK Volunteers.
- The program utilized tools such as
 - Online Preamble reading (21.86 lakh),
 - Online Pledge taking (1.90 lakh),
 - Webinars (10,600),
 - Messaging through E-tickets (14.5 Cr)
 - Social media (10.95 Cr).

Hamara Samvidhan Hamara Samman

- During the current year, the **Department of Justice** has initiated a pan-India, year-long nationwide campaign titled **Hamara Samvidhan Hamara Samman** to celebrate the 75th year of India as a Republic and the adoption of India's Constitution.

- The campaign was launched on January 24, 2024, by the Hon'ble Vice-President of India.
- This campaign aims to reaffirm our collective commitment to the principles enshrined in the Constitution of India and to celebrate the shared values that bind our nation.
- This nationwide initiative provides opportunities for every citizen to participate in various ways, empowering them to contribute meaningfully through its sub-campaigns:
 - Sabko Nyaya HarGhar Nyaya
 - Nav Bharat Nav Sankalp
 - Vidhi Jagriti Abhiyaan
- **Other initiatives**
 - Panch Pran Pledge in regional languages
 - Nyaya Sewa Melas - citizen-centric service fairs
 - Online competitions such as the Samvidhan Quiz, Panch Pran Rangotsav (poster-making), and Panch Pran Anubhav (reel-making) were launched on the MyGov platform.
- To enhance constitutional education, the campaign has involved law students and partnered with agencies like Doordarshan and IGNOU's Gyan Vani and Gyan Darshan platforms.

Legal Literacy and Awareness

- The Department of Justice (DoJ) is also implementing a dedicated program for legal literacy and legal awareness under the scheme of the "Designing Innovative Solutions for Holistic Access to Justice" (DISHA), introduced in 2021.
- As of June 30, 2024, the legal awareness has reached 15.30 lakh individuals through community engagement, webinars, and the dissemination of educational materials on the Constitution, legal rights, and duties.
- The National Legal Services Authority (NALSA), through its Legal Services Authorities at the state, district, and taluk levels, conducts legal literacy and awareness programs and campaigns to educate the general public about their rights, benefits, and privileges guaranteed by the Constitution and other enactments.
 - The Legal Services Authorities have conducted a range of legal awareness programs covering various laws and schemes related to children, laborers, disaster victims, SC/ST communities, and persons with disabilities.
 - Additionally, they have created and distributed booklets and pamphlets in accessible language to inform the public about these laws.
 - To effectively reach vulnerable sections of society, NALSA has developed and implemented a Module for Legal Services Camps through Legal Services Institutions. In 2023-2024 alone, 30,043 legal awareness camps were organized, benefiting 11.46 lakh citizens.
 - This approach marks a shift from traditional methods of general legal awareness to a model focused on true empowerment, grounded in need-based analysis and targeted action.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Initiatives such as 'Panch Pran Pledge', 'Nyaya Sewa Melas' are related to
- Popularising Buddhist sites in India.
 - Renovation of places associated with Dr. B.R. Ambedkar.
 - Promotion of Panchayati Raj system
 - Initiatives to popularize the understanding of the Constitution and to increase the awareness about the legal rights.

Answer : d

THE COMPETITION COMMISSION OF INDIA

Why in News: The Competition Commission of India (CCI) has recently highlighting that the proposed merger of media assets of Reliance Industries and Walt Disney in India could hurt competition in India.

Consequences of Reliance-Disney Merger Deal

- As per the **Competition (Amendment) Act 2023**, when the CCI is of the opinion that a merger is likely to have an **appreciable adverse effect on competition (AAEC)**, it will issue a statement of objections to the parties and direct them to explain within 25 days of receipt as to why such merger should be allowed.
- In some cases, the CCI can suo motu propose appropriate modifications of a merger.
- The CCI has pointed out that the proposed Reliance Industries and Walt Disney merger could create a dominant entity in India's entertainment sector, holding significant cricket broadcasting rights
 - The combined entity is likely to have market shares in many segments which would exceed the CCI's thresholds for combinations.
 - The combined entity will exercise near monopoly power over digital and TV cricket rights including IPL.
 - For example, the proposed Star-Viacom18 entity will consolidate all the key cricket rights, including the Indian Premier League (IPL), International Cricket Council (ICC), Board of Control for Cricket in India (BCCI), Cricket Australia, and Cricket South Africa.
- Note:** As per the Sports Act 2007, sports

broadcasters have to mandatorily share the feeds of sporting events of national importance including cricket tournaments featuring the Indian team with public broadcaster Prasar Bharati. Indian Premier League is outside the purview of the Sports Act.

- The consolidation of content, distribution, and advertising power within one entity is expected to significantly impact the overall market dynamics.
- The merger could cause disturbances in the level playing field of broadcasting sector.
- The combined entity, which had operating revenue of Rs 25,000 crore in FY23, will inherit 115 TV channels and two streaming platforms, Disney+ Hotstar and JioCinema.
- To ease concerns, Reliance and Disney have proposed shutting certain channels and await regulatory approval.

The **Competition Act, 2002**, as amended by the Competition (Amendment) Act, 2007, follows the philosophy of modern competition laws.

The Act prohibits anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.

Competition Commission of India

- The objectives of the Competition Act are sought to be achieved through the Competition Commission of India, which has been established by the Central Government with effect from 14th October 2003.
- CCI consists of a Chairperson and 6 Members appointed by the Central Government.
- It is the duty of the Commission to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.
- The Commission is also required to give opinion on competition issues on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. What is the composition of the Competition Commission of India as per the Competition Act, 2002?
- A Chairperson and 3 Members
 - A Chairperson and 6 Members
 - A Chairperson and 9 Members
 - A Chairperson and 5 Members

Answer : b

GUIDELINES FOR HANDLING PUBLIC GRIEVANCES

Why in News: The Union Government has recently issued Comprehensive Guidelines for Handling Public Grievances for making grievance redressal time-bound, accessible and meaningful to empower citizens, streamline process, bring greater clarity and focus to redressal of public grievances.

Key highlights of the Comprehensive Guidelines

- An integrated user-friendly grievance filing platform with **CPGRAMS** www.pgportal.gov.in being the common open platform on which grievances can be registered by citizens which will operate as a single window experience.
- Appointment of **Nodal Officers** for Public Grievances in all Ministries/ Departments who will address grievances promptly, fairly and efficiently.
 - Ministries/ Departments with high grievance loads to have dedicated Nodal Officers.
 - The Role of the Nodal Officer is effective categorization, monitoring pendency, examine the feedback for process and policy improvements, undertake root cause analysis, collation of monthly data sets and supervisory oversight of the Grievance Redressal Officers of the Ministry/ Department.
- **Dedicated Grievance Cells** shall be set-up in every Ministry/ Department with sufficient resources having knowledge of schemes and activities.
- The **timelines** for effective grievance redressal have been reduced to **21 days**. In cases where grievance redressal is likely to take longer, citizens shall be given an interim reply.
- An **escalation process** has been envisaged with the appointment of appellate officers and sub-nodal appellate officers in Ministries/ Departments.
- A **grievance redressal assessment index** for ranking Ministries/ Departments shall be issued on a monthly basis.
- Training and Capacity building of grievance officers on CPGRAMS shall be conducted through 36 Administrative Training Institutes of States/ UT's under the **SEVOTTAM** scheme.

CPGRAMS

- Centralised Public Grievance Redress and Monitoring System (CPGRAMS) is an online platform available to the citizens 24x7 to lodge their grievances to the public authorities on any subject related to service delivery.
- It is a single portal connected to all the Ministries/ Departments of Government of India and States. Every Ministry and States have role-based access to this system.
- CPGRAMS is also accessible to the citizens through standalone mobile application downloadable through Google Play store and mobile application integrated with UMANG.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding CPGRAMS:

1. The system provides online access to all citizens including those in Armed Forces personnel to report their grievances.
2. Right to Information (RTI) matters are not taken up for redressal by CPGRAMS.

Which of the above statements is/are correct?

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

Answer : c

RULING ON SC/ST PROTECTION LAW

Why in News: Not every 'insult' against SC/ST persons can be considered as offence under SC/ST protection law, says the India Supreme Court of India.

Key Details

- The Supreme Court held in a judgment that not all insults and intimidatory comments aimed at a Scheduled Caste or Scheduled Tribe person would be an offence under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.
- The aggressor, who is not a Scheduled Caste/Scheduled Tribe (SC/ST) person, cannot be booked under the 1989 Act merely because the victim of his insults or intimidatory act happened to be a SC/ST person.
- The Act would come into play if the insult had been intentionally thrown at the victim only on account that the latter was a SC/ST member.
 - The very reason behind the intentional insult or intimidation should solely be the identity of the victim as a member of the SC/ST community.

Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989

- **Section 3(1)(r)** deals with insulting an SC/ST person in public with intention to humiliate the person.
 - Mere knowledge of the fact that the victim is an SC/ST member would not be sufficient to attract Section 3(1)(r).
 - To effectively invoke this provision, the 'humiliation' inflicted by the aggressor should be intricately associated with the caste identity of the victim.

- **Section 3(1)(u)** covers the offence of promoting hatred, ill-will or enmity against SC/ST communities.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. If a person imposes or threatens a social or economic boycott of any person or a family or a group belonging to a Scheduled Caste or a Scheduled Tribe then he shall be punished with
- (a) Imprisonment for a term which shall not be less than six months but which may extend to five years and with fine.

- (b) Imprisonment for a term which shall not be less than three months but which may extend to five years and with fine.
- (c) Imprisonment for a term which shall not be less than one month but which may extend to five years and with fine.
- (d) Imprisonment for a term which shall not be less than one year but which may extend to five years and with fine.

Answer : a

Free Initiative by Chahal Academy



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INTERNATIONAL RELATIONS

INDIA-BANGLADESH RELATIONS

Why in News: The end of the Sheikh Hasina government should not be perceived as a mortal blow to India-Bangladesh relations.

Key Details

- Following the ousting of Prime Minister Sheikh Hasina, a 17-member interim administration led by Nobel Laureate Professor Muhammad Yunus took office.
- Policy-making circles in Dhaka contended that the interim government would give bilateral relations top priority because it is beneficial for many Bangladeshi sectors to keep positive relations with India.

Immediate impacts on India-Bangladesh Relations:

- India sees the events in Bangladesh as a blow to connectivity, trade, and security as well as a potential loss of power.
- Since Sheikh Hasina's resignation, there are indications that the two neighbors are becoming icier.
- Non-essential employees of India's high commission have left Bangladesh after her departure.
- The Meghalaya government has temporarily suspended business operations at the border haats along the International Border with Bangladesh due to the volatile situation in that country.

Engagements Between India and Bangladesh**Cooperation for regional stability:**

- India faces cross-border insurgency and illegal activities such as smuggling and human trafficking that affects northeastern Indian states.
- Both countries signed a land boundary agreement in 2015 to make the land border more stable and secure.

Economic Ties:

- The economic relationship between India and Bangladesh is substantial. Trade between the two countries has grown significantly, and India is one of Bangladesh's largest trading partners.
- Additionally, Indian investment in sectors like infrastructure and energy contributes to economic development in Bangladesh, which in turn benefits Indian businesses and the broader economy.
- Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh in

Asia. Bangladesh exported USD 1.97 billion of goods to India in FY 2023-24. In FY 2023-24, the total bilateral trade has been reported as USD 14.01 billion.

Strategic Engagements:

- Bangladesh's geographical position, situated between India and Myanmar, provides India with strategic advantages.
- It acts as a buffer state and plays a role in regional dynamics involving China, Myanmar, and the broader Indo-Pacific region.

Water Resources sharing:

- The management of transboundary rivers, such as the Ganges, the Brahmaputra and its tributary Teesta, is a crucial issue.
- Cooperative agreements on water sharing are essential for addressing water scarcity and environmental challenges, which can impact millions of people in both countries.

Counterterrorism and Security:

- Cooperation between India and Bangladesh on counterterrorism is vital.
- Bangladesh has been an important partner in combating terrorism and extremism, which directly impacts India's security.
- There are a number of terror outfits like United Liberation Front of Assam (ULFA) active in Bangladesh and arouse anti Indian sentiments.

Connectivity and Trade Routes:

- Bangladesh serves as a key corridor for connectivity between India's northeastern states and the rest of the country.
- Improved infrastructure and transportation links through Bangladesh enhance regional connectivity, benefiting trade and movement.
- Important examples are Agartala-Akhaura rail connectivity project and Khulna - Mongla Port Rail Line projects.

Cultural and Historical Ties:

- Shared cultural and historical links foster stronger bilateral relations.
- Collaboration in areas such as education, tourism, and people-to-people connections helps to build a deeper relationship.

Energy Sector:

- Collaboration in energy infrastructure, including the development of cross-border power grids, thermal power plants, nuclear power plants and renewable energy projects, could address energy needs and enhance sustainability.
- Maitree Super Thermal Power Plant and Rooppur nuclear

power project (by the help of India and Russia) in Bangladesh are important examples..

Defense cooperation:

- Both countries are engaged in defense activities on various fronts.
- Exercise Sampriti (Army), Exercise Bongo Sagar (Navy) are important examples.

Regional cooperation:

- Both countries are actively associated with a number of regional organizations to promote regional cooperation.
- Both countries are common members in South Asian Association for Regional Cooperation (SAARC), IORA (Indian Ocean Rim Association) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).

Contemporary Challenges Ahead:

Diplomatic challenges:

- It will bring diplomatic challenges before India with respect to stability in the region specifically with countries with which India already has contentious relations. In recent outrage in Bangladesh it has been alleged that Pakistan's intelligence agency ISI has been fuelling the unrest.

Stability Challenge:

- The government crisis in Bangladesh will lead to unrest in India's north east region. Instability in Bangladesh will increase refugee influx in north eastern states of India.

Economic Challenges:

- Bilateral trade between both countries has been affected due to the recent crisis in Bangladesh.

Political Challenges:

- Both countries have been involved in deep political engagements since the liberation war in 1971. Recent political change in Bangladesh has not only changed the political scenario in Bangladesh but has also affected its political relations with India as well.

Social Challenges:

- The Rohingya crisis has been one of the important challenges before both countries.
- Recently, attacks on Hindu minorities in Bangladesh have also created communal tensions in the region.

Way Forward

Short Terms Measures

- Bangladesh has been an excellent neighbor of India ever since the 1971 liberation war ended.
- India needs to accept the people's movement and the change, and it needs to send a special envoy to speak with the interim government.
- The present Interim government has been led by the BNP (Bangladesh Nationalist Party).
- Bangladesh has to work to change the perspective that Awami League means totally pro-India policy and BNP means anti-India policy.

- Both countries should place a high priority on bilateral ties as it is in the interest of various sectors in India as well as Bangladesh to maintain a good relationship.
- Both countries should resume negotiations over river water sharing like Teesta and Ganga.
- Both countries should resume Visa services. In 2023, around 16 lakh Indian visas were issued to Bangladeshis.
- In view of the growing demand for Indian visas, New Delhi had agreed, during former Prime Minister Hasina's state visit in June, to start an e-visa facility for patients seeking medical treatment in India. Visa service is important for India due to health and other forms of tourism.
- For a short term measure, Bangladesh must bring the law and order situation under control and must refrain from all kinds of violence.
- The Mahari system in Garo Hills, which has a strong clan-based network, to aid in the identification, rehabilitation, and eventual deportation of the refugees, must be utilized.

Long Term Measures

Regional Integration:

- Working together within regional frameworks like the SAARC, IORA and BIMSTEC to address regional issues and promote collective development.

Diplomacy and Regional Stability:

- Bangladesh shares a long border with India, and its stability is crucial for regional security.
- As Chinese aggression is a common threat for both countries, Bangladesh is important for stability in the South East Asian region and for successful implementation of India's Act East Policy, neighborhood first policy and SAGAR (Security and growth for all in the region) initiative.

Trade engagements:

- Expanding trade agreements and increasing investments in sectors such as textiles, pharmaceuticals, and information technology can benefit both economies.
- Joint ventures and partnerships in infrastructure projects, including roads and ports, could also be explored.

Intelligence Sharing:

- Enhancing cooperation on intelligence sharing and counterterrorism measures to combat extremist threats and organized crime.

Academic Collaboration:

- Expanding educational exchanges, joint research projects, and scholarships to foster academic cooperation and cultural understanding.

Tourism:

- Promoting tourism through joint initiatives, such as cultural festivals and heritage tours, to boost people-to-people connections.

Public Health:

- Collaborating on healthcare projects, including disease control and pandemic preparedness, to enhance health outcomes and respond to public health emergencies.

• **Medical Tourism:**

- Developing medical tourism by leveraging the strengths of both countries' healthcare sectors.

Conclusion

The interim government in Bangladesh pledges to deliver a government which assures safety to citizens and to build positive relations with neighbors, specifically India. Bangladesh must follow the policy of not "anger" or "revenge" but "love and peace" which will rebuild the nation.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following regional organization-

- | | |
|------------|----------|
| 1. BIMSTEC | 2. SAARC |
| 3. IORA | 4. ASEAN |

In how many of the above organizations, India and Bangladesh are common members-

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

Answer: b (1, 2 and 3 only)

Descriptive Question

Q. In the context of recent political changes in Bangladesh, examine the immediate impacts and long term possibilities between India-Bangladesh relations. [15 marks] [250 Words]

THE THIRD VOICE OF GLOBAL SOUTH SUMMIT 2024

Why in News: India has recently hosted the 3rd Voice of Global South Summit in virtual format.

Key Details

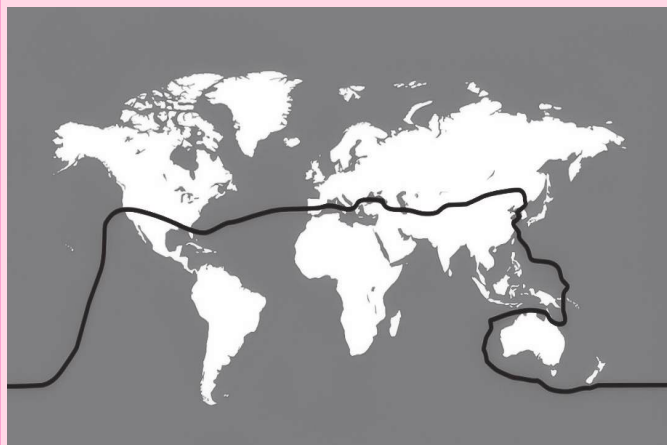
- India had hosted the 1st Voice of Global South Summit (VOGSS) on January 12-13, 2023, and the second Voice of Global South Summit on November 17, 2023, both in virtual format. 123 countries participated in the 3rd VOGSS. However, China and Pakistan were not invited.
- The third VOGSS, with the overarching theme of "An Empowered Global South for a Sustainable Future", aims to act as a platform to expand discussions held in the previous summits on a range of complex challenges that continue to affect the world, such as conflicts, food and energy security crises, climate change – all of which disproportionately affect developing countries in a severe manner.

Important Highlights of the Summit

- **Extending Philosophy of Vasudhaiva Kutumbakam:** The Voice of Global South Summit is an extension to the international arena of India's philosophy of Vasudhaiva Kutumbakam, or "One Earth, One Family, One Future" along with a vision of vision of Sabka Saath, Sabka Vikas, Sabka Vishwas and Sabka Prayas.
- **Global Development Compact:** India proposed a four-pronged Global Development Compact, targeting trade for development, capacity building, technology sharing, and concessional finance, to help Global South countries achieve Sustainable Development Goals (SDGs) and drive growth beyond 2030.
 - India announced a USD 2.5 million fund for trade promotion and a USD 1 million fund for capacity building in trade policy.
- **Health and Education Initiatives:**
 - Making affordable generic medicines accessible, strengthening drug regulation, and sharing technology in natural farming.
 - In education, discussions centered on creating human resources to accelerate SDG achievement, promoting women-led development, and integrating emerging technologies with skill development.
- **Climate Action and Energy Transition:** The summit emphasized the urgency of addressing climate change through climate justice, equitable access to climate finance, and the need for technology transfer and capacity building.
 - The discussions also underscored the importance of energy security and accessibility, with a focus on transitioning to clean energy technologies.
 - The participants also reaffirmed the principles of equity and Common but Differentiated Responsibilities and Respective Capabilities.
 - **Global Governance:** The summit called for more inclusive and equitable global governance, emphasizing the importance of democratizing multilateral institutions like the UN to better represent developing countries' interests.
- **Youth Empowerment and Digital Inclusion:** The summit highlighted the importance of empowering youth as active drivers of development, with a focus on quality education, vocational training, and digital inclusion.
- **South-South Cooperation:** Participants discussed the potential of digital public infrastructure (DPI) models in enhancing service delivery and economic growth, advocating for greater collaboration on digital innovations and the development of start-up ecosystems within the Global South.
 - The summit stressed the importance of expanding financing options for the Global South, particularly through multilateral development banks and tackling liquidity constraints, and scaling up affordable long-term financing to support sustainable development initiatives.

What is Global South?

- The Global South encompasses countries, primarily in Africa, Asia, and Latin America that are often characterized as “developing” or “less developed.”
- These nations typically face greater economic challenges, such as lower income levels, higher inequality, and reduced life expectancy compared to the wealthier “Global North,” which includes regions like North America and Europe.
- The term “Global South” was first coined in 1969 by activist Carl Oglesby, who highlighted historical power imbalances between the North and South, notably during conflicts like the Vietnam War.
- Later, Brandt report was published in 1983 by a commission chaired by former German chancellor Willy Brandt. The report identified the north as those countries that are above the 30° northern latitude. The South is geographical convenience based on the fact that most of the poor world lies South of 30° northern latitude, except Australia and New Zealand.
- Today, the term also reflects the socio-economic and geopolitical divides between these regions, emphasizing the need for equitable global development and cooperation.



Challenges faced by Global South Countries

- **Macroeconomic Vulnerabilities:** These countries struggle with high public debt, especially to private creditors, leading to financial instability and higher borrowing costs.
- **Structural Weaknesses:** Weak institutions, poor governance, and a reliance on volatile commodity markets limit their economic resilience and ability to diversify.
- **Geopolitical Risks:** The transition to clean energy and global geopolitical shifts create both opportunities and challenges, particularly in maintaining economic stability.
- **Developmental Challenges:** Persistent poverty, inequality, and insufficient infrastructure hinder sustainable development and integration into the global economy.
- **Environmental and Social Pressures:** These countries face significant environmental degradation and social inequality, exacerbated by climate change and resource dependency.

India: Voice of Global South



Common Development Struggles

India's development experiences align with the challenges faced by other Global South nations, fostering a collaborative approach to issues like poverty, hunger, and access to education and healthcare.



Rising Economic Influence

As an economic powerhouse, India advocates for fair trade practices and promotes South-South cooperation, enabling mutual benefits among developing nations.



Democratic Leadership

India's strong democratic values and non-aligned stance position it as a neutral mediator in global affairs, allowing it to bridge divides and build consensus on critical international issues.



Technological Innovation

As a leader in technology and innovation, India shares expertise with other developing nations, helping them leapfrog developmental challenges through digital transformation and technological solutions.



Cultural and Historical Ties

India shares deep cultural and historical connections with many Global South nations, enhancing diplomatic relations and cooperation on global platforms.

Conclusion

With the participation of countries representing over 60% of the world's population, the Summit reinforced the centrality of the Global South in pursuit of a future that is inclusive for all. While calling global attention to the urgent interventions required for the achievement of SDGs by 2030, Leaders and Ministers deliberated on ways to strengthen development and economic cooperation among the countries of the Global South, and to meet socio-economic challenges beyond 2030.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which country hosted the 3rd Global South Summit?
- (a) India (b) Brazil
(c) South Africa (d) Indonesia

Answer: a

Descriptive Question

- Q. Discuss the key highlights of the recent Global South Summit. Also, examine the role of India as voice of global south. [15 marks] [250 words]

UNITED NATION SECURITY COUNCIL

Why in News: India on the behalf of G4 nations (India, Brazil, Germany & Japan) said that the Council is “ill-equipped”

to address the international challenges as there is a lack of representation.

Key Details of the Statement

- In the light of recent geopolitical events UNSC failed to deliver its primary responsibility to safeguard international peace and security.
- The primary reason for the under-performance of the critical U.N. Security Council remains the non-representation of Africa, Latin America and the Caribbean, and the under-representation of Asia Pacific in the permanent category.
- India advocated for group's model of UNSC reforms which proposed that the Security Council membership increase from the current 15 to 25-26 by adding six permanent and four or five non-permanent members.
- Among the six new permanent members, two each are proposed to be from African States and Asia Pacific states, one from Latin American and Caribbean states, and one from West European and Other States.

Need for the Reforms in UNSC

- **Under Representation:** The UNSC's current structure does not adequately represent the global population or the geopolitical realities of today.
 - The Council is dominated by the five permanent members (P5): the United States, Russia, China, the United Kingdom, and France, which reflects the power dynamics of the post-World War II era, not the modern world.
 - For example countries like India, Brazil, and Japan, which are major global players, lack permanent representation, leading to a lack of diversity in decision-making.
- **Obsolete Structure:** The structure of the UNSC, particularly the veto power held by the P5, is seen as outdated. This power allows any of the permanent members to block resolutions, regardless of the majority opinion, which can paralyze the Council's ability to act on critical global issues.
 - For example the Syrian Civil War has seen numerous proposed resolutions blocked by Russia and China, using their veto power.
- **Failure of Responsibility to Establish Peace:** The UNSC is tasked with maintaining international peace and security, but it has often failed to fulfill this responsibility effectively. The Council's inability to act decisively in some of the world's most severe conflicts has raised questions about its efficacy.
 - For example the ongoing conflict in Yemen has resulted in one of the world's worst humanitarian crises, yet the UNSC has struggled to take meaningful action to resolve the conflict.
- **Vested Interest of UNSC Members:** The permanent members of the UNSC often prioritize their national

interests over global security, leading to biased decisions and undermining the Council's credibility.

- For example during the Iraq War in 2003, the U.S. pursued military action despite widespread opposition and the lack of a clear UNSC mandate.
- **Changing Global Dynamics:** Emerging powers, shifting alliances, and new security challenges require a more dynamic and representative UNSC to address contemporary issues effectively.
 - For example, the emergence of new security threats such as cyber warfare and climate change are examples of how global dynamics have evolved. The current UNSC structure struggles to address these modern challenges adequately, indicating the need for reform.

Challenges in UNSC Reforms

- To reform the UNSC, a proposal must come from the UNGA, which itself divided on the issue. Among the 193 countries, there are five negotiating groups and they are neutralising each other.
- Rigid Structure of the UN Charter also another obstacle as any amendment requires two third majority of the overall membership.
- Veto countries are reluctant to reform UNSC as it will take away their privileges being a permanent member of a powerful UNSC.
- Many nations wish to reform the UNSC, but in their hearts, they really want the changes to be made so they can pursue their own interests rather than the interests of the world.
- Continue Geo political conflicts hampering the UNSC reforms as it diverts the attention. For example, Israel Gaza conflict, Russia-Ukraine conflict etc.

About UNSC

- The United Nations was established by the United Nations Charter signed on June 26, 1945 in San Francisco. The United Nations Charter established six main organs of the United Nations, including the Security Council. It gives primary responsibility for maintaining international peace and security to the Security Council, which may meet whenever peace is threatened.
- The UNSC has 15 members, including five permanent members (China, France, Russia, the United Kingdom and the United States) with veto rights. The UNSC's working methods include procedural votes, the veto, Arria-formula meetings, and visiting missions.
- The ten non-permanent members of the Security Council are elected for two years on a regional basis. Five seats are allocated to African and Asian states, two seats to Latin American and Caribbean states, one seat to Eastern European states and two seats to Western European and other states.
- According to the Charter, the United Nations has four purposes:

- to maintain international peace and security;
- to develop friendly relations among nations;
- to cooperate in solving international problems and in promoting respect for human rights;
- and to be a centre for harmonizing the actions of nations.

Conclusion

Reforming the UNSC to include more South countries is essential for ensuring fairer representation and effective decision-making. This change would better reflect today's global dynamics and enhance the Council's legitimacy and ability to address contemporary security challenges.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is NOT a reason for the need to reform the United Nations Security Council (UNSC)?
- Under-representation of Africa, Latin America, and the Caribbean
 - Obsolete structure and veto power of permanent members
 - Excessive representation of emerging powers
 - Failure to address contemporary security challenges effectively

Answer: c

Descriptive Question

- Q. Discuss the key reasons behind the call for reforming the United Nations Security Council (UNSC) and evaluate the challenges associated with implementing these reforms. [15 marks] [250 words]

INDIA-MALAYSIA RELATIONS

Why in News: India and Malaysia elevated their partnership to a comprehensive strategic level during a recent visit of Malaysian Prime Ministers Anwar Ibrahim to India.

Key Details of the Visit

- Both the nation decided to upgrade the ties to a 'Comprehensive Strategic Partnership' from 2010 Strategic Partnership that had been made an 'Enhanced Strategic Partnership' in 2015.
- Reaffirming the importance of India's Comprehensive Strategic Partnership with ASEAN, Malaysia appreciated India's full support for ASEAN centrality and Malaysia's upcoming ASEAN Chairmanship in 2025.
- Both India and Malaysia exchanged MoUs on cooperation in the fields of:

- Recruitment, Employment and Repatriation of Workers; Ayurveda and other Traditional Systems of Medicines; Digital Technologies; Culture, Arts and Heritage; Tourism; Public Administration and Governance Reforms; Youth and Sports; and Financial Services between Labuan Financial Services Authority (LFSA) and International Financial Services Centres Authority, India (IFSCA).
- Both the countries agreed to work on linking India's UPI with Malaysia's PayNet.
 - Trade between India and Malaysia can now be settled in Indian Rupee INR and Malaysian Ringgits MYR.
- Both sides agreed to support and expedite the review process of ASEAN- India Trade in Goods Agreement (AITIGA) to make it more effective and trade-facilitative for businesses.
- Both sides agreed to further expand defence industry collaboration as well as defence R&D collaboration.
- The Indian government also agreed to a "one-time" special allocation of 2,00,000 MT of white rice to Malaysia, which has been calling for India to ease its curbs on the export of rice and sugar.
 - Malaysia, which is dependent on food imports from India, had requested an extra 5,00,000 metric tonnes of white rice from India in March, in addition to the 1,70,000 tonnes allocated for the year.

India Malaysia Relations

- India established diplomatic relations with the Federation of Malaya (predecessor state of Malaysia) in 1957. The two countries enjoyed a strong relationship in the 1960s as a result of the personal friendship between Prime Ministers Nehru and Tunku Abdul Rahman Putra.
- Presently, India and Malaysia have developed close political, economic and socio-cultural relations.
- Malaysia is a home to over 2.95 million large Indian diaphora and the second largest PIO community in the world after the US. There is growing engagement in all aspects of bilateral relationship.

Economic & Commercial Relation

- Bilateral trade between the two countries has been steadily growing to reach US\$20.01 billion in FY 2023-24. Malaysia has emerged as 16th largest trading partner for India while India figures among the 10 largest trading partners for Malaysia.
- Malaysia is also our 3rd largest trading partner in ASEAN.
- India's major exports items to Malaysia are mineral fuels, mineral oils; aluminium and articles thereof, meat and edible meat offal, iron and steel, copper etc
- India's major import items from Malaysia are palm oil, mineral fuels, mineral oils, electrical machinery and equipment, animal or vegetable fats and oils and their cleavage products; nuclear reactors, boilers, machinery and mechanical appliances etc.

Bilateral Investment

- Malaysia ranks as the 31st largest investor in India with FDI inflow of US\$ 3.3 billion. Besides this, investments worth US\$5 billion have been announced by various companies in the fields of renewable energy especially green hydrogen, green ammonia and also infrastructure projects.
- There are more than 150 Indian companies, including 61 Indian joint ventures and 3 Indian Public Sector Undertakings operating in Malaysia. Indian companies have invested in around 250 manufacturing projects of over US\$ 2.62 billion

Defence Cooperation

- India-Malaysia defence relations have steadily progressed, with a significant milestone being the 1993 MoU on Defence Cooperation, which forms the foundation of their bilateral defence ties.
- This MoU was amended in July 2023 during the visit of the Indian Defence Minister to Malaysia, where the first regional office of Hindustan Aeronautics Limited (HAL) was also inaugurated in Kuala Lumpur. Key highlights include:
 - The 12th edition of the Malaysia-India Defence Cooperation Meeting (MIDCOM) held on 19 September 2023 in New Delhi, co-chaired by India's Defence Secretary Girdhar Aramane and Malaysia's Deputy Secretary General (Policy) Mohd Yani bin Daud.
 - Regular high-level Staff Talks and frequent port visits by Indian Navy ships to Malaysia, fostering strong naval ties.
 - India's active participation in Malaysia's Langkawi International Maritime and Aerospace Exhibition (LIMA) and the Defence Services Asia (DSA) Exhibition.

Cultural Ties

- The Indian Cultural Centre in Kuala Lumpur, established in February 2010 under the Indian Council for Cultural Relations (ICCR), offers classes in Carnatic Vocal, Kathak dance, Yoga, and Hindi, conducted by trained teachers from India and Malaysia.
- It was renamed the Netaji Subhash Chandra Bose Indian Cultural Center (NSCBICC) by Prime Minister Narendra Modi during his visit to Malaysia in November 2015. Key activities include:
 - **Confluence:** Samagam Language Series: Launched by NSCBICC and the High Commission of India on 27 April 2024, this series promotes Indian languages spoken by the Persons of Indian Origin (PIO) community in Malaysia.
 - **9th International Yoga Day:** Celebrated at Batu Caves Complex on 21 June 2023, the event saw over 1,000 participants, including diplomats, Malaysian government officials, NGOs, and community members.
 - **Cultural Events:** The High Commission, in collaboration with Think City Penang and local Indian diaspora associations, organized "Reminiscing Rabindranath Tagore" at Universiti Sains Malaysia, Penang, on 29 November 2023. Other events throughout the year included World Sanskrit Day, Hindi Diwas, Gandhi Jayanti, Parakram Diwas, and Ambedkar Jayanti.

Conclusion

The recent upgrade of India-Malaysia ties to a 'Comprehensive Strategic Partnership' reflects a commitment to deepening bilateral cooperation across various sectors. This strategic enhancement builds on existing ties and aims to address past tensions while fostering collaboration in trade, defense, and cultural exchanges. Both nations are focused on leveraging this partnership to enhance economic growth, security, and mutual benefits in the region.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. Discuss the significance of upgrading India-Malaysia relations to a 'Comprehensive Strategic Partnership,' highlighting key areas of cooperation and recent developments. How does this new status impact bilateral and regional dynamics? [15 Marks] [250 Words]

75TH ANNIVERSARY OF THE GENEVA CONVENTIONS

Why in News: 2024 year marks the 75th anniversary of the adoption of the four Geneva Conventions of 12 August 1949.

Key Details

- **The** 75th anniversary aims to reaffirm the importance of the Geneva Conventions in preventing suffering in armed conflict and ensuring that a level of dignity is maintained.
- The 34th International Conference of the Red Cross and Red Crescent, will also take place in Geneva, from 28 to 31 October 2024.

About the Geneva Conventions

- The 1949 Geneva Conventions and their Additional Protocols form the core of International Humanitarian Law (IHL), which regulates the conduct of armed conflict and seeks to limit its effects.
- All four Geneva Conventions contain an identical Article 3, which applies to non-international armed conflicts and prohibits various acts against individuals such as people (civilians, medics, aid workers) and those who (wounded, sick and shipwrecked troops, prisoners of war) not actively participating in hostilities.
- They are now universally ratified, representing a universal acknowledgement that war needs rules to limit its devastating impact on humanity.

The First Geneva Convention

- The 10 articles of the original 1864 version of the Convention have been expanded in the First Geneva Convention of 1949 to 64 articles that protects soldiers who are hors de combat (out of the battle) which includes:
 - Wounded and sick soldiers
 - Medical personnel, facilities and equipment

- Wounded and sick civilian support personnel accompanying the armed forces
- Military chaplains
- Civilians who spontaneously take up arms to repel an invasion

The Second Geneva Convention

- The Second Geneva Convention adapts the protections of the First Geneva Convention to reflect conditions at sea.
- It protects following individuals while on board ship or at sea.
 - Armed forces members who are wounded, sick or shipwrecked
 - Hospital ships and medical personnel
 - Civilians who accompany the armed forces

The Third Geneva Convention

- The Third Geneva Convention sets out specific rules for the treatment of prisoners of war (POWs).
- The Convention's 143 articles require that POWs be treated humanely, adequately housed and receive sufficient food, clothing and medical care.
- Its provisions also establish guidelines on labor, discipline, recreation and criminal trial.
- **Note:** Prisoners of war may include the following:
 - Members of the armed forces
 - Volunteer militia, including resistance movements
 - Civilians accompanying the armed forces.

The Fourth Geneva Convention

- The 159 articles of the Fourth Geneva Convention focuses on civilians and includes detailed provisions on their treatment, status, and rights in areas of armed conflict/war. It also includes rules relating to humanitarian access.
- Moreover, under Article 146, parties to the Convention undertake to enact legislation that provides for penal sanctions for persons who commit grave breaches.

The Protocols Additional to the Geneva Conventions of 1949

- **Protocol I (102 Articles)**
 - Protocol I expands protection for the civilian population as well as military and civilian medical workers in international armed conflicts.
- **Protocol II (28 Articles)**
 - Protocol II elaborates on protections for victims caught up in high-intensity internal conflicts such as civil wars.
 - It does not apply to such internal disturbances as riots, demonstrations and isolated acts of violence.
- **Protocol III**
 - In December 2005, a third Additional Protocol to the Geneva Conventions was adopted that provides for another distinctive emblem: the red crystal.
 - The red crystal is an optional emblem, equal in status to the red cross and red crescent. The red crystal may be used in environments where another emblem could be perceived as having religious, cultural or political connotations.

Note: The principles of International Humanitarian Law (IHL) are intended to limit the effects of armed conflict while protecting civilians and combatants:

- **Distinction:** Parties must distinguish between civilians and combatants at all times. Only fighters can be directly targeted.
- **Prohibition of unnecessary suffering:** IHL prohibits the infliction of suffering, injury, or destruction that is not necessary for legitimate military purposes. This includes blinding laser weapons.
- **Prohibition of disproportionate attacks:** IHL prohibits attacks that may cause excessive civilian harm in relation to the military advantage.
- **Principle of necessity:** Parties to an armed conflict may only use the force required to achieve the legitimate purpose of the conflict.
- **Principle of proportionality:** IHL limits the potential harm to civilians.

IHL is based on customary international law and the four Geneva Conventions of 1949, and two Additional Protocols of 1977. The red cross, red crescent, and red crystal are the signs of protection under IHL.

DECONFLICTION

► **"Deconfliction"** is an arrangement by which non-combatants, including aid workers and journalists, try to ensure their safety by informing warring parties of their movements to prevent themselves becoming targets during war.

► The UN security council has promoted the deconfliction process to UN member states since 2016.

► It was instituted by the UN in 2018 to keep humanitarian workers in Yemen safe from attack by Saudi forces.

NOTE

Recently, the UN Secretary General has mentioned that 196 aid workers, including 175 from the UN, had been killed in Gaza.

Conclusion

The 1949 Conventions remain the core of international humanitarian law, or the laws of armed conflict. Despite differing political views and experiences of war, countries agreed to the Geneva Convention rules by striking a balance between military need and humanitarian ideals for the treatment of civilians, captured enemy soldiers and the dead.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. The Geneva Conventions are primarily concerned with the protection of:

- Environmental resources during warfare
- Civilian populations and prisoners of war during conflicts
- Trade and commerce between nations
- Diplomatic relations between states

Answer: b

INDIAN DIASPORA IN U.S.A.

Why in News: Recently a landmark report released by Indiaspora and Boston Consulting Group, highlighting the significant contributions of Indian Americans in shaping the US economy, culture, and society.

Indian Diaspora is a generic term used for addressing people who have migrated from the territories that are currently within the borders of the Republic of India. It constitutes NRIs (Non-resident Indians) and PIOs (Persons of Indian origins). According to a 2024 Ministry of External Affairs report, there are 35.4 million non-resident Indians (NRIs) and persons of Indian origin (PIOs) living outside of India.

Key Details of the Report

Indian Americans are making up 1.5% of the US population, contributing richly to its economy, culture, and society.

- **Economic Impact**
 - CEOs of Indian origin head 16 Fortune 500 companies. These leaders collectively employ 2.7 million Americans and generate nearly \$1 trillion in revenue.
 - Indian Diaspora have a significant presence in the startup world, co-founding 72 out of 648 U.S. unicorns operating in 2024. These companies, like Cambridge Mobile Telematics and Solugen, employ over 55,000 people and are valued at \$195 billion.
 - Indian Americans own about 60% of all U.S. hotels, and hospitality industry.
 - Indian Americans estimated to pay about 5-6% of all income taxes (approximately \$250-300B). Furthermore, their professions indirectly create 11-12 million American jobs, showcasing their broader economic influence.
- **Cultural Impact**
 - Indian Americans have significantly contributed to the cultural landscape of the United States across various domains such as festivals, cuisine, wellness, film, music, and fashion.
 - ◆ Indian festivals like Diwali and Holi are now widely celebrated in the U.S., featuring vibrant parades, music, dance, and food. Diwali is now celebrated with an official state holiday in Pennsylvania and in New York City.
 - ◆ In the culinary world, celebrated chefs like Maneet Chauhan Vikas Khanna, and Srijith Gopinathan have brought Indian flavors to mainstream American dining.
 - ◆ Deepak Chopra, who popularized Ayurvedic practices and holistic health, have become significant trends in American culture. Yoga and Ayurveda, with roots in India, are now staples in American wellness practices.
 - ◆ In literature, authors like Jhumpa Lahiri and

Abraham Verghese have had a profound impact with their explorations of the Indian-American experience.

- Half of the Indian American population lives in five large states: California, Texas, New York, New Jersey, and Illinois. It also provides insights into the community's social structure, noting that a fifth of Indian Americans live in multi-generational homes, a practice reminiscent of the joint family system in India.
- **Education:** More than three-fourths of Indian Americans have at least a bachelor's degree, and a similar percentage work in high-paying professions such as management, business, science, or the arts.
 - Around 22,000 faculty members of Indian origin are teaching at U.S. colleges and universities, making up about 2.6% of all fulltime faculty.
 - Moreover, Indian students comprise 25% of international students in the U.S. and 1.5% of the total student population, with approximately 60% enrolled in graduate studies.
- **Innovation:** Between 1975 and 2019, the share of U.S. patents with Indian origin innovators increased from around 2% to 10%. About one-third of tech employees in Silicon Valley are of Indian origin. Moreover, in 2023, scientists of Indian-origin secured about 11 per cent of all National Institutes of Health grants and contributed to 13 per cent of scientific publications.

Conclusion

Indian Americans are a powerhouse of talent, resilience, and diversity that enriches America. The community's perseverance and accomplishments illustrate their vital role in American society, driving progress and unity. Moreover, a supportive infrastructure, combined with the American values of meritocracy and equal opportunity, helps Indian Americans unleash their full potential.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. Examine the multifaceted impact of the Indian diaspora on USA socio-economic development. [15 marks] [250 words]

MIDDLE EAST CRISIS

Why in News: A recent escalation of tensions between Iran and Israel, following assassination of leaders of Hamas and Hezbollah (groups backed by Iran), has spurred the US and other regional powers to step up diplomacy to prevent an all-out war in West Asia.

Relevance of Middle East for India

- **Energy Security:** India who is world third largest crude

oil importer and consumer has to rely on Middle East countries like Saudi Arabia, Iraq, and the UAE.

- India's dependence on the Gulf for energy imports decreased following Russia's 2022 invasion of Ukraine, with New Delhi importing discounted Russian oil.
- The Gulf region fulfilled 55.3% of India's total crude oil demand in 2022–23, compared to 63.9% in 2021–22. Current situation is an opportunity for India, but India can never ignore gulf countries.
- **Trade Relation:** The Gulf Cooperation Council (GCC) is India's largest regional-bloc trading partner.
 - Trade with the GCC comprised 15.8% of India's total trade in FY2022–23, compared to 11.6% of total trade with the European Union. Iran and Israel are also important trading partner.
- **Remittance:** During 2021-22, India received foreign inward remittances of \$89,127 million which was the highest ever inward remittances received in a single year. Out of this around 26.2% is received from gulf countries.
- **Khalija Capital:** Arab Gulf, with its huge amount of capital that we can draw on for India's economic development and transformation. For example, India and the UAE are talking about joint space programs and joint defense production.
- **Champion of Moderate Islam:** India values its relationship with moderate Islamic countries in the Middle East because the region's influence directly affects the large Muslim population in South Asia.
 - Radical ideologies from the Middle East can quickly spread to South Asia, where they have a significant impact due to historical ties and ongoing issues like cross-border terrorism.
 - Therefore, India sees strong, moderate partners in the Gulf as crucial for regional stability and countering extremism.
- **Relation with Israel:** Trade between two countries has been rising significantly, from around \$200 million in 1992 (comprising primarily of diamonds), to \$10.7 billion (excluding defence) in the Financial Year 2022-23.
 - In the last five years India-Israel trade has doubled. Moreover India has tended to rely more on Israeli technology and equipment for border security and counterterrorism.
- **Regional Connectivity and Infrastructure:** India is investing in infrastructure project which are important for regional connectivities which has potential to increase India's trade with central Asia, and Europe and expand its regional influence. For example, Chabahar port in Iran, International North South Corridor and recently concluded India-Middle East-Europe Economic Corridor.

Challenges for India in the Face of the Middle East Crisis

- **Maintaining Strategic Autonomy:** It means holding an

equidistant position from all major poles of influence in the international system. This is most challenging especially when Middle-East region is the world's most polarised and bifurcated region that is split between multiple regional powers and non-regional powers, including the United States, Russia, China, and Europe.

- **Navigating Domestic and Ideological Tensions:** The Nationalist ideology of India's ruling party can strain relations with Muslim-majority Middle Eastern countries.
- **Managing Regional Instability:** The Middle East is one of the world's most unstable regions, with conflicts like those in Syria, Yemen, and Gaza. India faces the challenge of these instabilities spilling over into South Asia, especially given its contentious relationship with Pakistan, potentially drawing India into regional conflicts or affecting its own internal security.
- **Effectiveness of New Diplomatic Initiatives:** India's recent initiatives, such as the I2U2 grouping (India, Israel, the United States, and the UAE) and the India-Middle East-Europe Economic Corridor, are still in their infancy.
- **Energy Security and Economic Dependency:** Any disruption in the Middle East region could have serious economic repercussions for India's energy security.
- **De-hyphenation from Pakistan:** While India has successfully de-hyphenated its Middle East policy from its relations with Pakistan, maintaining this de-hyphenation will be a challenge amid the chronic risk of Middle Eastern instabilities spilling over into South Asia.

Conclusion

India's strategy in the Middle East reflects a shift towards a more assertive and holistic foreign policy, but it must navigate these substantial challenges to sustain its influence and achieve its strategic objectives.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- | | |
|-----------------|---------|
| 1. Iraq | 2. Iran |
| 3. Saudi Arabia | 4. UAE |

How many of the above are littoral countries of the Persian Gulf?

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

Answer: c

Descriptive Question

Q. Discuss the strategic importance of the Middle East for India, focusing on its energy security, trade relations,

and regional connectivity initiatives. Also, analyze the challenges India faces in maintaining strategic autonomy and managing domestic ideological tensions amidst the ongoing Middle East crisis. [15 marks] [250 words]

INDIA - POLAND STRATEGIC PARTNERSHIP

Why in News: Prime Minister of India recently visited Poland to elevate their bilateral relations to strategic partnership.

Key Details of the Visit

- After a gap of 45 years, India's Prime Minister has recently visiting Poland to marks the 70th anniversary of the establishment of diplomatic relations.
- Both the countries have agreed to implement the Strategic Partnership and have signed a five-year Joint Action Plan for 2024-2028 to expand cooperation in defence and security, trade and investment and digitalisation.
 - The total value of bilateral trade increased from \$1.95 billion to \$5.72 billion from 2013-2023, with India's exports accounting for a majority.
 - Acknowledging the critical role of digitalization in economic and social development, both sides agreed to bolster bilateral cooperation in this field, including in cybersecurity, to enhance stability and trust between the two countries.
 - Both sides recognized the need to strengthen and deepen cooperation in the defence sector. To this end, they agreed to fully utilize existing bilateral mechanisms, including the Joint Working Group for Defence Cooperation.
- Both the countries have also discussed to expand cooperation:
 - in the areas of culture, education, science, research, and health,
 - in climate action initiatives,
 - to a free, open and rules-based Indo-Pacific,
 - on the early adoption of the Comprehensive Convention on International Terrorism (CCIT),
 - role of tourism in driving economic and business opportunities.
- Prime Minister of India also paid homage at the 'Good Maharaja Square' in Warsaw, Poland, commemorating Maharaja Digvijaysinhji.
 - During World War II, the Maharaja sheltered 640 Polish refugees in Jamnagar, Gujarat. The Maharaja's humanitarian efforts have earned him immense respect in Poland, with schools and a square named after him. For his efforts, the Maharaja was awarded Poland's highest honor, the President's medal.

Future Prospect - India and Poland Defence Cooperation

- It can be divided into two parts—defence industry cooperation and joint exercises. Both together complement the defence and security domain.
- In 2023, the Ministry of Defence's decision to open a new Defence Wing in Poland with a Brigadier rank officer to oversee various aspects of cooperation.
 - The first leg of this defence industry cooperation is modernising India's T-72 tanks.
- WB Group, the largest private defence company in Poland has been active in India through WB India is known for their state-of-the-art solutions in advanced military systems and electronics, and engagement with a private Indian company for drone platforms and other cybersecurity systems.
- In 2023, India issued a new RFI (request for information) for Armoured Recovery Vehicles, with Poland's Bumar being a key contender due to its experience with India.
- India and Poland could co-produce the Borsuk, an amphibious infantry fighting vehicle, to help India replace its aging Soviet-era BMPs.
- Since Poland is a key destination for India's defense exports, therefore India should explore involvement in Warsaw's military modernization. With South Korea already engaged in deals, the India-Poland Action Plan could establish Joint Working Groups to explore similar opportunities with India and enhance collaboration.
- Joint exercises are key to building trust and interoperability. With strategic partnerships and increased exercises across Europe, India is positioning itself for a more prominent role on the continent. Currently India-Poland have no joint exercise.

What is Strategic Partnership?

- 'Strategic partnership' is a comparatively new concept in IR. These are less formal than alliances.
- The essence of the strategic partnership lies in cooperation between the states that share common objectives. Though security issues are central to strategic partnerships, the ambit of such partnerships can be quite broad, including trade, economy, technology, and so on.
- Since it offers immense scope for interaction in multiple areas, the strategic partnership became one of the most desired modes of states' engagement in contemporary global politics.
 - **For example**, the Quad or Quadrilateral Security Dialogue comprised of Australia, India, Japan and the United States is not a formal alliance. Rather, it is a loose-knit strategic grouping of like-minded partners desiring a broader common purpose.

Conclusion

The India-Poland relationship has progressed significantly and is poised to surpass the goals in their action plan. With shared strategic interests and economic opportunities, both nations are deepening ties, especially as Europe focuses on the Indo-Pacific and India engages more in stabilizing the European theater.

EXPECTED QUESTIONS FOR UPSC CSE

Premils MCQ

- Q. Which of the following countries does NOT share a border with Poland?
- (a) Germany (b) Ukraine
(c) Austria (d) Belarus

Answer: c

Descriptive Question

- Q. Evaluate the significance of the India-Poland strategic partnership and its impact on defense and economic cooperation. [10 marks] [150 words]

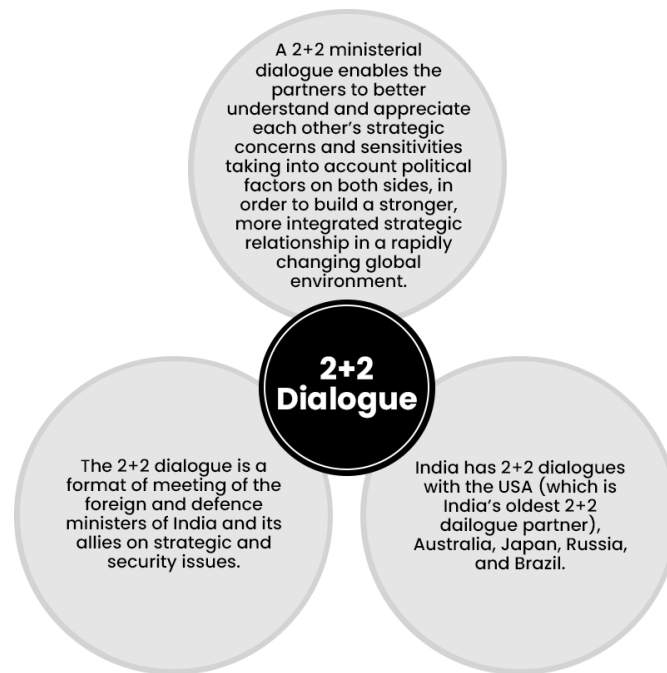
'2+2' DIALOGUE BETWEEN INDIA AND JAPAN

Why in News: Recently, India and Japan hold '2+2' dialogue and reaffirmed their commitment to maintaining and strengthening rules-based international order founded on the principles of the UN Charter.

Key Highlights

- **Indo-Pacific Strategy:** The Ministers emphasized their commitment to a free, open, inclusive, and resilient Indo-Pacific, based on the rule of law and free from coercion.
 - They reaffirmed support for ASEAN's unity and centrality, and endorsed the "ASEAN Outlook on the Indo-Pacific (AOIP)" which promotes principles like the rule of law, openness, freedom, transparency, and inclusiveness.
- **Regional and Global Security Issues:** The Ministers discussed mutual regional and global concerns, particularly in the Indo-Pacific and Ukraine.
- **Japan's Defence Capabilities:** Japan expressed its resolve to explore all options for national defense, including "counterstrike capabilities," and committed to significantly reinforcing its defense capabilities and increasing its budget within the next five years.
- **Bilateral Security and Defence Cooperation:** They welcomed deepened cooperation through various dialogues (Disarmament, Maritime Affairs, Space, and Cyber) and expressed the desire for further dialogues, including on Security Council reform and economic security.
- **Military Exercises and Defence Exchanges:** Japan's participation in the multilateral exercise MILAN was noted, along with the operationalization of a bilateral agreement on the provision of supplies and services.
 - The Ministers committed to continue bilateral and multilateral exercises, including "Dharma Guardian," JIMEX, and "Malabar."

- **Further Cooperation Initiatives:** They committed to deepening cooperation on Humanitarian Assistance/ Disaster Relief (HA/DR) and response to infectious diseases and pandemics.
 - The potential for expanding bilateral cooperation in defence equipment and technology was acknowledged, with ongoing collaboration in areas such as Unmanned Ground Vehicles (UGV) and Robotics.



Strengthening India-Japan Strategic Partnership in the Indo-Pacific

The Indo-Pacific region has emerged as a crucial area of interest for both India and Japan, driven by their shared strategic, economic, and security concerns. Their collaboration is guided by mutual goals of ensuring a stable, free, and open Indo-Pacific, which is essential for global commerce and regional security. This strategic partnership has several dimensions:

- **Shared Vision for the Indo-Pacific:** Japan's vision of a Free and Open Indo-Pacific aligns with India's Act East Policy, emphasizing freedom of navigation, adherence to international laws, and open maritime commons.
 - Both nations seek to counterbalance China's growing influence in the region and ensure that no single power dominates the Indo-Pacific, maintaining a multipolar balance.
- **Economic and Infrastructure Cooperation:** India and Japan collaborate on infrastructure projects across the Indo-Pacific, such as the Asia-Africa Growth Corridor, which aims to enhance connectivity between Asia and Africa, promoting sustainable development.
 - Joint ventures in areas like digital infrastructure, energy, and smart city initiatives help drive economic growth and stability in the region.
- **Defense and Security Cooperation:** India and Japan conduct

joint naval exercises, such as the Malabar Exercise, to strengthen maritime security, enhance interoperability, and ensure safe sea lanes in the Indo-Pacific.

- Regular 2+2 dialogue mechanisms between their defense and foreign ministers allow for coordinated responses to regional security challenges, particularly in maritime domains.
- **Countering Regional Threats:** Both countries share concerns over China's assertiveness in the South China Sea and East China Sea, and work together to promote a rules-based order in these disputed waters.
- Quad Cooperation: India and Japan, along with the United States and Australia, form the Quadrilateral Security Dialogue (Quad), a strategic forum aimed at countering threats and maintaining regional stability.

Conclusion

The India-Japan partnership in the Indo-Pacific is crucial for ensuring a balanced power structure, promoting economic growth, and enhancing regional security. By working together on shared goals, these two nations can play a pivotal role in shaping the future of the Indo-Pacific, ensuring it remains a region of peace, prosperity, and stability.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. Evaluate the significance of the recent India-Japan '2+2' dialogue in strengthening their strategic partnership. How does this dialogue enhance cooperation in the Indo-Pacific region, and what are the key areas of focus for their bilateral relationship? [15 marks] [250 words]

INDIA - VIETNAM RELATIONS

Why in News: Vietnam's Prime Minister Pham Minh Chinh recently visited India at the invitation of Prime Minister of India.

Key Details

- A joint statement was issued to enhance the comprehensive strategic partnership and a plan of action for the implementation for the next four years, 2024-28.
- The action plan aimed at developing higher political-strategic trust, deeper defence-security cooperation, more substantial and effective economic-trade-investment collaboration, broader cooperation in science-technology and closer cultural-tourism and people-to-people exchange.
- Besides, the two countries signed nine cooperative documents covering a wide range of subjects such as healthcare, justice, diplomacy, human resources training, agricultural science, broadcasting, tourism, culture, and agriculture.
- Businesses of the two sides also inked ten deals in infrastructure, logistics, aviation, tourism, culture, and pharmaceuticals.

- India aims to strengthen Vietnam's defense capabilities. Both countries agreed to enhance their defense and security cooperation, focusing on maritime security, cybersecurity, and counter-terrorism. They also plan to work together in defense industry and technology transfer. A \$300 million credit package for maritime security was signed to support these efforts.
- Both leaders virtually inaugurated the Army Software Park at Telecommunications University in Nha Trang, Vietnam.

India - Vietnam Relations

Economic:

Bilateral Trade

- Bilateral trade between the two has gone up from a mere \$200 million in 2000 to about \$14.82 billion, in value terms, during 2023-24. India's exports to Vietnam were at \$5.47 billion, while imports stood at \$9.35 billion. (Vietnam trade with China \$171.2 bn & with USA \$ 125 bn in 2023)
- India's top exports to Vietnam include buffalo meat, marine products, iron and steel, rice, aluminium products, auto components, cereals, cotton yarn and pharmaceutical products.
- Top imports from Vietnam include electronic components, telecom instruments, consumer electronics, iron & steel, computer hardware, copper products, electronic instruments, spices and rubber.

Investment:

- Indian investments in Vietnam are currently estimated at \$2 billion including investments routed through third countries. As such, India has 392 valid projects with a total invested capital of \$ 1,119 million.
- Vietnam's presence in India is even more limited. As of 2022, Vietnam has six investment projects in India with an estimated investment of \$ 28.55 million, primarily in pharmaceuticals, information technology, chemicals and building materials.

Strategic Partnership

- India and Vietnam had elevated their relationship to a "Comprehensive Strategic Partnership" in 2016.
- Vietnam is a key partner in its Act East Policy as well as its wider Indo-Pacific vision.
- The joint statement highlighted that the United Nations Convention on the Law of the Sea (UNCLOS) should be followed as the foundation for determining maritime rights and interests.

Defense

- As part of India's defense support to Vietnam, 12 high-speed guard boats are being built for the Vietnam Border Guard Command. Five of these boats are being constructed by the Indian company Larsen & Toubro in India, while the other seven are being built at a shipyard in Vietnam. The first boat was delivered to Vietnam in December 2020.
- Other defense engagements include joint military exercises VIMBAX which was first started in 2018 and recently held in december 2023.
- In June 2023, New Delhi handed the domestically built missile

corvette INS Kirpan to Vietnam's navy, the first time that India had gifted a fully operational corvette to another country.

- The two nations are in talks for Vietnam's possible purchase of the Indo-Russian Brahmos supersonic cruise missile. There are also reports that Hanoi is interested in India's Akash surface-to-air missile system.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. The recent visit of Vietnam's Prime Minister to India underscores the evolving Comprehensive Strategic Partnership between the two nations. Discuss the significance of India-Vietnam relations in the context of economic cooperation, defense collaboration, and cultural ties. How do these aspects align with India's Act East Policy and Indo-Pacific strategy? [15 marks] [250 words]

ASEAN-INDIA TRADE IN GOODS AGREEMENT

Why in News: The 5th AITIGA Joint Committee and related meetings for review of ASEAN-India Trade in Goods Agreement (AITIGA) were recently held in ASEAN Secretariat, Jakarta.

Key Details

- The 5th AITIGA joint meeting was co-chaired by Additional Secretary, Department of Commerce, India and Deputy Secretary General (Trade), Ministry of Investment, Trade & Industry, Malaysia.
 - The Indian lead of delegation also held bilateral meetings with his counterparts from Malaysia, Singapore, Indonesia and Vietnam on the sidelines of 5th AITIGA JC meeting to develop a common understanding on the issues being discussed in the AITIGA review.
- The ASEAN-India Trade in Goods Agreement (AITIGA) entered into force on 1 January 2010.
- The signing of the AITIGA on 13 August 2009 in Bangkok paved the way for the creation of one of the world's largest free trade areas with more than 1.9 billion people and a combined GDP of US\$ 5.36 trillion.
 - This agreement excludes trade in services; it only covers physical goods and products. India signed separate the ASEAN-India Trade in Services Agreement on 13 November 2014 and had entered into force on 1 July 2015 for trade in services.
- ASEAN is one of the major trade partners of India with a share of 11% in India's global trade. The bilateral trade stood at USD 122.67 Bn during 2023-24.

Imbalance in market access

- **India's Extensive Tariff Reductions Compared to ASEAN's Limited Offers:** India removed tariffs on 75% of its tariff lines,

with reductions impacting over 88.7% of these lines. While similar offers were made by other major ASEAN countries, Indonesia, the largest economy in ASEAN, eliminated tariffs on only 50.4% of its lines, with tariff reductions affecting just 67.6%.

- **Comparative Tariff Reductions:** The larger ASEAN economies generally provided less tariff elimination for industrial products compared to India's offerings. This was especially evident in sectors where India has strong capabilities, such as base metals and their products, machinery, vehicles and transport equipment, and miscellaneous manufactured goods.
- **India's Market Disadvantage Under AITIGA Compared to China-ASEAN FTA:** The dominance of Chinese products in both Indian and ASEAN markets limited the mutual benefits each could gain under AITIGA. However, the ASEAN-China FTA provided China with even greater market access in ASEAN than India had under AITIGA, putting India at a relative disadvantage. In contrast, China received fewer concessions in India, limited mainly to those under the Asia Pacific Trade Agreement (APTA).
- **The Impact of "China Plus One" Strategy:** This strategy, increasingly adopted by various multinational corporations, including some Chinese firms, has led to growing investments in ASEAN countries. This approach is contributing to the expansion of manufacturing and export capacities within the ASEAN region.
- **Trade imbalance:** In 2008-09, India had trade deficits with only five ASEAN countries. This has since increased to seven, with the addition of Singapore and Vietnam from 2018-19 onwards. India, therefore, has a trade surplus position now with only Cambodia, Laos and The Philippines.

About ASEAN

- It is an intergovernmental organization of ten Southeast Asian countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.
- The bloc's biggest success in recent years has been promoting economic integration among members. It also helped negotiate the RCEP, the world's largest free trade agreement.
- ASEAN has struggled to form a cohesive response to Myanmar's military takeover and China's claims in the South China Sea, which overlap with those of several ASEAN members.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements is true regarding the ASEAN-India Trade in Goods Agreement (AITIGA)?
- (a) AITIGA covers both trade in goods and services.
 - (b) The ASEAN-India Trade in Goods Agreement (AITIGA) entered into force on 1 January 2010.
 - (c) China received more concessions under AITIGA than under the ASEAN-China FTA.
 - (d) India's trade surplus with ASEAN countries has remained stable since the agreement.

Answer: b

Descriptive Question

Q. Discuss the key outcomes and challenges associated with the ASEAN-India Trade in Goods Agreement (AITIGA). How can India address the trade imbalances under AITIGA? [15 marks] [250 words]

INDIA - MALDIVES RELATIONS

Why in News: Recently, the India's external affairs minister visited Maldives to elevate their friendship and strong alliance to new heights.

Key Details

- India's external affairs minister's official visit to the Maldives was the first high-level trip after President Mohamed Muizzu (seen as a pro-China leader) assumed office in November 2023. India's relationship with the Maldives soon came under severe strain due to the actions of the new government.
- India's external affairs minister highlighted the importance of Maldives as a key partners in the Neighbourhood First' policy and India's Vision SAGAR' i.e. Security and Growth for All in the Region.
- The India's external affairs minister visit has reaffirmed the continued commitment of both countries to strengthening their multi-dimensional bilateral relationship and deepening their close people-to-people ties.

India-Maldives Relation

- Historical Bonhomie:** In 1988, India helped Maldives thwart coup bid backed by Lankan militants which led to the foundation of deep trust between two countries and saving the democracy.
- Security & Defence Cooperation:** Since 1988, defence and security has been a major area of cooperation between India and Maldives. India has adopted a very flexible and accommodating approach in meeting Maldivian requirements of defence training and equipment. A comprehensive Action Plan for Defence was also signed in April 2016 to consolidate defence partnership.
 - India-Maldives Defence Cooperation also extends to the areas of Joint Exercises, Maritime Domain Awareness, gifting of hardware, infrastructure development, etc. Key projects in the defence sector includes Composite Training Centre (CTC) for MNDF, Coastal Radar System (CRS), construction of new Ministry of Defence Headquarters and construction of "Ektha" MNDF harbour.
- Bilateral Economic and Trade Relations:** India emerged as Maldives' 2nd largest trade partner in 2022 & the largest in 2023. Indian imports from the Maldives primarily comprise scrap metals while Indian exports to the Maldives include a variety of engineering and industrial products like drugs and pharmaceuticals, radar apparatus, rock boulders, aggregates, cement and agriculture produce like rice, spices, fruits, vegetables and poultry produce etc.

➤ India and Maldives signed a trade agreement in 1981, which provides for export of essential commodities. Growing from modest beginnings, India-Maldives bilateral trade crossed the USD 300 million mark for the first time in 2021 which further crossed USD 500 million mark in 2022.

- Capacity Building/Training:** India provides the largest number of training opportunities for Maldivian National Defence Force (MNDF), meeting around 70% of their defence training requirements. India has trained over 1500 MNDF trainees over the past 10 years
- Disaster Management:** MNDF regularly participates in Humanitarian Assistance & Disaster Relief, Search & Rescue (SAR), Pollution Control, other exercises organised by India. India previously provided pollution dispersant to MNDF Coast Guard in 2016. India is also undertaking customised trainings for MNDF Fire and Rescue Service in India.
- Development Cooperation:** The major completed and ongoing development assistance projects executed by India are: Indira Gandhi Memorial Hospital; National College for Police and Law Enforcement; India-Maldives Faculty of Hospitality & Tourism Studies; The Maldives Polytechnic etc.
- Tourism:** The Maldivian economy is heavily dependent on its tourism sector, which is the major source of foreign exchange earnings and government revenue. In terms of direct employment, tourism accounts for more than 1/3rd of job opportunities for Maldivians.
 - In 2018, India was the 5th largest source of tourist arrivals in Maldives with around 6.1 % (over 90,474) market share. However, in 2019, India reached the 2nd spot with almost double the number of arrivals compared to the 2018.
 - From 2021 to 2023, India continued as the top tourists market with over 2.91 lakh, 2.41 lakh & 2.09 lakh Indian tourist arrivals and a 23%, 14.4% & 11.1 % market share, respectively.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. 'Ektha harbour', which was seen in the news, is located in?
- (a) Indonesia (b) Maldives
(c) Malaysia (d) Sri Lanka

Answer: b

Descriptive Question

- Q. "What are the key areas of cooperation between India and the Maldives? How do these areas benefit both countries?" [10 marks] [150 words]

INDIA-AUSTRALIA MARITIME SECURITY DIALOGUE

Why in News: Recently the 6th India-Australia Maritime Security Dialogue concluded in Canberra.

Key Details

- The two countries discussed how to maintain a safe and secure maritime environment that supports inclusive growth and global well-being.
- They exchanged views on various topics of mutual interest:
 - Maritime security environment in the Indo-Pacific region
 - Maritime domain awareness
 - Humanitarian Assistance and Disaster Relief (HADR) coordination
 - Regional and multilateral engagements
 - Sustainable use of marine resources
- This included cooperation in Search and Rescue (SAR), pollution response, blue economy and Port State control. They discussed ways and means of further strengthening their bilateral cooperation in these areas.
- They also conferred on the way ahead for collaboration in the maritime ecology pillar of the Indo-Pacific Ocean Initiative (IPOI).

Maritime Security Challenges in Front of India and Australia

- **China's Hegemony:** China's growing influence in Indo-Pacific region is major challenge for many Indo-Pacific countries including Australia. It poses significant security challenges, over islands, reefs, and sea areas, leading to increased tensions and the possibility of military conflict.
- **Military Modernization and Power Projection:** The military modernization efforts of various countries in the Indo-Pacific region have raised concerns about power relations and the potential for an arms race.
- **Nuclear Proliferation:** The presence of nuclear powers like China, North Korea in the Indo-Pacific region raises concerns about nuclear proliferation and the potential for an arms race.
 - Developing and possessing nuclear weapons can impact the region's security, creating a fragile balance of power.
 - Key challenges in the Indo-Pacific include managing deterrence and preventing the spread of nuclear weapons.
- **Maritime terrorism:** Any act of maritime terrorism may threaten Australia's national interests. Terrorism is a criminal activity intended to coerce or intimidate governments or public to meet political, religious, or ideological objectives.
- **Piracy & Robbery at Sea:** Incidents classed as piracy and robbery at sea include profit-motivated illegal activities, in either an organised or an opportunistic manner, undertaken against: vessels infrastructure, or individuals at sea.

- **Unconventional security threats:** These includes illegal fishing, natural disasters, marine pollution, human and drug trafficking, and the impact of climate change.
- **China's String of Pearls:** China is circling India from the all side. For example, China is developing deep water port in Kyaukphyu in Myanmar under Belt and Road Initiative, Hambantota in Sri Lanka, Gawdar port in Pakistan, China's naval base in Djibouti.

Indo-Pacific Ocean Initiative (IPOI)

- The initiative will drive deeper engagement between India and regional partners to collaboratively safeguard the oceans; enhance maritime security; preserve marine resources; build capacity and fairly share resources; reduce disaster risk; enhance science, technology and academic cooperation; and promote free, fair and mutually beneficial trade and maritime transport.
- Australia has undertaken to be a lead partner on the maritime ecology pillar and is looking to drive scientific collaboration and share best practice across the Indo-Pacific on reducing marine pollution, with a focus on plastic waste.
- The Indo-Pacific Oceans Initiative (IPOI), announced by Prime Minister Narendra Modi at the 14th East Asia Summit on 4 November 2019 at Bangkok, has seven pillars:
 - Maritime Ecology
 - Maritime Security
 - Marine Resources
 - Capacity Building and Resource Sharing
 - Disaster Risk Reduction and Management
 - Science, Technology and Academic Cooperation
 - Trade, Connectivity and Maritime Transport

Way Forward

Recognising that India and Australia have a shared interest in promoting maritime security and safety, they will deepen navy-to-navy cooperation and strengthen maritime domain awareness in the Indo-Pacific region through enhanced exchange of information. Joint exercises and defense partnerships can further strengthen their ability to respond to emergencies and protect their maritime interests.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Recently, the 6th India-Australia Maritime Security Dialogue was held in ?

- (a) Melbourne (b) Chennai
(c) Canberra (d) Mumbai

Answer: c

Descriptive Question

Q. Discuss the key challenges faced by India and Australia in their maritime security cooperation under the Maritime Security Dialogue.? Propose potential solutions to overcome these issues. [15 marks]
[250 words]

UNITED NATIONS FRAMEWORK CONVENTION ON INTERNATIONAL TAX COOPERATION

Why in News: Recently, the United Nation Ad Hoc Committee voted to approve Terms of Reference (ToR) for the development of a United Nations Framework Convention on International Tax Cooperation.

Key Details

- The ToR were supported by 110 UN member jurisdictions, with 44 abstentions, including the European Union (EU) and its Member States, and eight votes against, including the United States (US).
- The ToR provide that the Framework Convention should encompass structural elements such as a clear statement of objectives, principles and commitments to achieving the objectives.
- In addition, the ToR discuss development of protocols for specific tax issues.
- The ToR are set to be presented to the UN General Assembly for a vote during its 79th session beginning in September 2024.
- The draft provides for the Framework Convention to be negotiated during 2025–2027, after which it should be available for signature and ratification.

Why does a new convention matter?

➤ A UN tax convention represents a major shift in how international taxation is approached, with the potential to significantly impact the architecture of global financial systems and how tax dollars are used for the public good.

What will a UN tax treaty cover?

➤ A UN framework convention should, among other things, establish a system that is inclusive, fair, transparent, efficient, equitable and effective for sustainable development in three dimensions: economic, social and environmental.

➤ Two legally binding protocols should also be developed simultaneously with the framework convention, including one to address taxation of income derived from the provision of cross-border services in an increasingly digitalised and globalised economy.

How can a UN Tax Treaty Help the Global South?

➤ An inclusive tax cooperation system can properly address the challenges of strengthening domestic resources to enable all countries to fund and promote policies aligned with the 17 Sustainable Development Goals (SDGs).

➤ A global tax convention aims to ensure that large multinationals pay their fair share of taxes, regardless of where they operate, and is expected to generate significant additional tax revenues for many countries, especially those in the Global South.

Is there consensus on a global tax treaty?

➤ No, developing countries largely support it, but some industrialised nations have expressed reservations.

➤ A total of 110 Member States voted in favour of the terms of reference for a new treaty, with 44 abstentions and eight nations voting against it (Australia, Canada, Israel, Japan, New Zealand, Republic of Korea, United Kingdom and the United States).

What are the next steps?

➤ The Ad Hoc Committee's terms of reference will be sent to the General Assembly, which will hold a vote during the world body's 79th session that begins in September.

➤ If adopted, the Assembly would have the convention and two protocols drafted by a Member State-led negotiating committee, which would meet annually for the next three years.

➤ The negotiating committee would then submit a final text to the General Assembly for its consideration in the first quarter of the 82nd session, according to the terms of reference.

➤ This means that all 193 UN Member States could vote on a finalised UN global tax treaty in 2027.

➤ The UN treaty would need to be adopted by the General Assembly, after which it would be opened for signature and ratification to all Member States.

Conclusion

Several Global states placed emphasis on the intersection between tax policy and climate change, as well as the human rights obligation to mobilize all available resources to realize economic and social rights. With this in mind, the upcoming steps in the UN Tax Convention process will be crucial in determining the actual changes that will result from this re-writing of the global tax rules.

INDO-PACIFIC ECONOMIC FRAMEWORK FOR PROSPERITY

Why in News: Recently, India elected as Vice-Chair of the Supply Chain Council under Indo-Pacific Economic Framework for Prosperity (IPEF) Agreement relating to Supply Chain Resilience.

Key Details

In pursuant to the Supply Chain Agreement, the IPEF partners established three supply chain bodies –

- **Supply Chain Council** to pursue targeted, action-oriented work to strengthen the supply chains for those sectors and goods most critical to national security, public health, and economic well-being;
- **Crisis Response Network** to provide a forum for a collective emergency response to exigent or imminent disruptions; and
- **Labor Rights Advisory Board** that brings together workers, employers, and governments at the same table to strengthen labor rights and workforce development across regional supply chains.

Each of the three supply chain bodies elected a Chair and Vice Chair, who will serve for a term of two years. The elected chairs and vice chairs are:

- Supply Chain Council: USA (Chair) and India (Vice Chair)
- Crisis Response Network: Republic of Korea (Chair) and Japan (Vice Chair)
- Labor Rights Advisory Board: USA (Chair) and Fiji (Vice Chair)

About Indo-Pacific Economic Framework

- IPEF was launched on 23 May 2022 at Tokyo, Japan, comprising of 14 countries – Australia, Brunei, Fiji, India, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, Vietnam and USA.
- The IPEF seeks to strengthen economic engagement and cooperation among partner countries with the goal of advancing growth, economic stability and prosperity in the region.
- The framework is structured around four pillars relating to Trade (Pillar I); Supply Chain Resilience (Pillar II); Clean Economy (Pillar III); and Fair Economy (Pillar IV). India had joined Pillars II to IV of IPEF while it has maintained an observer status in Pillar-I.

- Objective of IPEF Supply Chain Resilience Agreement to make IPEF supply chains more resilient, robust, and well-integrated, and contribute towards economic development and progress of the Indo-Pacific region as a whole and better prepare for and respond to supply chain disruptions that pose a risk to economic prosperity while strengthening labor rights.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements

1. India elected as Vice-Chair of the Supply chain council under Indo-Pacific Economic Framework for Prosperity (IPEF) Agreement relating to Supply Chain Resilience.
2. The objective of the Supply Chain Council is to strengthen the supply chains of arms export and import that are critical for national security.
3. Recently, China joined this group as 14th member.

How many of the above statements are true?

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

Answer: a (1 only)

UNITED NATION TREATY ON CYBERCRIME

Why in News: A UN committee has recently approved the first worldwide treaty on cybercrime despite opposition from human rights groups and a coalition of tech companies.

Key Details

- The treaty was adopted by consensus after three years of negotiations but still needs to face a vote from the General Assembly in the fall. It needs to be ratified by 40 nations there.
- The convention establishes “a global criminal justice policy,” to protect society against cybercrime by “fostering international cooperation.”

Key Provisions of Treaty

- The treaty would have UN member states agree to put in place legislation that will make it illegal to breach an

information and communications system people don't have access to.

- It asks states to make it illegal to produce or sell explicit child sexual content online, protect children from online groomers, or make “arrangements” online to abuse a child.
- The treaty also covers misuse of devices and computer-related forgery or theft.
- There's also a call to create laws against deepfake and revenge porn that is distributed online without the consent of the adults involved.
- To assess these crimes, the treaty also gives states permission to “collect or record” relevant data for a conviction and “compel” service providers to hand over incriminating information or documents.
- The last time the UN passed a **protocol on cybercrime** was in **2001** with the **Budapest Convention**, but many countries did not sign that document.

Limitations of the Treaty

- In a last-minute open letter ahead of the vote, the **Cybersecurity Tech Accord**, a group representing tech companies at the UN, said the revised draft was “ambiguous” and doesn't do enough for human rights, press freedom and gender equality.
- Among their concerns are that the treaty allowed states to share personal information without being detected, criminalise “legitimate” online activity because of expanding definitions of what crimes are considered fraud or child sexual abuse, and make it harder for victims of cybercrime to see justice.
- The treaty is also missing support from human rights groups, including the UN's Office of the High Commissioner for Human Rights (OHCHR).

Budapest Convention on Cybercrime

- The Budapest Convention is more than a legal document; it is a framework that permits hundreds of practitioners from Parties to share experience and create relationships that facilitate cooperation in specific cases, including in emergency situations, beyond the specific provisions foreseen in this Convention.
- Any country may make use of the Budapest Convention as a guideline, check list or model law. Furthermore, becoming a Party to this treaty entails additional advantages.
- India is not a party to the Budapest Convention.

ECONOMY & AGRICULTURE

ROLE OF BIO-ECONOMY IN 21ST CENTURY

Why in News: Recently, the Union Minister of State (Independent Charge) for Science and Technology during the “4th Edition of Global Bio India 2024” declared that the “Bioeconomy will drive the industrial revolution in 21 century”.

Key Details

- The Union Minister of State (Independent Charge) for Science and Technology emphasized the **government's priority** in boosting the Bioeconomy, and highlighted that India's bioeconomy has increased 13 times in the previous ten years, from \$10 billion in 2014 to over \$130 billion in 2024, and is expected to reach **\$300 billion by 2030**, highlighting the significance of biotechnology.
- In addition, he mentioned that India's ranking in the Global Innovation Index has improved from **81st** in 2015 to **40th out of 132 economies** (2023).

Global BioIndia 2024

The **Department of Biotechnology (DBT)** and its Public Sector Enterprise(PSE), **Biotechnology Industry Assistance Research Council (BIRAC)**, have launched a **strategic initiative** called Global Bio-India, a Mega International event for national and international biotech stakeholders, to position and advance India's biotechnology sector globally.

- The **4th Edition** of this event will be held on **12-14 September, 2024** in **Bharat Mandapam**, New Delhi.

Global Bio-India 2024 brings together international organisations, regulatory agencies, state and central ministries, SMEs, big businesses, bioclusters, research institutions, investors, and the startup ecosystem.

What is Bioeconomy

- The Bioeconomy refers to the **method of using natural resources**—plants, animals, and marine life—responsibly while employing biological knowledge to propel economic growth in a range of businesses.
- Additionally, it makes use of the unrealised potential found in millions of tonnes of **residual resources** and **biological waste**.
- In the Bioeconomy, plants are broken down into their constituent components as much as possible and transformed into useful products.
- It is anticipated that shifting from an economy dependent

on fossil fuels to one based on biofuels will increase sustainability, lessen our reliance on fossil fuels, decreases Green house gas emissions and safeguard the environment and climate.

- Technologies such as **genetic editing, Bioprocessing**, Digital integration and bioprinting are key to creating an interconnected and dynamic framework for growth.

Types of Bio Economy

Economic-Ecological Bioeconomy: This type of Bioeconomy aims to balance economic growth with environmental care by ensuring that economic activities are sustainable and do not harm the environment.

- Promotes the sustainable use of biological resources, such as crops, forests, and marine life.
- Encourages the adoption of green technologies and eco-friendly practices to minimize environmental impact.
- Focuses on renewable energy sources, like biofuels and biomass, to reduce carbon emissions.
- Prioritizes biodiversity conservation and the maintenance of ecosystem services.

➤ Examples:

- ◆ **Organic Farming:** Programs like **Paramparagat Krishi Vikas Yojana (PKVY)** promote organic farming, reducing chemical use and enhancing soil health.
- ◆ **Afforestation Initiatives:** The **Green India Mission** focuses on increasing forest cover and restoring degraded ecosystems, balancing economic development with environmental conservation.

Mainstream Bioeconomy: The mainstream bioeconomy leverages biological resources for economic gain, focusing on using biology to drive economic activities, particularly in agriculture, biotechnology, and industrial processes.

➤ Examples:

- ◆ **GM Crops:** The adoption of Bt-cotton has improved agricultural yields and reduced the need for chemical pesticides in India.
- ◆ **Biotech Startups:** India's biotechnology sector is growing rapidly, with startups innovating in areas like biofuels, biopharma, and agricultural biotechnology.
- ◆ **Bio-based Products:** The development and

commercialization of bio-based plastics and materials reduce reliance on traditional, petroleum-based products.

Socio-Biodiversity Bioeconomy: This type of bioeconomy focuses on protecting biodiversity and empowering local communities by safeguarding indigenous knowledge and cultural heritage, promoting the sustainable use of biodiversity.

➤ **Examples:**

- ◆ **Community Forest Management:** Joint Forest Management (JFM) programs involve local communities in managing forests, ensuring **sustainable use** and biodiversity conservation.
- ◆ **Medicinal Plant Cultivation:** Initiatives in the Western Ghats support the cultivation of medicinal plants, which are vital to traditional healthcare systems and local economies.
- ◆ **Eco-Tourism:** In areas like the Sundarbans, **eco-tourism** initiatives provide economic benefits to local communities while promoting the conservation of biodiversity.

Potential of the Bio Economy Sector in India

- **Agriculture:** India's diverse agro-climatic conditions make it ideal for bio-agriculture, including organic farming, bio-fertilizers, and precision agriculture.
 - **BioAgri:** This subsector includes the development and production of genetically modified crops and animals, precision agriculture technologies, and bio-based products. Bt Cotton is the single largest crop.
- **Biotechnology:** India's biotechnology sector is rapidly expanding, with potential for leadership in biopharma, bio-services, and bio-industrial sectors.
 - **Bioindustrial:** This subsector includes the development and production of biobased chemicals and products using enzymes, biosynthetic routes, and recombinant DNA technology.
- **Healthcare:** The bioeconomy can provide affordable healthcare solutions, such as vaccines and biosimilars, making India a global hub for biopharmaceuticals.
 - **Biopharma or BioMedical:** The terms "BioPharma" or "BioMedical" are interchangeably used to refer to the broader category encompassing Biopharmaceuticals, **Medical Devices**, **MedTech**, and **Diagnostics**.
- **Renewable Energy:** India's abundant biomass resources offer opportunities for large-scale biofuel production, contributing to energy security and climate change mitigation.
- **Employment:** The bioeconomy can create jobs in rural and urban areas, enhancing livelihoods and supporting inclusive economic growth.
 - **BioResearch & BioIT (BioServices):** Contract Research, Clinical Research and trials, Drug Discovery Services. BioIT includes life sciences

or biotechnology-related software and databases, specialized equipment or instruments for use in the BioEconomy, and bioscience patent lawyers, and services.

Future Outlook

2025 Projection: With the BioEconomy estimated to reach the \$150 billion mark at least two years earlier by 2023, India's BioEconomy could be in the range of \$147-\$152.6 billion at the end of 2023. Continued focus on innovation, global market penetration, and sustainable practices will be pivotal in achieving this milestone.

2030 Vision: Looking ahead to 2030, the forecast suggests a BioEconomy worth \$270-300 billion, accounting for 3.3-3.5% of India's GDP. Key contributors include a robust Biopharma sector, a thriving BioIndustrial segment, and a flourishing BioServices sector. Achieving this vision will require sustained government initiatives, strategic collaborations, and a commitment to technological advancements.

Agriculture	National Mission on Sustainable Agriculture (NMSA): Promotes climate-resilient agriculture and encourages the use of bio-fertilizers and organic farming.	Biotechnology Industry Research Assistance Council (BIRAC): Provides financial and infrastructural support to biotech startups, fostering innovation.	Biotechnology
	Paramparagat Krishi Vikas Yojana (PKVY): Supports organic farming and the use of bio-inputs, improving soil health and reducing chemical dependence.	Atal Jai Anusandhan Biotech Mission: Focuses on leveraging biotechnology for affordable healthcare, clean energy, and sustainable agriculture.	
Steps Taken by the Government to Promote the Bioeconomy Sector in India			
Pharmaceuticals	Production Linked Incentive (PLI) Scheme: Encourages domestic manufacturing of biopharmaceuticals, reducing import dependence and boosting self-reliance.	National Biofuel Policy: Promotes biofuel production with a target of blending 20% ethanol in petrol by 2025, enhancing energy security and reducing emissions.	Renewable Energy
	Biopharma Mission: Aims to develop next-generation biopharmaceuticals, including vaccines and biosimilars, addressing global health challenges.	Waste to Energy Schemes: Support the conversion of agricultural and urban waste into bioenergy, contributing to waste management and energy generation.	

Challenges Faced by the Bioeconomy Sector in India

- **Infrastructure Gaps:** Lack of infrastructure for bioprocessing and bio-manufacturing hampers large-scale implementation of bioeconomy projects, particularly in rural areas.
- **Regulatory Complexities:** The regulatory environment for bio-based products is often complex and cumbersome, slowing down innovation and commercialization.
- **R&D Limitations:** Insufficient investment in research and development limits the growth of new technologies and innovations in the bioeconomy sector.
- **Skilled Workforce Shortage:** The bioeconomy requires a specialized workforce, and there is a shortage of trained professionals in biotechnology, bioinformatics, and bio-manufacturing.
- **Public Awareness:** Limited awareness among the general public and industries about the benefits of bioeconomy leads to slow adoption of bio-based products and practices.
- **Biodiversity Conservation:** The exploitation of

biological resources without proper safeguards can lead to biodiversity loss and ecological imbalances, posing a threat to sustainability.

Way Forward

- **Strengthening Infrastructure:**
 - **Establish Bio-manufacturing Hubs:** Develop bio-manufacturing zones with advanced facilities, particularly in rural areas, to support local economies and reduce disparities.
 - **Enhance Supply Chains:** Improve logistics, storage, and transportation systems for bio-based products to ensure efficient market delivery.
- **Regulatory Reforms:**
 - **Simplify Approvals:** Create a single-window clearance system for bio-based products, reducing delays and fostering innovation.
 - **Update Policies:** Regularly revise bioeconomy-related policies to incorporate technological advancements and global best practices.
- **Promote R&D:**
 - **Increase Investment:** Boost public and private investment in R&D, focusing on emerging areas like synthetic biology, gene editing, and bioinformatics.
 - **Foster Collaboration:** Encourage partnerships between academia, industry, and government to bridge the gap between research and commercialization.
- **Develop Skilled Workforce:**
 - **Launch Skill Development Programs:** Implement targeted training programs in bioeconomy fields, such as biotechnology and bio-manufacturing, to build a skilled workforce.
 - **Strengthen Industry-Academia Linkages:** Align educational programs with industry needs through partnerships between academic institutions and bio-industries.
- **Raise Public Awareness:**
 - **Conduct Awareness Campaigns:** Educate the public and industry stakeholders about the benefits of the bioeconomy through nationwide campaigns.
 - **Integrate Bioeconomy in Education:** Incorporate bioeconomy concepts into school and university curricula to build foundational knowledge from an early age.
- **Ensure Biodiversity Protection:**
 - **Promote Sustainable Practices:** Enforce regulations on biodiversity conservation and ensure equitable benefit-sharing with local communities.
 - **Strengthen Conservation Programs:** Support initiatives that protect ecosystems and species, ensuring the long-term viability of the bioeconomy.

Enhance Global Engagement:

- **Pursue International Collaboration:** Engage in global partnerships to share knowledge, technology, and best practices in the bioeconomy.
- **Participate in Global Initiatives:** Actively take part in global bioeconomy events, such as the Global Bioeconomy Summit, to position India as a leader in the sector.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following is NOT a characteristic of the Economic-Ecological Bioeconomy?

- (a) It focuses on sustainable agricultural practices.
- (b) It prioritizes economic growth over environmental conservation.
- (c) It promotes the use of renewable biological resources.
- (d) It encourages the adoption of green technologies.

Answer: b

Descriptive Question

Q. "The Bioeconomy represents a transformative approach to sustainable development in India." Discuss the potential of bioeconomy in India, the challenges it faces, and the strategies required to overcome these challenges. [15 marks] [250 words]

WOMEN ENTREPRENEURSHIP PROGRAM

Why in News: The National Skill Development Corporation (NSDC), in collaboration with Britannia Industries, has launched the Women Entrepreneurship Program.

About the Women Entrepreneurship Program

- This initiative aims to empower nearly 25 lakh women with the skills, knowledge, and resources needed to start and grow successful businesses.
- It is launched with self-learning basic entrepreneurship courses available in multiple languages on the Skill India Digital Hub (SIDH).
- **The program will be implemented in two phases:**
 - **First phase:** It will offer free online self-learning entrepreneurship courses through the Skill India Digital Hub (SIDH). These courses, available in multiple languages, will cover crucial topics such

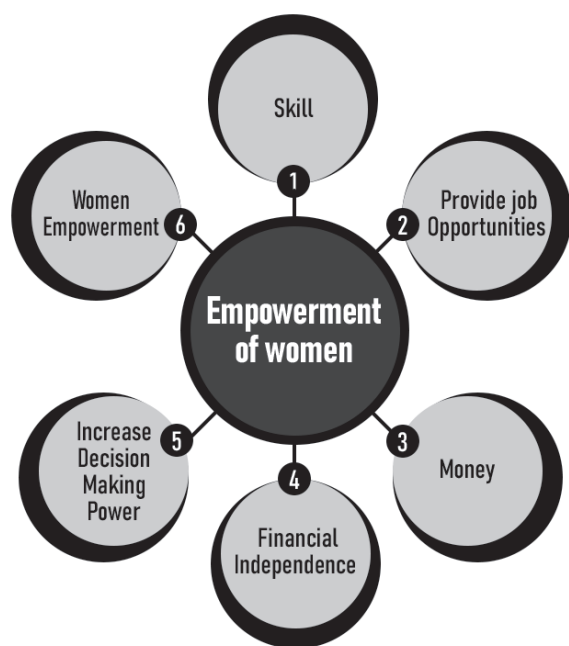
as entrepreneurial skills, enterprise setup, finance basics, digital skills, and market analysis.

- **Second Phase:** NSDC extends robust incubation support to 10,000 shortlisted contestants across 100 business models. This support encompasses business model selection, entrepreneurship development programs, industrial workshops, business registration assistance, project report preparation, and guidance on funding through various government entrepreneurship and startup schemes.

- The initiative will culminate in a grand finale where the top 50 contestants will present their business ideas to a distinguished jury. And Britannia Industries will award financial grants of 10 lakh rupees each to 10 of the most successful contestants.

Significance of the Program

- **Empowerment of women:** The program will empower women entrepreneurs and spurring economic growth. It can help to enhance social equity and inclusivity, ensuring that women have equal opportunities to succeed and thrive.



- **Supportive family Environment:** Through financial independence, women gain an overarching confidence, which often leads to a reduction in domestic abuse and alcoholism in men, creating a healthier and more supportive home environment.
- **Women Dignity:** Financial empowerment also shifts the dynamics within households, fostering mutual respect and cooperation.
- **Financial stability of the family:** Women who are economically independent can contribute to the household income, which in turn improves the overall financial stability of the family. This stability allows for better education and health outcomes for children, creating a positive cycle of growth and development.

- **Social Change:** Empowered women are more likely to engage in community activities and take on leadership roles, driving social change and fostering a culture of inclusivity and equality. They become role models for the next generation, inspiring young girls to pursue their dreams and aspirations without limitations.

Issues faced by Women entrepreneurs in India

- **Lack of Social Support:** Women lack social supports to kick start their business from family, peers, society because of prevalent prejudices associated with women.
- **Lack of Funding:** Due to investor prejudice and other issues, women-owned firms in the nation do not have easy access to funding. Many Venture Capital firms and angel investors are reluctant to invest in women-led businesses in India.
- **Double Burden:** Owing to social and cultural norms, Indian women are constantly forced to choose between their professional and family lives. As the venture and the family grow, maintaining a perfect work-life balance becomes an almost impossible challenge and, more often than not, the business suffers.
- **Safety issues:** One of the main issues facing Indian women entrepreneurs is limited mobility. Usually they feel unsafe on alone trips or stay in hotels for work without being concerned about their safety.
- **Lack of education:** Women's education is rarely given the credit it deserves. Because of this, a large number of aspiring female business owners lack the training necessary to operate a profitable company. Women are leveling the playing field by gaining access to higher education.
- **Stiff Competition:** Businesses now face intense competition due to the current state of the economy and market dynamics. Moreover, at most industry gatherings the men dominate the networking and the information flow.
- **Gender Stereotypes:** The establishment and expansion of firms by female entrepreneurs might be hindered by cultural limitations and deeply embedded preconceptions regarding the roles of women in society.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Recently, Women Entrepreneurship Program was in news, it was launched by?
- (a) National Skill Development Corporation
 - (b) Rashtriya Mahila Kosh
 - (c) Department of Financial Services
 - (d) National Social Assistance Programme

Answer: a

Descriptive Question

Q. Evaluate the potential impact of women entrepreneurship program on the broader socio-economic development of India. Also discuss how this program aims to address the challenges faced by women entrepreneurs in this country? [15 marks] [250 words]

DEVELOPMENT OF EXPORT-ORIENTED HORTICULTURE CLUSTERS

Why in News: Recently the Union Agriculture Minister has announced setting up 100 export-oriented horticulture clusters in the next five years.

About the Horticulture Cluster Development Program

- A horticulture cluster is defined as a regional/geographical concentration of targeted horticulture crops, offering scope for specialisation in production, post-harvest management, marketing and exports.
- It aims to enhance the global competitiveness of the Indian horticulture sector.
- It is a Central Sector programme implemented by the National Horticulture Board (NHB).

Objective of the Program

- Address the concerns of horticulture value chains in an integrated manner to accelerate competitiveness in the domestic and export markets.
- Reduce harvest and post-harvest losses by developing/expanding/upgrading the infrastructure for post-harvest handling of produce, value addition and market linkages.
- Facilitate introduction of innovative technologies and practices that will help to enhance the global competitiveness of focus cluster crops.
- Facilitate the dovetailing of resources, including the convergence of various government schemes, to entrench stakeholders in the global value chains.
- Build capacity of stakeholders and enhance farmers' income through cluster-specific interventions including brand promotion.

Key Features of the Program

- **Pre-production and Production:** Support capacity-building of farmers and farm proximate interventions covering crop lifecycle, including planting material, crop-care practices and farm mechanisation until the harvest of the crop.
- **Post-harvest Management and Value Addition:** Support interventions at the cluster level, ranging from post-harvest handling of the produce during transportation to storage, value addition and packaging.

- **Logistics, Marketing and Branding:** Support interventions to link cluster produce with consumption markets and seamless logistics for efficient evacuation, cluster branding and outreach in the domestic and export markets.

Challenges in the Horticulture Industry

- **Persistent Pest Problem:** The prevalence of insect infestations and plant diseases can significantly diminish crop yield and quality, thereby resulting in substantial financial setbacks for farmers.
- **Lack of high-quality seedlings and rootstock:** The seedlings that are procurable in the marketplace exhibit inferior quality, thereby resulting in subpar crop yields and consequent monetary setbacks for agriculturalists. The dearth of superior rootstock presents a formidable obstacle, especially in the context of fruit-bearing trees, wherein the rootstock assumes a pivotal function in dictating the triumph of the harvest.
- **Climate Change:** Rising temperatures, changing rainfall patterns, and extreme weather events like floods and droughts are making it harder for farmers to grow crops. These conditions can reduce crop yields, lower the quality of fruits, and increase the risk of pests and diseases. Additionally, changes in temperature and rainfall may affect the timing of planting and harvesting, disrupting supply chains and causing market prices to fluctuate.
- **Export Growth Stalled by Production and Infrastructure Hurdles:** Export growth is being undermined by marketing challenges, inadequate transport infrastructure, fragmented supply chains, and insufficient storage facilities. These factors result in delays and wastage and discourage farmers from improving the quality of their produce.

Way Forward

- **Technological Advancements:** The adoption of Controlled Environment Agriculture (CEA), precision farming, drip irrigation, greenhouse farming, AI, robotics, and engineered plant genetics has boosted productivity and crop quality. Significant improvements in storage and transportation, including cold storage and refrigerated transport, have enhanced farm-to-market connectivity.
- **Expanded Export Opportunities:** India's horticulture sector has seen increased export options, supported by government policies and programs, leading to higher income for farmers.
- **Growth in Organic Farming:** There is a rising interest in organic farming in India's horticulture sector, promoting sustainable and environmentally friendly practices that result in healthier crops and increased profitability.
- **Strengthening of Secondary Industries:** The integration of technology in farming is boosting productivity, creating growth opportunities for related industries like fruit processing, natural dyes, dietary fibers, and essential oils, especially near fruit farms.

Conclusion

India is the second-largest producer of horticulture crops globally, accounting for nearly 12% of the world's production of fruits and vegetables. Due to its high remunerative capability, the horticulture sector has emerged as one of the potential agriculture enterprises that will accelerate the growth of the Indian economy.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following is not a key objective of the Horticulture Cluster Development Program (CDP)?

- (a) Enhancing global competitiveness of the Indian horticulture sector.
- (b) Increasing subsidies for chemical fertilizers.
- (c) Reducing harvest and post-harvest losses.
- (d) Facilitating introduction of innovative technologies.

Answer: b

Descriptive Question

Q. Examine the challenges faced by the horticulture industry in India, particularly in the context of climate change and export growth. Also suggest measures to overcome these challenges. [15 marks] [250 words]

KRISHI-DECISION SUPPORT SYSTEM

Why in News: Recently, the Union Minister of State for Agriculture launched Krishi-Decision Support System (Krishi-DSS) a geo-spatial platform to provide real-time information on crop conditions, weather patterns, water resources, and soil health.

About Krishi-DSS

- The platform provides seamless access to comprehensive data including satellite images, weather information, reservoir storage, groundwater levels and soil health information, which can be easily accessed from anywhere at any time.
- Krishi-DSS includes several advanced modules designed to support comprehensive agricultural management from the vast expanse of fields to the smallest soil particle, Krishi-DSS has it covered.
- Krishi-DSS is more than just a tool, it's a catalyst for innovation and sustainability in agriculture

Key Details

- Enhancing Sustainable Agriculture through Crop Mapping and Monitoring:** With crop mapping and

monitoring, government will be able to understand cropping patterns by analysing parcel-level crop maps over the different years. This information helps in understanding crop rotation practices and promotes sustainable agriculture by encouraging the cultivation of diverse crops.

- With Field parcel segmentation, we will be able to accurate field parcel units which will help in understanding each parcels unique needs, cropping patterns for targeted interventions.
- **Drought monitoring:** It will helps to stay ahead of the drought, which gives near real-time information on various indicators i.e soil moisture, water storages, crop condition, dry spells etc, while crop weather watch will keep us informed about how weather is impacting the crops, crop harvest status, crop residue burning etc.
- **Comprehensive Soil Data for Crop and Land Management:** One nation-one soil information system gives a comprehensive soil data at your fingertips i.e soil type, soil pH, soil health etc. Soil data will help us in assessing crop suitability and land capability for implementing soil water conservation measures.
- **Fostering Innovation with Krishi-DSS Ground Truth Data Library:** Ground truth data library of Krishi-DSS will foster innovation by providing essential resources like ground truth data and spectral libraries for different crops to the researchers and industry.
 - From flood impact assessment to Crop insurance solutions and many more, Krishi-DSS is a holistic solution. It's about empowering our farmers, informing our policies, and nourishing our nation.
- **Data Integration:** By integrating various data sources available on the Krishi Decision Support System (DSS), various farmer-centric solutions can be developed such as right individual advisories to farmers, early disaster warning like Pest attack, Heavy rain, Hail storm etc.

Application of Space Technology in Agriculture

- **National Land Use/Land Cover (LU/LC) mapping:** LU/LC assessment is made using semi-automated approach which includes automated processing of AWiFS quadrant data and classification using rule based approach. Water spread as well as snow cover information is generated through automated process. Rule based data integration of temporal datasets was adopted to derive final LU/LC output.
- **Crop Acreage and Production Estimation:** The semi-physical spectral-spatial yield model was developed for various crops and provided to Mahalanobis National Crop Forecasting Centre (MNCFC) and required training is being imparted to MNCFC personnel for running the model and deriving planting date from time series NDVI data.
- **Coordinated programme on Horticulture Assessment and Management using Geoinformatics (CHAMAN):** This

national level project has been taken up, with the major objectives of

- Area assessment and production forecasting of major horticultural crops in selected districts in India;
- Geospatial applications for horticultural development and management planning; and
- Detailed scientific field level studies for developing technology for crop identification, yield modelling and disease assessment. Temporal high-resolution data (LISS-IV and Cartosat-1) has been used for delineation of spatial extent of the crop of interest.
- A mobile application 'CHAMAN app' was developed to aid in faster and efficient collection of ground information, as well as in building geodatabase through Bhuvan platform.

• **Cotton crop area mapping:** Multi-temporal satellite (Landsat-8) data was classified and interpreted for cotton crop identification, discrimination and mapping for Wardha Taluka in Wardha district, Maharashtra. Land Use/Land Cover, forest, settlement, water bodies and ancillary data was used to mask the non-crop area. It was observed that around 17,900 ha area of study area was covered by cotton crop (21.4% of total geographical area). The results were subsequently validated in the field.

• **Indian Forest Cover Change Alert System (InFCCAS):** A remote sensing based technique was developed for automated detection of forest cover loss of an area greater than 2 hectare for rapid annual monitoring. The forest pixels are identified on Resourcesat-2 AWiFS data (20 x 20 tiles) for Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Telangana, Uttar Pradesh and West Bengal).

• **KISAN [C(K)rop Insurance using Space technology And geoinformatics]:** The project envisaged use of high-resolution remote sensing data for optimum crop cutting experiment planning and improving yield estimation.

• **National Agricultural Drought Assessment and Monitoring System (NADAMS):** NADAMS project, developed by National Remote Sensing Centre, provides near real-time information on prevalence, severity level and persistence of agricultural drought at state/ district/sub-district level.

- Currently, it covers 17 states of India, which are predominantly agriculture based and prone to drought situation.

• **Forecasting Agricultural Output using Space, Agrometeorology and Land based Observations (FASAL) project:** It regularly generates crop forecasts at District/State/National level for 9 major crops of the country, using the procedures developed by Space Applications Centre, ISRO. Both optical and microwave Remote sensing data is used for crop acreage estimation, crop condition assessment and production forecasting.

• **Soil Resource Mapping:** Soil and Land Use Survey of India, which uses satellite data for soil resources mapping.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding National Agricultural Drought Assessment and Monitoring System (NADAMS):

1. It is a pan India system developed by National Remote Sensing Centre.
2. It provides near real-time information on prevalence, severity level and persistence of agricultural drought at state/ district/sub-district level.

Which of the statements above is/are correct?

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

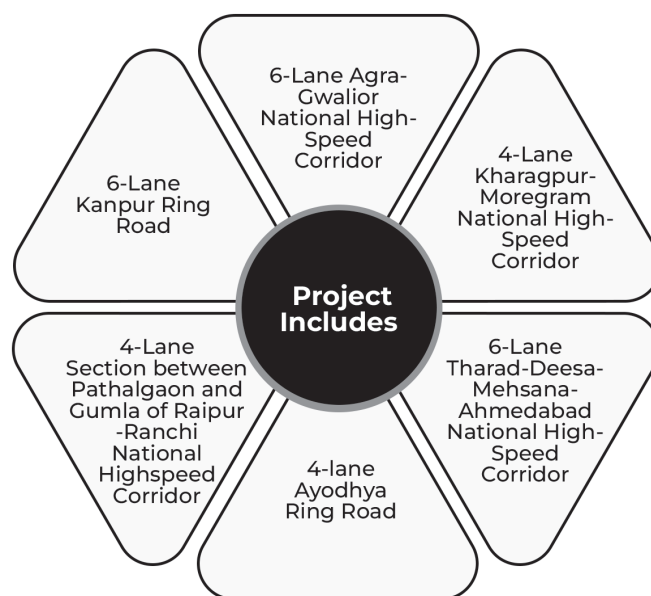
Answer: b

NATIONAL HIGH SPEED ROAD CORRIDOR

Why in News: The Cabinet Committee on Economic Affairs has approved the development of eight National High Speed Corridor project across India.

Key Details

- The projects will cover 936 km to improve logistics efficiency and connectivity across the country.



- Implementation of these 8 projects will generate an estimated 4.42 crore mandays of direct and indirect employment.
- The government has adopted a corridor-based highway infrastructure development approach with focus on ensuring consistent standards, user convenience and logistics efficiency, as compared to the earlier project-based development approach.

Approved Projects:

Nashik Phata - Khed Corridor near Pune: This 30-km high-speed corridor will be developed on Build-Operate-Transfer (BOT).

Significance:

- The elevated corridor will provide seamless high-speed connectivity for traffic originating from/ heading to industrial centers.
- The corridor will also alleviate serious congestion around Pimpri-Chinchwad.

Gwalior National High-Speed Corridor: The 88-km high-speed corridor will be developed on Build-Operate-Transfer (BOT) mode.

Significance:

- It will reduce the distance between Agra and Gwalior by 7% and the travel time by 50%, thereby bringing in a substantial reduction in logistics cost.
- The corridor will enhance connectivity to key tourist destinations in Uttar Pradesh (e.g., Taj Mahal, Agra Fort, etc) and Madhya Pradesh (e.g., Gwalior Fort, etc).

Tharad - Deesa - Mehsana - Ahmedabad National High-Speed Corridor: The 214-km high-speed corridor will be developed in Build - Operate - Transfer (BOT) mode.

Significance:

- The corridor will provide connectivity between the state of Gujarat, viz., Amritsar - Jamnagar Corridor and Delhi - Mumbai Expressway, thereby providing seamless connectivity for the freight vehicles originating from industrial regions of Punjab, Haryana, and Rajasthan to the major ports in Maharashtra (JNPT, Mumbai and newly-sanctioned Vadnavan port).
- The corridor will also provide connectivity to key tourist destinations in Rajasthan (e.g., Mehrangarh Fort, Dilwara Temple, etc.) and Gujarat (e.g., Rani ka Vav, Ambaji Temple, etc.)

Kanpur Ring Road: The 47-km road will be developed in Engineering, Procurement and Construction (EPC) Mode.

Significance:

- It will improve logistics efficiency for freight travelling between Uttar Pradesh, Delhi, Bihar, Jharkhand and West Bengal.

Kharagpur - Moregram National High-Speed Corridor: The 231-km will be developed in Hybrid Annuity (HAM) Mode.

Significance:

- It will provide efficient connectivity for traffic between states such as West Bengal, Odisha, Andhra Pradesh etc. on one end and North-Eastern part of the country on the other.
- The corridor will enable reduction in travel time from existing 9 to 10 hours to 3 to 5 hours for freight vehicles between Kharagpur and Moregram, thereby reducing logistics cost.

Ayodhya Ring Road: The 68 km will be developed in Hybrid Annuity Mode (HAM)

Significance:

- The Ring Road will reduce congestion on National Highways passing through, thereby enabling fast movement of pilgrims visiting the Rama Mandir.

- The Ring Road will also provide seamless connectivity to national and international tourists arriving from Lucknow International Airport, Ayodhya Airport and major railway stations in the city.

Pathalgaon and Gumla of Raipur-Ranchi National Highspeed Corridor: The 137-km will be developed in Hybrid Annuity Mode (HAM).

Significance

- It will enhance connectivity between mining areas, industrial and manufacturing zones.

Northern Guwahati Bypass and Widening/Improvement of Existing Guwahati Bypass: The 121-km Guwahati Ring Road will be developed in Build Operate Toll (BOT) mode.

Significance:

- It will provide seamless connectivity to long-distance traffic and will ease congestion on major National Highways around Guwahati.

Conclusion

Infrastructure development is the foundation for a country's economic prosperity and is critical for improving the quality of life of its citizens. Every rupee spent on infrastructure development has a multiplier effect of about 2.5-3.0 times on GDP. John F Kennedy once said: "America's roads are good not because America is rich. America is rich because of its good roads."

EXPECTED QUESTION FOR UPSC CSE**Descriptive Question**

- Q. Discuss the significance of infrastructure development in driving economic prosperity and improving the quality of life in India. Analyze the impact of the corridor-based highway infrastructure development approach undertaken by the Ministry of Road Transport and Highways. [15 marks] [250 words]

THE ECONOMIC SURVEY (2023-24) ON FOREIGN DIRECT INVESTMENT

Why in News: The Economic Survey (2023-24) suggested that Foreign Direct Investment (FDI) from China could be leveraged to benefit from 'China plus one Strategy'.

What is China Plus One Strategy?

- It is a supply chain strategy that encourages companies to minimize their supply chain dependency on China by diversifying the countries they source parts from.
- The goal here is to reduce the risk of over relying on a single country for sourcing and manufacturing. It is similar to the famous saying, "don't put all your eggs in one basket".
- This strategy emerged in 2013 due to concerns about

global dependency on China and has gained ground with trade tensions, COVID-19 disruptions, and rising labour costs.

- New markets are emerging as great alternatives to China, including Vietnam, Mexico and India.

How can India benefit from China Plus One Strategy?

Under China Plus one strategy, India has two options - it can integrate into China's supply chain or promote FDI from China.

If we do cost-benefit analysis of the above two options, FDI from China appears more advantageous.

Integrate into China's Supply Chain

- India trade deficit with China stand of \$85 billion in FY24. This deficit increased from \$83 billion in FY23 and \$73 billion in FY22.
- India after importing product from China further promote manufacturing in India. And after adding minimal value to it, then exporting to other countries. However it is not very profitable.
 - **For example**, in electronics, India's exports to the US have moved from a trade deficit of \$0.6 billion in FY17 to a trade surplus of \$8.7 billion in FY24. But India's imports from China is the highest in the electronics and telecom products segment at 38 per cent.
- As India looks to improve its manufacturing capacity, it will have to increase imports of capital goods. India has no alternative choices except China as China's base of capital good manufacturing sector.

Promote FDI from China

- FDI inflows from China can help in increasing India's global supply chain participation along with a push to exports.
- Focusing on FDI from China seems more promising for boosting India's exports to the US, similar to the East Asian economies. It is more effective to have Chinese companies invest in India and then export the products to other markets.
- Moreover, choosing FDI as a strategy to benefit from the China plus one approach appears more advantageous than relying on trade. This is because China is India's top import partner, and the trade deficit with China has been growing.
- China's dominance over a large number of product categories creates a risk of economic coercion, where the

government restrains access to crucial inputs for political leverage.

- Beijing has started retaliating against these import restrictions which has further complicated the manufacturing landscape for emerging market and developing economies EMDEs.
 - For example, in response the India's anti-dumping probe against Chinese entities, China has been quietly blocking India's access to solar equipment.
- Given India's large bilateral trade deficit with China, it makes India vulnerable to potential abrupt supply disruptions.
- Replacing some well-chosen imports with investments from China raises the prospect of creating domestic know-how down the road. Though it may have other risks but FDI from China appears better option.
- Brazil and Turkey had the similar approach as they have raised barriers to Chinese electric vehicle imports while attracting Chinese FDI in the sector.
- US adoption of China Plus one strategy benefited countries like Mexico, Vietnam, Taiwan, and Korea, but these countries also promoted FDI from China.

FDI in India

- In 2017-18, India attracted the maximum FDI from Mauritius. After the India-Mauritius tax treaty amendment, Singapore has emerged as the preferred jurisdiction for foreign investment in India.
 - India's initiatives such as amendments by the SEBI to the REIT Regulations 2014 have created new opportunities for Singapore-based investors in India.
 - Since 2018-19, Singapore has been the largest source of such investments for India. India received the highest FDI from Singapore in 2023-24.
- During the last fiscal, FDI equity inflows decreased from major countries, including Mauritius, Singapore, the US, the UK, UAE, Cayman Islands, Germany, and Cyprus.
- The total FDI — which includes equity inflows, reinvested earnings and other capital — declined marginally by one per cent to \$70.95 billion during 2023-24 from \$71.35 billion in 2022-23. Note- In 2021-22, India received the highest ever FDI inflows of \$84.83 billion.
- The U.S. is the third largest investor in India in 2023-24 with \$4.99 billion foreign investments, though it is down from \$6 billion in 2022-23.
- USA was followed by the Netherlands (\$4.93 billion), Japan (\$3.17 billion), the UAE (\$2.9 billion), U.K. (\$1.2 billion), Cyprus (\$806 million), Germany (\$505 million), and Cayman Islands (\$342 million).

Conclusion

Foreign investments are crucial for India to overhaul its infrastructure such as ports, airports and highways to push growth. FDI also helps improve the country's balance of payments situation and strengthen the rupee value against other global currencies, especially the U.S. dollar.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following best describes the “China Plus One” strategy adopted by several countries and companies?
- A policy aimed at exclusively increasing trade with China while reducing trade with other countries.
 - A strategy to diversify supply chains by establishing alternative production or sourcing options in addition to China.
 - A diplomatic approach to enhance military alliances with China and its neighboring countries.
 - An economic plan to solely invest in infrastructure development within China to boost its economy.

Answer: b

Descriptive Question

- Q. Evaluate the impact of ‘China plus one strategy’ in shaping the future of global supply chains. Discuss the opportunities and challenges associated with this for India. [15 marks] [250 words]

RISE IN DIRECT TAX COLLECTIONS FOR ASSESSMENT YEAR 2024-25

Why in News: The Central Board of Direct Taxes recently reported that out of the total I-T returns for assessment year 2024-25, 70% have opted for the new tax regime.

Key Details

- The total number of ITRs for assessment year 2024-25 filed till July 31, 2024 is more than 7.28 crore, which is 7.5 per cent higher than the total ITRs for AY 2023-24 (6.77 crore) filed till July 31, 2023.
- The gross direct tax collections of the Indian government witnessed a rise of 24% YoY.
- Also, the tax refunds have been increased by 33.5%.
- The direct taxes contributing to such collections comprise the corporate tax, personal income tax, securities transaction tax, equalization levy, and various others such as fringe benefits tax, wealth tax, banking cash transaction tax, hotel receipt tax, interest tax, expenditure tax, estate duty, and gift tax.

About Central Board of Direct Taxes

- The Central Board of Revenue as the apex body of the Department, was entrusted with the task of administration of taxes.
- It came into existence as a result of the Central Board of Revenue Act, 1924.

- Initially, the Board was in charge of both direct and indirect taxes. Subsequently, the Board was split up into two, namely the Central Board of Direct Taxes and Central Board of Excise and Customs with effect from 1.1.1964.
- This bifurcation was brought about by constitution of two Boards u/s 3 of the Central Board of Revenue Act, 1963.
- The Central Board of Direct Taxes is a statutory authority constituted under the Central Board of Revenue Act, 1963.
- The officers of the Board in their ex-officio capacity also function as a Division of the Ministry dealing with matters relating to levy and collection of direct taxes.
- The Central Board of Direct Taxes consists of a Chairman and six members.

Comparing the Equity Impact of Direct and Indirect Taxes on citizens

Direct Tax:

- Under progressive Direct taxes where higher-income individuals pay a higher percentage of their income in taxes. This can help reduce income inequality.
- By taxing higher incomes and wealth at higher rates, direct taxes can facilitate wealth redistribution, potentially reducing the gap between rich and poor.

Indirect Tax:

- Indirect taxes apply uniformly across all consumers (GST), regardless of income, which can exacerbate income inequality.
- Low-income households spend a larger proportion of their income on consumption, so they bear a greater burden from indirect taxes.
- Indirect taxes can raise the cost of goods and services, disproportionately affecting low-income individuals who spend a larger share of their income on the essential items.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements accurately describes the impact of direct and indirect taxes on economic inequality?
- Direct taxes, such as income taxes, tend to reduce economic inequality by being progressive, while indirect taxes, such as GST, tend to increase inequality due to their regressive nature.
 - Direct taxes are regressive and increase inequality, whereas indirect taxes are progressive and help reduce economic disparities.
 - Both direct and indirect taxes have the same impact on economic inequality, as their effects are neutral with respect to income distribution.
 - Indirect taxes are regressive and increase economic inequality, while direct taxes are neutral in their impact on economic disparity.

Answer: a

DECEPTIVE DARK PATTERNS

Why in News: Recently, a report released by Advertising Standards Council of India (ASCI), titled “Conscious Patterns,” reveals that almost all Indian apps use deceptive or dark patterns in their business.

Key Findings

- It has been found that 52 of the top 53 apps have deceptive UI (user interface)/UX (user experience) practices that can impact user autonomy and informed decision-making or mislead users into doing something they originally did not intend or want to do.
- The deceptive patterns discovered include privacy deception, interface interference, drip pricing, and false urgency etc.
 - Privacy deception emerged as the most prevalent deceptive pattern, observed in 79% of the apps analysed, followed by interface interference (45%), drip pricing (43%), and false urgency (32%).
 - Health-tech led the list of sectors where deceptive patterns are the highest, followed by travel booking and e-commerce. Interestingly, the deceptive patterns per app were lowest in gaming and streaming services.
 - ◆ Health-tech platforms including Tata 1mg were the most violative in terms of deceptive practices.

What are “Conscious patterns” and “Dark Pattern”?

- “**Conscious patterns**” refer to features in an app’s user interface that are clear and honest, making it easy for users to understand what they are doing and avoid being tricked.
- The term “**Conscious patterns**” contrasts with “**dark patterns**,” which are deceptive tactics that can trick or coerce users into actions they might not intend.
 - Social media companies and Big Tech firms such as Apple, Amazon, Skype, Facebook, LinkedIn, Microsoft, and Google use dark or deceptive patterns to downgrade the user experience to their advantage.
 - **For example**, when a user try to unsubscribe from an email newsletter, but the “Unsubscribe” button is hard to find or is hidden in very small text at the bottom of the email. Sometimes, even after you click it, the process is made confusing by asking multiple times if you’re sure you want to unsubscribe, or by redirecting you to a page where the option is difficult to locate. This design tricks you into staying subscribed longer than you intended, which is a classic dark pattern.

Violation of Users Right to Choice and Privacy

- **Lack of Informed Consent:** Users are often not fully aware of what they’re agreeing to, which undermines the principle of informed consent.

- **Exploitation of Vulnerabilities:** Dark patterns endanger the experience of Internet users and make them more vulnerable to financial and data exploitation by Big Tech firms.
- **Deceptive Design Tactics that Frustrate Users:** Dark patterns confuse users, introduce online obstacles, make simple tasks time-consuming, have users sign up for unwanted services/products, and force them to pay more money or share more personal information than they intended.

Is there any law in India to Govern these practices?

- The Department of Consumer Affairs and the ASCI have identified the issue and recently taken certain steps to handle the same. Companies are being asked to desist from using such tactics in the e-market.
- Major Indian online marketplaces received a letter from the Department of Consumer Affairs warning them against engaging in “unfair trade practices” by implementing “dark patterns” in their user interfaces to influence consumer choice and infringe on “consumer rights” as stated in Section 2(9) of the Consumer Protection Act, 2019.
- The Indian government doesn’t have any existing laws to specifically address dark patterns. To do this, new rules aimed against deceptive design practices may need to be introduced along with updated consumer protection laws and data protection legislation.

How global regulators dealing with dark pattern?

- The Competition and Markets Authority (CMA) of the U.K. lists different pressure-selling techniques that the CMA believes would likely violate consumer protection laws and for which actions will be taken.
- Guidelines from the European Data Protection Board were released in 2022 and offered designers and users of social media platforms practical guidance on how to spot and avoid so-called “dark patterns” in social media interfaces that are in violation of General Data Protection Regulation (GDPR) laws.

Conclusion

The study emphasised the need for clear and honest design to enhance user trust and transparency. Further there is a need of clarity on how dark patterns are defined as it would help companies know what sort of design options shown to users is alright and what is not.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following best describes a “dark pattern” in user interface design?

- (a) A design element that enhances the aesthetic appeal of a website.

- (b) A user interface feature that simplifies the user experience.
- (c) A deceptive design practice intended to manipulate users into making choices that benefit the company, often at the expense of user autonomy.
- (d) A technical error in a website's layout that causes confusion for users.

Answer: c

Descriptive Question

Q. What is "dark pattern"? Discuss the ethical implications of "dark patterns" in digital interfaces and suggest measures to enhance consumer protection in the digital ecosystem. [15 marks] [250 words]

THE OILFIELDS (REGULATION AND DEVELOPMENT) AMENDMENT BILL, 2024

Why in News: Recently the Oilfields (Regulation and Development) Amendment Bill, 2024 was introduced in Rajya Sabha.

Objective Behind the Amendment

- To delink petroleum operations from mining by clarifying the granting and extension of natural gas and petroleum leases, and create a new dispute resolution mechanism for the exploration and production sector.
- To reduce the complexities in the process of granting and extension of petroleum leases without compromising on environmental safeguards.
- To promote ease of doing business and attract investment in the oil mining sector to infuse necessary capital and technology.
- To promote and facilitate the adoption of measures for reducing carbon and greenhouse gas emissions and decarbonising operations including but not limited to the use of oilfields for other purposes, such as the production of hydrogen or coal gasification.
- To increase domestic production of oil and gas to meet the rising demand for energy and reduce import dependence of the country.
- **Note:** Originally, oilfields, mines, and minerals were comprehensively regulated together through the Mines and Minerals (Regulation and Development) Act, 1948. Moreover, the original Act of 1948 was also renamed as the Oilfields (Regulation and Development) Act, 1948, (the said Act) and made applicable to mineral oils only.
 - Subsequently, in 1957, the Mines and Minerals (Development and Regulation) Act, 1957 was enacted

for the development and regulation of mines and minerals under the control of the central government.

Key Features of the Bill

- **Definition of mineral oils expanded:** The Bill has introduces the term 'Mineral Oils' in place of 'Oils'. The Act defines mineral oils to include petroleum and natural gas. The Bill expands the definition to include: (i) any naturally occurring hydrocarbon, (ii) coal bed methane, and (iii) shale gas/oil. It clarifies that mineral oils will not include coal, lignite or helium.
- **Introduction of petroleum lease:** The Act provides for a mining lease. The lease provides for various activities such as exploration, prospecting, production, making merchantable, and disposal of mineral oils. The Bill replaces the mining lease with a petroleum lease, which also covers similar set of activities.
- **Rule making powers of the central government expanded:** The central government may also make Rules on (i) merger and combination of petroleum leases, (ii) sharing of production and processing facilities, (iii) obligations of lessees towards protecting environment and reducing emissions, (iv) alternative mechanisms for resolving disputes in relation to the grant of petroleum leases.
- **Decriminalisation of offences:** Earlier the Act provides that violation of Rules will be punishable with imprisonment up to six months, a fine of Rs 1,000, or both. The Bill instead provides that the above offence will be punishable with a penalty of Rs 25 lakh. The Bill also adds following offences: (i) undertaking activities related to mineral oils such as exploring, prospecting, and production without a valid lease, and (ii) non-payment of royalty. These are also punishable with a penalty of Rs 25 lakh. Continued violation in case of all above offences will attract a penalty of up to Rs 10 lakh per day.
- **Adjudication of penalties:** The central government will appoint an officer of the rank of Joint Secretary or above for adjudication of penalties. Appeals against the decisions of the Adjudicating Authority will lie before the Appellate Tribunal specified in the Petroleum and Natural Gas Board Regulatory Board Act, 2006. The 2006 Act designates the Appellate Tribunal for Electricity, constituted under the Electricity Act, 2003, as the Appellate Tribunal.

Conclusion

The Oilfields (Regulation and Development) Amendment Bill, 2024 aimed at strengthening petroleum operations through rules framed for governing various functional aspects and creating an environment for facilitating energy transition by enabling the development of comprehensive energy projects for harnessing wind and solar energy along with mineral oils at oilfields.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following is specifically excluded from the definition of 'mineral oils' under the Oilfields (Regulation and Development) Amendment Bill, 2024?

- (a) Petroleum (b) Coal Bed Methane
(c) Shale Gas (d) Lignite

Answer: d

AGRICULTURE AND ALLIED SECTOR

Why in News: The Budget 2024-25 has made a provision of ₹ 1.52 lakh crore for agriculture and allied sector.

Overview of Finances

- Within the Ministry, 92% of the allocation made for 2024-25 is to be spent on the Department of Agriculture and Farmers Welfare while the remaining 8% will be spent under the Department of Agricultural Research and Education.

Utilisation of Funds

- Between 2018-19 and 2023-24, the average fund utilisation by the Ministry was around 86% as compared to the budget estimates.

Issues for Consideration

- Share of economy and employment:**
 - The agriculture sector employs the largest share of the workforce in India but contributes the lowest to value addition in the economy.
 - In 2022-23, agriculture employed about 46% of the workforce, and accounted for 18% of India's gross value added (GVA).
 - While the agriculture sector continues to employ a majority of India's workforce, there has been a change in the composition of the workforce employed in agriculture.
 - The share of cultivators in total agricultural workforce reduced from 54% in 2001 to 45% in 2011 while the share of agricultural labourers increased from 46% in 2001 to 55% in 2011.
- Low growth rates in the crop sector:**
 - The agriculture sector grew at 1.4% in 2023-24, lowest since 2015-16.
 - Growth in the sector has been volatile, and averaged at 3.6% in the past 12 years.
 - Within agriculture, crop production accounts for over 50% of the total production. The share of crop

production in gross agricultural value added (at current prices) has decreased from 65% in 2011-12 to 55% in 2022-23.

- The share of fishing and aquaculture in agriculture GVA (at current prices) increased from 5% in 2011 to 7% in 2022-23 while the share of livestock has increased from 22% to 30% in the same period.

Agriculture Sector in Union Budget 2024-25

As part of measures to enhance productivity and resilience in Agriculture sector, the Union Budget 2024-25 has announced several measures including Digital Public Infrastructure, 'Atmanirbharta' for oil seeds, Large scale clusters for vegetable production and financial support for network of Nucleus Breeding Centres for Shrimp Broodstocks.



Productivity and Resilience in Agriculture

- Digital Public Infrastructure: Digital crop survey for Kharif using DPI to be taken up in 400 districts.
- Issuance of Jan Samarth based Kisan Credit Cards to be enabled in 5 states.
- Financial support for setting up a network of Nucleus Breeding Centres for Shrimp Broodstocks to be Provided.
- National Cooperation Policy to be framed with an objective to Fast-tracking growth of rural economy & generation of employment opportunities.



Digital Public Infrastructure for Agriculture

- Buoyed by the success of the pilot project, the Government, in partnership with the states, will facilitate the implementation of the Digital Public Infrastructure(DPI) in agriculture for coverage of farmers and their lands in 3 years.

Missions for pulses and oilseeds

- For achieving self-sufficiency in pulses and oilseeds, the Government will strengthen their production, storage and marketing.
- A strategy is being put in place to achieve 'Atmanirbharta' for oil seeds such as mustard, groundnut, sesame, soybean, and sunflower.

Vegetable production & Supply Chains

- Large scale clusters for vegetable production will be developed closer to major consumption centres.
- Government will promote Farmer-Producer Organizations, cooperatives and start-ups for vegetable supply chains including for collection, storage, and marketing.

Shrimp Production & Export

- Financial support for setting up a network of Nucleus

Breeding Centres for Shrimp Broodstocks will be provided.

- Financing for shrimp farming, processing and export will be facilitated through NABARD.

Conclusion

Productivity and resilience in agriculture is first among the nine priority areas announced in the Union Budget. While announcing the MSP for all major crops Finance Minister termed 'Annadata' (Farmer) as one of four major castes which need to be focused upon.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. The share of agriculture sector in India's GDP growth has been increasing consistently over the past decade.
2. Within agriculture, crop production accounts for over 50% of the total production.

Which of the statements 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. Discuss the significance and contribution of the agriculture sector in India's growth trajectory towards \$10 trillion economy. [10 marks] [150 words]

LONG TERM CAPITAL GAINS TAX

Why in News: Lok Sabha passes Finance Bill, amends LTCG tax provision on immovable properties.

Key Details

With this amendment, individuals or Hindu Undivided Families (HUFs) who bought houses/immovable properties before July 23, 2024 has two option

1. To pay LTCG tax under the new scheme at the rate of 12.5% without indexation or
2. Claim the indexation benefit and pay 20% tax.

Option 1 (20% tax after Indexation)	Option 2 (12.5% tax)
• Purchase Price (in 2005): ₹10 lakhs • Sale Price (in 2023): ₹50 lakhs • Indexed Purchase Price (adjusted for inflation): ₹ 24 lakhs • Net LTCG: ₹50 lakhs - ₹24 lakhs = ₹26 lakhs • Tax: 20% of ₹26 lakhs = ₹5.2 lakhs • Note: Indexation can vary depend on the inflation	• Purchase Price (in 2005): ₹10 lakhs • Sale Price (in 2023): ₹50 lakhs • LTCG: ₹40 lakhs • Tax: 12.5% of ₹40 Lakhs = ₹5 lakhs

What is Capital Gain Tax?

- Any profit or gain that arises from the sale of a 'capital asset' is known as 'income from capital gains'. Such capital gains are taxable in the year in which the transfer of the capital asset takes place. This is called capital gains tax.
- There are two types of Capital Gains: Short-term capital gains(STCG) Long-term capital gains(LTCG).
- Depends on the type of capital asset; accordingly, it comes under short-term or long-term capital gain tax.
- For example, selling shares in the stock market with a gain before 1 year comes under short-term capital gain tax, and selling shares with a gain after 1 year comes under long-term capital gain tax. Similarly, selling immovable properties with a gain before 2 years comes under short-term capital gain tax and after 2 years comes under long-term capital gain tax.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Capital Gains Tax:

1. Capital gains are taxable in the year in which the transfer of the capital asset occurs.
2. Selling shares in the stock market with a gain after holding them for more than 1 year is considered a Short-Term Capital Gain (STCG).
3. Selling immovable properties with a gain after holding them for more than 2 years is considered a Long-Term Capital Gain (LTCG).

Which of the statements given above is/are correct?

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

Answer: b

THE NON-DEBT INSTRUMENT RULES

Why in News: Recently, the Government of India notified Foreign Exchange Management (Non-debt Instruments) (Fourth Amendment) Rules.

About Non-Debt Instrument

Non-debt instruments are financial assets that do not involve borrowing or debt obligations. Instead, they represent ownership or equity interests. They include:

- **Equity Shares:** Ownership stakes in a company.
- **Preference Shares:** Equity with fixed dividends and priority in asset distribution.
- **Convertible Debentures:** Debt that can be converted into equity.
- **Equity-linked Instruments:** Products tied to stock performance, like stock options.
- **Foreign Portfolio Investment (FPI):** Foreign investments in a country's financial markets.
- **Venture Capital:** Equity investments in startups.

Objective of the amendment

- The principal objective of the Amendment Rules is to simplify cross-border equity share swaps and provide for the issue/transfer of equity instruments of Indian companies in exchange for the equity instruments of foreign companies.
- Other changes under the purview of the Amendment Rules include amending the definitions of 'start-ups' and 'control' to align them with the definitions under other laws, and permitting 100% FDI through the automatic route in white label ATM operations.

Key Changes

- **Facilitation of Swap of Equity Instruments and Equity Capital:** This provision allows for the exchange of equity instruments between an Indian company and a foreign entity in compliance with the rules prescribed by the Central Government and the Reserve Bank of India.
- **Standardized the definitions:** The definition of 'control' has been standardized to align it with the definition under the Companies Act, 2013, and the definition of 'startup company' has been harmonized with the definition mentioned in the notification issued by the Department for Promotion of Industry and Internal Trade.

- **Facilitation of FDI in White Label ATMs:** The Amendment Rules permit 100% FDI in White Label ATM Operations under the automatic route to boost financial inclusion nationwide. White Label ATMs are ATMs that are owned and operated by non-bank entities, such as Tata Communication, Hitachi, and India 1 Payments, which have been approved by the RBI.
- **Government Approval for Equity Transfers:** It has now been mandated that all transfers of equity instruments involving non-residents, whether buying, selling, or swapping equity, must follow the prescribed approval procedures, whenever government approval is applicable.
- **Government Approval for Foreign Portfolio Investment:** The Amendment Rules provide that aggregate foreign portfolio investment (FPI) up to the sectoral cap will not require government approval or compliance with sectoral conditions, given that such investment does not result in transfer of ownership or control. Previously, government approval was required, and sectoral conditions applied if the aggregate FPI was up to 49% of the paid-up capital or the sectoral cap, whichever was lower.

Relevance of the Amendment

- This will facilitate the global expansion of Indian companies through mergers, acquisitions, and other strategic initiatives, enabling them to reach new markets and grow their presence worldwide.
- The Amendment Rules work towards clarifying the NDI Rules, rationalising provisions, and simplifying investments.
- Allowing the exchange of equity instruments between Indian and foreign entities promotes investment flexibility and fosters international business relationships.
- Mandating government approval for all equity transfers involving non-residents enhances regulatory oversight and ensures compliance with foreign investment norms.
- Further liberalisation may however be necessary as the OI Rules permit investment by resident individuals in foreign entities through secondary share swaps in the event of mergers, demergers, amalgamations and liquidation.
- Removing the need for government approval up to the sectoral cap for FPI (without affecting ownership or control) attracts more foreign investment, improves market liquidity, and supports economic growth.
- Aligning the definitions of 'control' and 'startup company' with existing regulations ensures consistency and reduces regulatory ambiguities, making compliance easier for businesses.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following:

1. Equity Shares

2. Foreign Portfolio Investment (FPI)
3. Convertible Debentures

How many of the above are non-debt financial instruments?

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

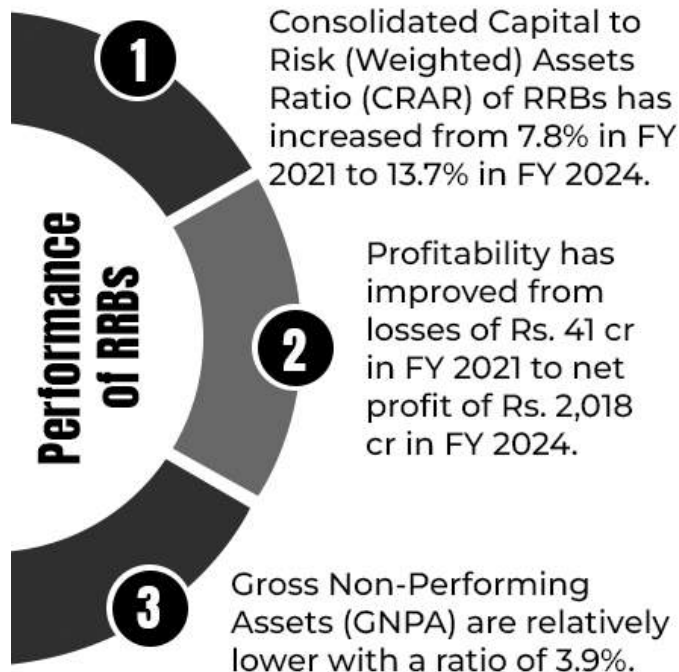
Answer: c

REGIONAL RURAL BANKS

Why in News: Union Finance Minister reviewed performance of nine Regional Rural Banks (RRBs) of Gujarat, Maharashtra, Madhya Pradesh, Chhattisgarh and Rajasthan.

Key Details

- Regular review of RRBs started in 2022.
- The review meeting focused on business performance, upgrading digital technology services, fostering business growth in MSME clusters, and deepening of financial inclusion in rural areas.
- Given the crucial role of RRBs in supporting the rural economy, the Union Finance Minister urged RRBs to generate awareness of Government schemes, especially in aspirational districts.
- The Union Finance Minister noted the natural potential of PM Surya Ghar Muft Bijli Yojana scheme in states of Gujarat and Rajasthan and urged RRBs to generate awareness and provide credit under the scheme.
- Potential of One District One Product (ODOP) programme was also highlighted to increase credit penetration by RRBs.
- RRBs were directed to identify potential trades under PM Vishwakarma scheme in their areas of operation to provide credit.
- RRBs were directed to increase their share in ground level agriculture credit disbursement and achieve the stated objectives of Priority Sector Lending.
- The Union Finance Minister directed RRBs to leverage their healthy CASA ratio to disseminate more credit.
- The Finance Minister directed RRBs to become more customer friendly and leverage its local connect to further improve performance.
- The Sponsor Banks have a significant role in these endeavours by providing technical assistance, sharing best practices, and ensuring that RRBs have access to the resources they need to succeed.



About Regional Rural Banks (RRBs)

- Regional Rural Banks were established under the provisions of an Ordinance passed on 26 September 1975 and the RRB Act 1987 to provide sufficient banking and credit facility for agriculture and other rural sectors.
- Regional Rural Banks (RRB) are Indian Scheduled Commercial Banks operating at the regional level in different states of India.
- They have been created with a view of serving primarily the rural areas of India with basic banking and financial services. However, RRBs may have branches set up for urban operations and their area of operation may include urban area too.
- It is mandatory for RRBs to seek prior approval/ licence from Rural Planning and Credit Department (RPCD) of RBI before opening of new branches/offices.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Regional Rural Banks (RRBs):

1. Regional Rural Banks (RRBs) are established under Regional Rural Banks Act, 1976.
2. These banks are exempted from the Priority Sector Lending norms of the RBI.
3. Government initiated regular review of RRBs in 2020.

How many of the above statements are correct?

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

Answer: a (1 only)

THE BANKING LAWS (AMENDMENT) BILL, 2024

Why in News: The Banking Laws (Amendment) Bill, 2024 was introduced in Lok Sabha on August 9, 2024.

Key Details of the Bill

- **Aim**
 - The bill aims to streamline banking operations and align them with contemporary financial practices, reflecting the government's commitment to improving the efficiency and effectiveness of banking regulations.
- **The Bill amends the following Acts:**
 - Reserve Bank of India (RBI) Act, 1934
 - Banking Regulation Act, 1949
 - State Bank of India Act, 1955
 - Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970
 - Banking Companies (Acquisition and Transfer of Undertakings) Act, 1980
- **Definition of fortnight for cash reserves**
 - The bill defines the definition of fortnight to the period from: (i) first day to fifteenth day of each month, or (ii) sixteenth day to the last day of each month.
- **Tenure of directors of co-operative banks**
 - The Banking Regulation Act prohibits the director of a bank (except its chairman or whole-time director) to hold office for more than eight years consecutively. The Bill seeks to increase this period to 10 years for co-operative banks.
- **Prohibition on common directors in case of co-operative banks**
 - The Banking Regulation Act prohibits a director on a bank's board to serve on the board of another bank. This does not apply to directors appointed by RBI.
 - The Bill extends this exemption to the director of a central co-operative bank. This exemption will apply where he is elected to the board of a state cooperative bank in which he is a member.
- **Substantial interest in a company**
 - Under the Banking Regulation Act, substantial interest in a company refers to holding shares of over five lakh rupees or 10% of the paid-up capital of the company, whichever is less. The Bill amends this to increase the threshold to two crore rupees.
- **Nomination**
 - The Bill allows the appointment of up to four nominees for the purpose of accessing the deposit, articles, or locker in case of death of the person who nominated him/her.
 - For deposits, such nominees can be appointed either

successively or simultaneously while for other purposes they can be appointed successively.

- **Settlement of unclaimed amounts**
 - The Bill widens the ambit of the funds that can be transferred to the Investor Education and Protection Fund (IEPF). These include:
 - Shares for which dividend has not been paid or claimed for seven consecutive years.
 - Any interest or redemption amount for bonds which is unpaid/ unclaimed for seven years.
 - Any person whose shares or unclaimed/ unpaid money is transferred to IEPF can claim the transfer or refund.
- **Remuneration of auditors**
 - At present, the remuneration paid to the auditors of banks is fixed by the RBI in consultation with the central government. The Bill empowers banks to decide the remuneration of their auditors.

EXPECTED QUESTION FOR UPSC CSE

Prelims Question

Q. Consider the following Acts:

1. Reserve Bank of India (RBI) Act, 1934
2. Banking Regulation Act, 1949
3. State Bank of India Act, 1955

The Banking Laws (Amendment) Bill, 2024 seeks to amend which of the above Acts?

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

Answer: d

REVISED NPAS NORMS FOR COOPERATIVE BANKS

Why in News: Reserve Bank of India has recently revised NPAs norms for Cooperative Banks in India

Key Details

- RBI had observed that
 - There was variation in treatment of provisions for non-performing assets (NPAs) across cooperative banks.
 - Under the provisions of the respective State Co-operative Societies Acts, or otherwise, several co-operative banks have created Bad and Doubtful Debt Reserve (BDDR). While in some cases, BDDR is created by recognising an expense in the Profit and Loss (P&L) account, in other cases it is created through appropriations from net profits.

- Therefore to bring uniformity in the treatment of BDDR for prudential purposes across all the cooperative banks, RBI has revised NPAs norms.
- These revised norms will be applicable to Urban Co-operative Banks, State Cooperative Banks and Central Co-operative Banks and come into force with immediate effect.

Key Guidelines

- **Expense Recognition:** Starting from the financial year 2024-25, all provisions for NPAs must be recognized as an expense in the Profit & Loss (P&L) account during the accounting period in which they are identified.
- **Regulatory Capital:** Provisions for regulatory capital will continue to be guided by the existing norms for capital adequacy.
- **Reallocation of Provisions:**
 - Banks may have created provisions required as per IRACP (Income Recognition, Asset Classification and Provisioning) by setting aside funds from the net profits instead of recording it as an expense in their Profit and Loss (P&L) account. The amounts set aside in this way by March 31, 2024, need to be identified and quantified.
 - Banks should directly set aside funds from their Profit and Loss (P&L) account or General Reserves to cover bad loans (NPAs) by March 31, 2025. These provisions can then be subtracted from the Gross NPAs to calculate the net NPAs.
 - Amount of balances in BDDR, which are not required for provisions, can be moved to General Reserves or Balance in P&L Account.
- **Handling Unnecessary Balances:** After following the above mentioned steps, the balances in the BDDR can be reckoned as Tier 1 capital. However, balance in the BDDR should not be reduced from Gross NPAs to arrive at Net NPAs

Conclusion

The new norms, which take effect immediately, include a one-time transition measure to ease the shift to the new accounting standards. These norms are expected to enhance transparency and uniformity in how NPAs are treated across different cooperative banking institutions.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. NPA norms guidelines for Cooperative banks are decided by?
- (a) Reserve Bank of India
- (b) Ministry of Cooperatives

(c) Ministry of Finance

(d) None of the above

Answer: a

BIO-BITUMEN MIXING POLICY

Why in News: Recently, the Government of India has allowed up to 35% of bio-bitumen (lignin) mixing in petroleum-based bitumen.

Key Details

- The government of India has allowed mixing of lignin, bio-bitumen to save foreign exchange outflows as a large part of which is imported from other countries.
 - The bio-bitumen is produced by heating the organic waste to around 500°C in the absence of oxygen. This process, known as pyrolysis.
 - Bio-oil obtained from the pyrolysis of wood materials is a complex mixture of water, soluble organic compounds, and insoluble organic compounds.
- Bitumen is a black substance produced through the distillation of crude oil and is widely used for making roads and roofs.
- In India, 90% of roads are using bituminous layers.
 - Bitumen consumption in 2023-24 was 88 lakh tonnes.
 - In 2024-25 it is expected to be 100 lakh tonnes. 50% of the bitumen is imported and annual import cost is ₹25,000-30,000 crore.
- Central Road Research Institute (CRRI) and the Indian Institute of Petroleum, Dehradun, had developed bio-bitumen from paddy straw.
- Indian Oil Corporation has a project in Panipat for making one lakh litres of ethanol per day from rice straw apart from 150 tonnes of bio-bitumen per day, and 88,000 tonnes per year of bio-aviation fuel.
- Currently, there are 450 projects are in Haryana, Punjab and Western Uttar Pradesh where biomass (parali) is getting converted into bio-CNG, and now getting lignin.

Benefits of Bio-Bitumen

- It will save government of India's foreign exchange resulting reducing trade deficit thus improving current account balance.
 - The cost of petroleum-based bitumen is ₹50 per kg while the cost of bio-bitumen from biomass (rice straw) is ₹40 per kg.
- It will create opportunity for MSMEs/Farmers to generate revenue and provide employment.
- It is more environmentally friendly than traditional asphalt as it doesn't contain any toxic chemicals, so it's safer for workers also.

- It helps to reduce the harmful long-term effects of heat islands that asphalt causes by absorbing more solar radiation than asphalt
- The Ministry of Road Transport & Highways has sanctioned two (02) research projects, one each to IIT Roorkee, and Central Road Research Institute (CRRI) New Delhi in collaboration with Indian Institute of Petroleum (IIP) Dehradun to evaluate bio-bitumen in the laboratory and to assess the long-term performance of pavement constructed with bio-bitumen.
- A test section has also been laid on Shamli-Muzaffarnagar Section of NH-709AD in November 2022 for performance monitoring for a period of three years to assess suitability of bio-bitumen in road construction. NHAI has also contemplated trial with bio-bitumen on Jorabat-Shillong section of NH-40.

Conclusion

India is looking to start large-scale production of bio-bitumen from biomass or agricultural waste, a move that would help reduce imports of the material used for asphaltting of roads while also addressing the persistent issue of stubble burning particularly in Northern India.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Indian Institute of Petroleum is located in ...

- (a) Dehradun (b) Lucknow
(c) Shimla (d) New Delhi

Answer: a

TANTALUM AS CRITICAL AND STRATEGIC MINERAL

Why in News: The Union Government of India has recently notified a list of 24 minerals including Tantalum, in the Part D of the First Schedule of the MMDR Act, 1957 as Critical and Strategic minerals.

Key Details

- The Geological Survey of India (GSI), an attached office of the Ministry of Mines, is giving special emphasis on exploration of strategic and critical minerals including Tantalum.
- From field season 2021-22 to 2024-25, GSI has taken up various projects on exploration for Tantalum and associated minerals in different parts of India.
- GSI has also established a Niobium-Tantalum resource of 16.42 million tonnes with average grade of 144ppm (Nb+Ta)₂O₅ at 100 ppm cut off in Rewat Hill block, Nagaur district, Rajasthan.
- In order to strengthen the supply chain of critical minerals including Tantalum, elimination of customs duty on

Tantalum ores & concentrates and unwrought Tantalum have been announced in Union Budget 2024-25.

About Tantalum

- Tantalum is a rare metal with the atomic number 73 — the number of protons found in one atom of the element. It's grey, heavy, very hard, and one of the most corrosion-resistant metals in use today.
- **High corrosion resistance:** It possesses high corrosion resistance because when exposed to air, it forms an oxide layer that is extremely difficult to remove, even when it interacts with strong and hot acid environments.
- **Refractory Metal:** It has an extremely high melting point of 2996 C, which is the range of other refractory metals exceeded only by tungsten and rhenium. However, one caution applies; due to its reaction with carbon, nitrogen, oxygen, and hydrogen, it may not be used in environments where these elements or their compounds are present as gases or volatile substances. Thus, it used at high temperature is limited to vacuum or inert gas environments.
- **Pure tantalum is ductile:** It can be stretched, pulled, or drawn into a thin wire or thread without breaking. Moreover, it is almost completely immune to chemical attack at temperatures below 150°C, and is attacked only by hydrofluoric acid, acidic solutions containing the fluoride ion, and free sulphur trioxide.
- **Major Producers:** It occurs mainly in the mineral columbite-tantalite, which also contains other metals including niobium. It is mined in many places including Democratic Republic of the Congo, Rwanda, Nigeria, Australia, Canada and Brazil. A lot of tantalum is obtained commercially as a by-product of tin extraction.
 - In India, tantalum is found in Gujarat, Arunachal Pradesh, Rajasthan, Chhattisgarh, Bihar and Karnataka. Recently, found the presence of tantalum in the Sutlej river sand in Punjab.

Uses of Tantalum

- **Electronic Sector:** The capacitors made from tantalum are capable of storing more electricity in smaller sizes without much leakage than any other type of capacitor. This makes them ideal for use in portable electronic devices such as smartphones, laptops, and digital cameras.
- **Substitute for Platinum:** As tantalum has a high melting point, it is frequently used as a substitute for platinum, which is more expensive.
- **Medical Sector:** Tantalum does not react with bodily fluids and is used to make surgical equipment and implants, like artificial joints.
- **Other Sectors:** The rare metal is also used to make components for chemical plants, nuclear power plants, aeroplanes and missiles.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Mineral 'Tantalum' can be used in production of:

1. Airplanes 2. Nuclear missiles
3. Surgical implants 4. Smartphones

Choose the correct answer using the code given below:

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

Answer: d

HOUSING FINANCE COMPANIES

Why in News: The Reserve Bank of India released revised rules for deposit-taking housing finance companies (HFCs).

Key Details

- The new rules will be applicable from January 1.
- They are aimed at bringing deposit-taking HFCs on par with non-banking financial companies (NBFCs).
- It mandates deposit-taking HFCs to maintain 15% liquid assets against public deposits held by them in a phased manner, up from 13% at present.
- Currently, HFCs accepting public deposits are subject to more relaxed prudential parameters on deposit acceptance as compared to NBFCs.

- The RBI has announced that public deposits accepted or renewed by HFCs must be repayable within a period of 12-60 months. Existing deposits with maturities longer than 60 months can be repaid according to their current repayment schedule.
- Regulations for NBFCs with regard to branches and appointment of agents to collect deposits will also apply to deposit-taking HFCs.
- To manage their underlying exposures, the RBI has now authorised HFCs to participate in currency futures exchanges.

About Housing Finance Companies

1

Housing Finance Companies, or HFCs, are entities that are governed by the Companies Act 1956.

2

These entities were initially regulated by the National Housing Bank (NHB). However, the regulatory power was later shifted to the RBI in 2019.

3

As of now, HFCs have managed to surpass banks in terms of loan disbursement volume. This is mostly due to their flexible lending practices.

INDIA'S FIRST 24/7 'GRAIN ATM'

Why in News?

- The United Nations World Food Programme (WFP) and the Odisha Government have launched India's first around-the-clock grain dispensing machine, or 'Grain ATM,' in the state capital Bhubaneswar.

Key Details

With this machine, also known as Annapurti (fulfiller of food), Odisha becomes the first state to provide access to public distribution system beneficiaries 24 hours a day.

It can dispense up to 50 kilograms of grain in five minutes, reducing waiting time by 70%.

The technology behind the Annapurti, developed by WFP India, is a significant step towards improving food security and ensuring people receive full rations efficiently and accurately.

The Annapurti provides universal access: anyone with a public distribution system ration card valid in India, regardless of their state or union territory, can access their entitlement.

UN entities involved in this initiative

United Nations (UN)

World Food Programme

7 broad Reform Areas for Start ups

SDG-1: No Poverty

SDG-2: Zero Hunger

SDG-5: Gender Equality

SDG-10: Reduced Inequalities

SDG-15: Life on Land

SDG-17: Partnerships for the Goals

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. India's first Grain ATM has been launched in.

- (a) Raipur (b) Jaipur
(c) Bhubaneswar (d) Guwahati

Answer: c

THE DISASTER MANAGEMENT (AMENDMENT) BILL, 2024

Why in News: The Minister of State for Home has recently introduced the Disaster Management (Amendment) Bill, 2024 in Lok Sabha to amend the Disaster Management Act 2005.

Objective of the Bill

To strengthen the efficient working of the National Disaster Management Authority and the State Disaster Management Authorities.

To bring more clarity and convergence in the roles of authorities and committees working in the field of disaster management.

To empower the authorities to prepare the disaster plan at the national level and state level instead of the National Executive Committee and the State Executive Committee.

Provisions for the constitution of Urban Disaster Management Authority for state capital and large cities having municipal corporations.

Provisions for the constitution of the State Disaster Response Force by the state government.

Main Features of the Amendment Bill

- **Shifting Responsibility for Disaster Management Plans to NDMA and SDMA:** The Bill provides that National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA) will prepare disaster management plans. Earlier this function was performed by a National Executive Committee at the union level and a State Executive Committee at the state level.
- **Enhanced Authority of NDMA to Assess Emerging Disaster Risks:** The Bill empowers the NDMA to take stock of the entire range of disaster risks in the country periodically, including emerging disaster risks, which include “risks of those disasters that may not have taken place, but may occur in future due to extreme climate events and other factors.”
- **Additional key functions for NDMA & SDMA:** The Bill adds certain functions for these authorities at their respective levels. These include:
 - Taking periodic stock of disaster risks, including emerging risks from extreme climate events.
 - Providing technical assistance to authorities below them.
 - Recommending guidelines for minimum standards of relief.
 - Preparing national and state disaster databases, respectively.
 - Functions of NDMA will also include: assessing disaster preparedness of states, and undertaking post-disaster audit of preparedness and response.
 - **Formation of Disaster Database** will include following information:
 - ◆ The type and severity of disaster risks
 - ◆ Allocation of funds and expenditure
 - ◆ Disaster preparedness and mitigation plans
- **Mandatory Establishment of State Disaster Response Forces (SDRFs):** It will be mandatory for every state to raise and maintain an SDRF. Although most states have raised their disaster relief forces on the lines of NDRF over the years, an SDRF is not mandated in the 2005 Act.
- **Establishment of a new body: Urban Disaster Management Authorities:** The Bill empowers the state government to constitute a separate Urban Disaster Management Authority for state capitals and cities with a municipal corporation except the union territories of Delhi and Chandigarh.
 - It will prepare and implement the disaster management plan for the area under it.
 - The Urban Authority will comprise the Municipal Commissioner as the chairperson, the District Collector as the vice chairperson, and other members specified by the state government.
- **Statutory status to existing committees:** The Bill provides statutory status to existing bodies such as the National Crisis Management Committee (NCMC) and the High Level Committee (HLC).
 - The NCMC will function as the nodal body for dealing with major disasters with serious or national ramifications.
 - The HLC will provide financial assistance to state governments during disasters. It will approve financial assistance from the National Disaster Mitigation Fund.
 - The Cabinet Secretary will serve as the chairperson of NCMC.

- Minister of the department with administrative control over disaster management will serve as chairperson of the HLC.
- **Compensations:** The Bill proposes that the NDMA should recommend guidelines for minimum standards of relief to be provided to people affected by disasters. This includes a recommendation on compensation amounts in case of loss of lives, damage to homes and property, and loss of livelihoods.
- **Penalty:** The Bill seeks to empower the Central and State governments to direct any person to take any action or refrain from taking any action for reducing the impact of a disaster and to impose a penalty not exceeding ₹10,000.
- **Clarification about the definition of disasters:** The Bill seeks to include an important clarification about the definition of disasters.

Limitations

- Currently the Home Ministry is the nodal ministry for the NDMA. Considering its growing role and importance, it has been argued that NDMA be given more powers and elevated to the status of a government department, if not a full-fledged ministry in itself.
- The NDMA does not have any administrative or financial powers. Routing every small decision through the Home Ministry is an inefficient and time-consuming process.
- The NDMA body is also severely short-staffed at the top, with just three members functioning. It used to once have six to seven members, each in charge of a specific type of disaster.
- Many opposition members raised concern over the Bill as it creates several authorities and also encroaches upon the functions of the State Governments.

Conclusion

India is vulnerable, in varying degrees, to a large number of natural as well as man-made disasters. In the last 10 years between 2014 to 2024, a total budget of ₹2 lakh crore was allocated to SDRFs and NDRF for disaster relief. Moreover, the best practices from around the world have been put in place in India to deal with disasters.

Role of technology in Disaster Management and Risk Reduction

Earthquake-

Pre- Disaster Phase (Preparation and Mitigation)	Post- Disaster Phase (Response and Recovery)
• Earthquakes are currently more unpredictable than other naturally occurring disasters. • Earthquake early warning systems use seismographs to detect and alert people before the shaking starts. During an earthquake, ground motion is recorded using a seismograph. • For example- Japan's earthquake alert system.	• Sensors monitor the condition of infrastructure like bridges and buildings to detect vulnerabilities and prevent failures. Advances in construction materials and techniques improve the resilience of structures to withstand disasters. • Example- Earthquake resistant building designs in China. • Technology can also help in confirming the whereabouts and safety of residents, operating evacuation process, transporting and managing relief goods.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following will function as a nodal body for dealing with major disasters with serious and national ramifications, according to the Disaster Management (Amendment) Bill, 2024?
- (a) National Disaster Management Authority
 - (b) State Disaster Management Authority
 - (c) National Crisis Management Committee
 - (d) High Level Committee

Answer: c

Descriptive Question

- Q. Discuss the key provisions of the Disaster Management (Amendment) Bill, 2024 and evaluate its effectiveness in addressing the challenges of disaster management in India. [15 marks] [250 words]

TECHNOLOGY DRIVEN DISASTER MANAGEMENT

Why in News: The United Nations Development Program has recently emphasized innovation in disaster management by leveraging technology to save more lives.

Key Details

- Between 1900 and 2019 the number of disaster around the world has increased from 39 incidents to 396. (Institute for Economics and Peace).
- The resulting cost of addressing damage caused by natural disasters has risen from US\$50 billion per year in the 1980s to US\$ 200 billion per year in the last decade.
- However, according to the World Meteorological Organization, the deaths from climate and weather-related disasters decreased almost 3-fold from 1970 to 2019 but we need to build even more resilience and use modern technology to ensure this progress doesn't reverse.

Tropical Cyclones-

Pre- Disaster Phase (Preparation and Mitigation)	Post- Disaster Phase (Response and Recovery)
- A cyclone cannot be prevented, but can be predicted, mitigated and responded well by using technology to reduce vulnerability. - Advanced meteorological tools and satellite systems help predict severe weather events like cyclones. - Utilizing technology, forecasting instruments, and observational techniques is important for anticipating tropical cyclones. - Example- Bangladesh cyclone warning system.	- Data analysis Centers using blockchain technology for post cyclonic response to provide relief to the victims. - Recent development of AI technologies would enable disaster managers to analyze those recorded data and create an alert. - An AI platform which can detect water rise from social media posts has already been developed

Floods

Pre- Disaster Phase (Preparation and Mitigation)	Post- Disaster Phase (Response and Recovery)
- Geographic Information Systems (GIS) can help to map disaster-prone areas, analyze risks, and plan evacuation routes. - Sensor network systems can be used to monitor activity in roads and bridges, offer constant data about the integrity of the infrastructure in question as well as surrounding factors that may have an impact on it, including rising water levels related to floods. - Use of communication services like SMS has been proven effective in disaster alertness.	- The GIS based Digital Elevation Model (DEM) is a three-dimensional representation of the terrain's surface that shows the extent of flooding and its depth. - Use of remote sensing technology for flood management - For examples, - European flood awareness system. - India's flood management with remote sensing was used during Kerala flood in 2018. - Further, use of drones or unmanned aerial vehicles (UAVs) can be effective for post flood surveys.

Landslides

Pre- Disaster Phase (Preparation and Mitigation)	Post- Disaster Phase (Response and Recovery)
Technology can play an indicative role in landslide prone areas. For example, - Finder is a disaster management tool of NASA widely used during landslides - Lidar technology in landslide monitoring.	- First responders can be kept out of the direct line of a disaster, such a landslides, by employing GPS tracking. Cars equipped with GPS tracking systems can display which highways and roads are safe to travel on and which have been compromised. - Further, Artificial intelligence (AI) and robotics have transformative potential in disaster management, offering solutions that enhance response efficiency, safety, and effectiveness. For example, - Technology played an important role during the Silkyara-Barkot tunnel rescue mission in Uttarkashi district of Uttarakhand where 41 workers were trapped inside the tunnel and were rescued with the help of technology. - Robotics was used for supplying essentials and to monitor the well-being of the workers trapped inside the tunnel.

Pre- Disaster Phase (Preparation and Mitigation)	Post- Disaster Phase (Response and Recovery)
Satellites and drones provide real-time imagery for assessing damage, tracking wildfires.	Use of unmanned aerial vehicles(UAVs) can be effective for spraying fire retardants and initiating artificial rains.

India's Technological Integration for Disaster Management:

- **National Disaster Management Service (NDMS):** NDMS plan involves using satellite technology, specifically developing Very Small Aperture Terminals (VSATs) to connect 120 locations. NDMA has initiated this project to enhance telecommunication infrastructure for the State Disaster Management Authority (SDMA) and selected District Disaster Management Authorities (DDMAs). This initiative is part of the information and communication technology (ICT) services aimed at supporting the Ministry of Home Affairs (MHA), NDMA, National Disaster Response Force (NDRF), and SDMA in making informed decisions during disasters.
- **SATARK Platform of Odisha-** System for Assessing, Tracking, and Alerting Disaster Risk Information based on Dynamic Risk Knowledge (SATARK) is a one-stop risk management system for automated assessment of risks and evaluation and dissemination of alerts and resource management actions, informed by climate data at different timescales.
 - SATARK, integrated into operations of Odisha State Disaster Management Authority (OSDMA) generates impact-based forecasting and assists disaster managers to take forecast-based early actions.
- **India's satellite programs** like Indian National Satellite System (INSAT) and Indian Remote Sensing (IRS) Satellites are a series of satellites designed for earth observation and resource management, including disaster monitoring.
- **Crisis Management platform of Kerala's** IT mission
- **TN SMART-** WEB based GIS systems by Tamil Nadu in partnership with ISRO.

Conclusion

Overall, technology enhances the efficiency and effectiveness of disaster management and risk reduction efforts, helping communities to better prepare for, respond to, and recover from disasters.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. In recent times many countries are using the tool 'Finder' to assess land prone areas. It is developed by?

- (a) ISRO (b) NASA
(c) C-DAC (d) IIT Madras

Answer: b

Descriptive Question

Q. Technology can play an efficient role in disaster management and risk reduction in both pre and post disaster phases. Explain with examples. Also mention India's technological integration for disaster management. [15 marks] [250 words]

THE WESTERN GHATS ECO-SENSITIVE AREA NOTIFICATION

Why in News: The National Green Tribunal has recently directed the Ministry of Environment, Forest and Climate Change (MoEF&CC) to fix the timeline to finalize the Western Ghat eco-sensitive area ESA notification.

Key Details

- MoEF&CC had issued the draft notification in 2022 but it is yet to be finalised.
- As per the recent draft, the Centre has notified an area of 56,825 sq km spread across Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu, classifying 37% of Western Ghats region under ESA.
 - The ESAs proposed across these states are spread over 449 sq km in Gujarat, Maharashtra (17,340 sq km), Goa (1,461 sq km), Karnataka (20,668 sq km), Tamil Nadu (6,914 sq km), and Kerala (9,993.7 sq km).
- The Central Government has provided a window of 60 days to submit objections and suggestions on the draft.
- The draft notification declaring ESA over Western Ghats was first issued in March 2014, based on suggestions by the High-Level Working Group (HLWG) under Madhav Gadgil. Which was formed by the Centre in 2012.

Why is the Government Hesitating to issue the Guidelines?

- Planters/Farmers oppose ESA draft notification.
 - It is being argued that declaration of the ESA in Western Ghat will lead to relocation of thousands of villagers living in the region.
 - However, there seems to be no basis for such apprehensions since the report categorically mentions that people will not be displaced.
- It will affect work on villagers' individual tracts of land and estates, while also affecting those who have applied for grants of land for cultivation and residential purposes.
- Lack of political will and no politician wants to disturb their vote bank.
 - Elected representatives have also been accused of safeguarding their vested interests in the region by

misleading people under the pretext of protecting their rights.

- They have been stoking fears through misinformation, that people living in the Western Ghats region will lose their land and livelihood or be subjected to untold restrictions.
- Many local communities also felt that there was no adequate consultation with people who would be affected. This led to mistrust and opposition.

Why it is important to declare Western Ghats eco sensitive zone?

- The Western Ghat is recognized as one of the world's eight 'hottest hotspots' of biological diversity along with Sri Lanka.
 - A chain of mountains running parallel to India's western coast covering an area of around 140,000 square kilometres in a 1,500 km long stretch it is interrupted only by the 30 km Palakkad Gap.
- The area is the second most landslide-prone region of the country after the Himalayas.

- Absence of eco-sensitive zone cover for the Western Ghats has resulted in the continuation of environmentally hazardous human activities
 - For example, massive deforestation for mining and construction over the years leading to loosening of soil and instability of the hills.
- The latest Wayanad landslide disaster in Kerala serves as yet another reminder from nature to preserve ecological balance.

What are Ecologically Sensitive Areas?

- As per the National Wildlife Action Plan (2002-2016), Eco-Sensitive Areas (ESAs) are regions located within 10 km of protected areas such as national parks and wildlife sanctuaries. ESAs are notified and regulated by the MoEFCC under the Environment Protection Act, 1986.
- The purpose of declaring ESAs is to create "shock absorbers" to prevent ecological damage caused by developmental activities in such areas and protect them by minimising the negative impact on the ecosystem.
- They also act as a transition zone from areas that require high protection to those that need lesser protection.

Activities restricted under ESA in Western Ghats

Prohibited	• Complete ban on mining, quarrying, and sand mining • 'Red' category industries • New thermal power projects • Construction projects with 20,000 sq. m and above • All new and expansion townships, development projects with 50 ha / 1.5 lakh sq. m of built-up area
Regulated	• Hydropower projects • 'Orange/White' category industries
Unrestricted	• Change in ownership of property • All existing healthcare establishments • No displacement or dislocation of local people • Practicing of agriculture and plantation activity

Gadgil Committee and Kasturirangan Committee

- The Gadgil committee recommended that 137,000 sq km—80%—of the Western Ghats should be notified as ESA.
 - It sub-categorised this protected region into three zones and provided permissible activities for each zone.
- Kasturirangan committee was established to review the report published by Gadgil committee. Gadgil committee report created apprehensions that areas under plantations and farming would be subjected to government control.
- Kasturirangan committee made major changes to the Gadgil report. It reduced the area of ESA to 59,940 sq km.
 - It used satellite imagery to find that 60% of the Western Ghats was under plantation, agriculture or human settlements.
 - These were classified as cultural landscape as it would be difficult to reverse changed land use. So, the effort was to protect what remained as natural landscape.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. 'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to:

- (a) Constitutional reforms
- (b) Ganga Action Plan
- (c) Linking of rivers
- (d) Protection of Western Ghats

Answer: d

Descriptive Question

- Q. Explain the concept of Eco-Sensitive Zones (ESAs) and their role in environmental conservation with special reference to Western ghats. Also explain the reasons behind its inadequate implementation and suggest measures for the same. [10 marks] [150 words]

SEA LEVEL RISE

Why in News: Recently a report titled 'Sea level rise scenarios and inundation maps for selected Indian coastal cities' was published by a Bengaluru-based think tank, the Center for Study of Science, Technology and Policy.

Report's Key Findings

- The report presents information on changes in sea levels under historical and future climate scenarios for 15 Indian coastal cities and towns.
- Mumbai has witnessed the maximum rise in sea levels (4.44 cm) among 15 Indian coastal cities between 1987 to 2021.
- Mumbai is followed by Haldia (2.726 cm), Visakhapatnam (2.381 cm), Kochi (2.213 cm), Paradip (0.717cm), and Chennai (0.679 cm).
- By 2100, sea levels would rise by 76.2 cm in Mumbai, 75.5 cm in Panaji, 75.3 cm in Udupi, 75.2 cm in Mangalore, 75.1 cm in Kozhikode, 74.9 cm in Kochi, 74.7 cm in Thiruvananthapuram, and 74.7 cm in Kanniyakumari even under a medium-emission scenario.
- The study highlights that more than 10% of the land in Mumbai, Yanam, and Thoothukudi, 5%–10% in Panaji and Chennai, and 1%–5% in Kochi, Mangalore, Visakhapatnam, Haldia, Udupi, Paradip, and Puri would be submerged due to rise in sea levels by 2040.
- As per the report, key sectors that will be impacted include water, agriculture, forest and biodiversity, and health. The beaches, backwaters, and mangrove forests are particularly at risk, impacting biodiversity and tourism.

Factors Responsible For Sea Level Rises

- Sea level rise is the gradual increase in the average height of the world's oceans and seas. It is determined by the rise in the water level in relation to the land.
- The expansion of seawater is caused by heat and the influx of water from ice melting, as explained below:
 - **Ocean thermal expansion:** Oceans absorb more than 90% of the heat trapped by accumulating greenhouse gases (GHGs)—the primary cause of Earth's warming. As a result, ocean temperatures increase and the water expands, resulting in SLR.

- **Ice Melting:** The melting of ice from glaciers, ice caps, and ice sheets in Greenland and Antarctica is another cause of SLR. Substantial melting of land-based ice blocks and glaciers due to rising global temperatures adds water to the oceans, thereby increasing global sea levels.

Impact of Sea Level Rises

Increased Coastal Erosion	As the sea level rises, more frequent and extreme coastal floods and storm surges occur, which increase coastal erosion. This, in turn, may cause the loss of beaches, coastal habitats, and even entire settlements.
Coastal Inundation and Flooding	Rising sea levels increase the risk of frequent and severe floods and inundation in low-lying coastal regions and islands.
Freshwater Salinisation	Freshwater sources, such as subterranean aquifers and river deltas, are susceptible to salinisation due to SLR. This infiltration may contaminate drinking water sources and reduce agricultural output.
Coastal Community Displacement	Low-lying coastal communities are at risk of land flooding due to SLR. The resulting displacement of such communities would necessitate the use of adaptation and relocation strategies.
Coastal Habitat Loss	Sea level rise is especially dangerous for coastal ecosystems, such as mangroves, salt marshes, and coral reefs. These habitats offer crucial nurseries, breeding grounds, and shelter from coastal erosion. The disappearance of such habitats due to SLR may adversely affect fisheries and biodiversity.
Infrastructure Vulnerability	Sea level rise puts coastal infrastructure, such as buildings, roads, airports, and ports, in danger. Higher water levels and more frequent flooding raise the risk of infrastructure disruption and damage, necessitating expensive repairs and modifications.
Impacts on the Economy	With industries such as tourism, fishing, and shipping, coastal regions contribute majorly to the world economy. These industries may be affected by SLR, which could result in financial losses and higher adaptation and infrastructure protection expenditures.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements regarding the impact of sea level rise (SLR) on Indian coastal cities is/are correct?
1. Mumbai has experienced the highest rise in sea levels among Indian coastal cities between 1987 to 2021.
 2. More than 10% of the land in Chennai and Kochi is projected to be submerged due to sea level rise by 2040.
 3. Rising sea levels lead to the salinisation of freshwater sources, affecting drinking water and agriculture.

Select the correct answer using the code given below:

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

Answer: b

Descriptive Question

Q. Sea level rise poses a significant threat to India's coastal cities and ecosystems. Discuss the key factors responsible for the rise in sea levels and its potential impacts on Indian coastal cities by 2100. What measures should be adopted to mitigate these impacts? [15 marks] [250 words]

INCREASE IN GLOBAL METHANE EMISSION

Why in News: A new study by international experts shows that global methane emissions have been rapidly increasing since 2006, with a sharp rise since 2020, and this trend is likely to continue.

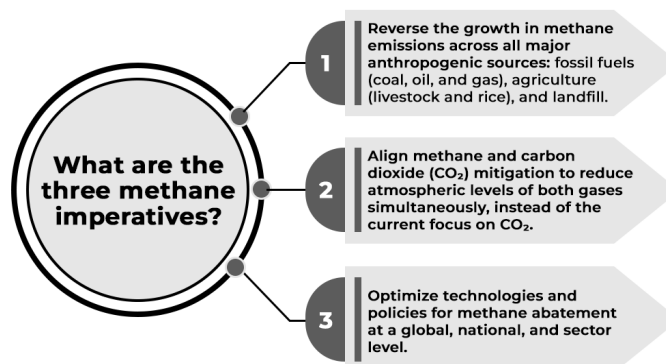
Key Findings

- One of the biggest causes of climate change is methane gas emissions, second only to carbon dioxide, and the gas also causes serious health problems. Most emissions come from the energy, agriculture and waste sectors.
- Methane emissions are responsible for half of the global heating already experienced, have been climbing significantly since around 2006.
- Methane has 80 times the warming power of CO₂ in the first 20 years after it reaches the atmosphere. This is the reason methane gas is more dangerous.
- Global methane emissions have typically been about 30m tons higher each year than during last decade, with annual records in methane emissions broken in 2021 and again in 2022. While there is no single clear reason for this, scientists point to a number of factors.
- Methane also contributes to the formation of ozone at ground level, increasing the risk of death through respiratory illnesses and cardiovascular diseases.
- CO₂ can linger in the atmosphere for hundreds or thousands of years, unless removed, methane is a far shorter-lived threat. If all methane emissions were cut immediately, 90% of accumulated methane would have left the atmosphere within 30 years, providing a swifter way to reduce global heating than focusing just on carbon dioxide
- Atmospheric methane (CH₄) occurs abundantly in nature as the primary component of natural gas. The majority of methane emissions -- around 60% -- are linked to human activity, while some 40% is from natural sources, mainly wetlands. Methane comes from
 - The drilling and processing of oil, gas and coal, with a boom in fracking causing a rash of new gas projects this century.
 - Methane leaks from energy infrastructure -- such as gas pipelines -- and from deliberate releases during maintenance.

- The gas is also emitted from livestock, primarily through the burps of cows, and increased animal agriculture, as well as to a lesser degree expanding rice production.
- The increasing release of methane from natural wetlands, triggered by a hotter climate, is now also contributing.
- Methane is produced by thawing permafrost. Discarded household waste also releases large quantities of methane when it decomposes, if left to rot in landfills.

Key Highlights of the Global Methane Tracker 2024

- Methane emissions from the energy sector remained near a record high in 2023.
- The overall emissions remain far too high to meet the world's climate goals.
- Large methane emissions events detected by satellites also rose by more than 50% in 2023 compared with 2022, with more than 5 Mt of methane emissions detected from major fossil fuel leaks around the world – including a major well blowout in Kazakhstan that went on for more than 200 days.
- The United States is the largest emitter of methane from oil and gas operations, closely followed by the Russia.
- Norway and the Netherlands have the lowest emissions intensities.



How can we reduce methane emissions?

- **Technological solutions** include capturing methane and using it for energy generation; minimizing leaks from fossil fuel operations by repairing infrastructure; improving the efficiency of gas flaring and eventually phasing it out; and inhibiting methane-producing microbes in cattle, through vaccines and feed supplements, as well as in treatment facilities for manure and other organic waste.
- **Systemic changes** include reducing livestock numbers through improved productivity and dietary shifts towards plant-based foods; reducing emissions from livestock; using rice cultivars with lower methane emissions; improving water and fertilizer management in rice cultivation; and diverting organic waste from landfills through recycling, composting, and reducing food loss and waste.

- **Policy measures** for methane abatement include emission reduction targets, enforceable regulations, and financial incentives such as subsidies and methane pricing.

Conclusion

A recent International Energy Agency (IEA), report estimates that rapid cuts in methane emissions linked to the fossil fuel sector could prevent up to 0.1 degrees Celsius of warming by mid-century. Moreover, a joint EU-US "Global Methane Pledge" was launched in 2021, aiming to reduce worldwide methane emissions by 30% by 2030, compared to 2020 levels.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements is/are correct regarding methane emissions and their impact on the environment?

1. Methane has 80 times the warming power of CO₂ in the first 20 years after it reaches the atmosphere.
2. Methane contributes to the formation of ozone at ground level, which increases the risk of respiratory and cardiovascular diseases.
3. CO₂ has a shorter lifespan in the atmosphere compared to methane.

Select the correct answer using the code given below:

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

Answer: a

Descriptive Question

Q. Discuss the impact of methane emissions on global warming. Propose solutions to manage and reduce these emissions. [10 marks] [150 words]

ATMOSPHERIC RIVERS

Why in News: Recently, the Scientists have warned that intensification and increased frequency of atmospheric rivers due to global warming is worsening extreme rainfall events and weather patterns.

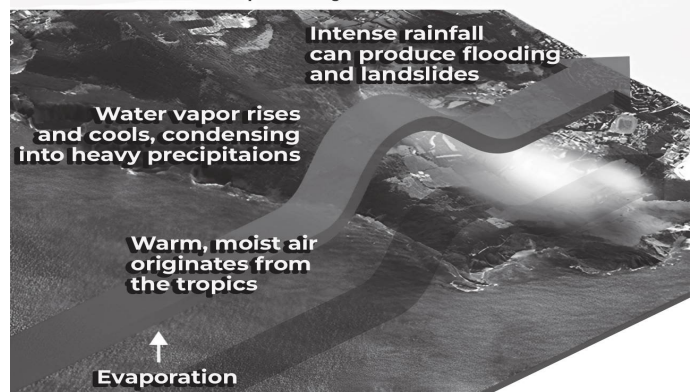
About Atmospheric Rivers

- An atmospheric river is a plume of deep tropical moisture that brings heavy rain and snow to a region. Like hurricanes, they're ranked from AR-1 to AR -5 (AR-5 the most intense) based on how much moisture they transport.
- They are also known as "flying rivers", these storms are huge, invisible ribbons of water vapour that are born in warm oceans as seawater evaporates.

- The water vapour forms a band or a column in the lower part of the atmosphere which moves from the tropics to the cooler latitudes and comes down as rain or snow, devastating enough to cause floods or deadly avalanches.
- These "rivers in the sky" carry some 90% of the total water vapour that moves across the Earth's mid-latitudes and, on an average, have about twice the regular flow of the Amazon, the world's largest river by the discharge volume of water.
- An average atmospheric river is about 2,000km (1,242 miles) long, 500km wide and nearly 3km deep - although they are now getting wider and longer, with some more than 5,000km long.

What are atmospheric rivers?

Long columns of water vapour travel thousands of miles and dump heavy rains



Required Conditions for Atmospheric Rivers to Form

- **Strong low-level winds** that act as a highway for water vapour to be transported across. The jet streams in the Northern and Southern hemispheres act as these highways, with speeds reaching as high as 442km/h (275mph).
- **High moisture levels**, which are a prerequisite for precipitation to occur.
- **Orographic life**, a phenomenon that occurs when an air mass moves from a low to a higher elevation as it moves over rising terrain, such as a mountain. As the air mass gains altitude, it quickly cools down, raising humidity in the air and eventually leading to the formation of clouds and, under the right conditions, precipitations.

Reasons Behind Formation of Atmospheric Rivers

- Global warming makes the Indian Ocean warm up faster, there can be a considerable increase in evaporation, which could lead to more severe ARs.
- More warming, more evaporation, and the capacity of the atmosphere to hold more moisture increase.
- Climate change has made monsoon rains more erratic, with massive rainfall in a short span of time followed by prolonged periods of dryness.

Impact of Atmospheric Rivers

- Disadvantages of this weather phenomenon include landslides, mudslides, and major flooding.
- Moreover, if there is not enough vegetation in the area – for example as a result of a forest fire – and the slope is steep enough, abundant precipitation can result in landslides and/or mudslides.
- Besides that there will be economic cost in terms of infrastructure damage, agricultural losses and environmental degradation.
- Atmospheric rivers can cause loss of life due to floods and landslides, displace communities, and require large-scale evacuations, with long-term social and economic consequences for affected populations.

Conclusion

Earth's atmosphere has warmed about 1.3 degrees Celsius (2.3 degrees Fahrenheit) since pre-industrial times, and researchers have already observed heavier rain in storms, hurricanes, daily precipitation — and now in atmospheric rivers. The atmospheric rivers produced about 11 and 15 percent more rain because of warming brought on by fossil fuel burning. If the same events were to take place in an even warmer world — as projected by the end of the 21st century — the researchers found rainfall quantities would have been 20 and 60 percent higher.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding atmospheric rivers (ARs) is/are correct?

1. Atmospheric rivers carry about 90% of the total water vapor that moves across the Earth's mid-latitudes.
2. The formation of atmospheric rivers requires high moisture levels and strong low-level winds that act as highways for water vapor transport.
3. Atmospheric rivers are typically confined to tropical regions and do not affect temperate zones.
4. Global warming contributes to the increased intensity and frequency of atmospheric rivers by enhancing evaporation and the atmosphere's capacity to hold moisture.

Select the correct answer using the code given below:

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

Answer: a

Descriptive Question

- Q. Atmospheric rivers (ARs) are becoming more intense and frequent due to global warming, leading to extreme weather events. Discuss the formation and characteristics of atmospheric rivers, and analyze their impact on India, particularly in terms of environmental and socio-economic consequences. [15 marks] [250 words]

GROUND-LEVEL OZONE POLLUTION

Why in News: In a recent study the Centre for Science and Environment (CSE) has revealed that the Ground-level ozone pollution is on the rise across India's major cities.

Key Details

- The duration of ozone exposure is concerning, lasting an average of 12-15 hours across most cities, the researchers found.
- Between April and July this year, Delhi-NCR recorded 176 days of ground-level ozone exceedances, the highest among the ten metropolitan areas studied.
- Ozone levels were elevated even at night, with Mumbai recording the most instances of night-time exceedances.
- High-end and green neighbourhoods, with lower levels of other pollutants, are ironically more susceptible to ozone build-up.
- Summer is the peak season for ozone but the problem persists year-round in many areas, particularly in sunnier southern cities.
- The report pointed out as particulate pollution is reduced, issues with nitrogen oxides (NOx) and ground-level ozone increase.
- Furthermore, ozone accumulates not only in metropolitan areas but also travels long distances, creating a regional pollutant that demands both local and regional action.

Sources of Ozone Pollution

- Ozone is not directly emitted from any source. It forms when nitrogen oxides (NOx), volatile organic compounds (VOCs), carbon monoxide (CO) and methane (CH₄) react in the presence of sunlight and high temperatures.
- This reaction is influenced by the relative concentrations of VOCs and NOx, creating what scientists refer to as "ozone isopleths."
- Vehicle exhaust, fossil fuel combustion, gasoline vapours, chemical solvents and natural sources release NOx and VOCs into the air - the essential ingredients for ozone formation. Other sources are power plants, industrial boilers, refineries, and chemical plants. Ozone pollution can even come from paints, cleaners, solvents, and motorized lawn equipment.

Consequences of Ozone Pollution

- These minuscule particles, less than 2.5 micrometres in diameter, can infiltrate our lungs, posing grave health risks.
- Those with respiratory conditions, asthma and chronic obstructive pulmonary disease — as well as children with premature lungs and older adults — are at serious risk. This can inflame and damage airways, make lungs susceptible to infection, aggravate asthma, emphysema and chronic bronchitis and increase the frequency of asthma attacks leading to increased hospitalisation.
- Ozone can damage crops, reducing yields and affecting food security. Ozone also cripples crop yields and harms food security.
- As this pollutant enters leaves through pores called stomata, it damages plant tissues, accelerates ageing, slows photosynthesis, stunts growth and eventually slashes crop yields.
- A study published in the American Geophysical Union's Journal highlighted that the present-day ozone-induced damage to wheat and rice in India is sufficient to feed roughly 35 per cent of the nation's poor.

Way Forward

- Air quality alerts could help reduce flare-ups of ozone.
- Local warnings could be issued to stop people from fueling their cars to avoid fuel evaporating to form some of the precursor gases for ozone.
- Similarly, industry could be asked to shift operations to the evening or even the night.
- A good monitoring and alert infrastructure exists in Delhi, but is still limited across the country as a whole. This needs to be expanded to enable such notifications.

Conclusion

Globally, there were 46% more ozone-attributable deaths in 2019 than in 2000, according to a study published in the Lancet. South Asia showed the highest increases in ozone exposure and ozone-attributable mortality rates. Moreover, a recent study by the University of Leeds suggested that by 2050, more than a million deaths in India could be linked to ozone exposure if emissions of ozone's constituents can't be reduced.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding ozone pollution:

1. Ozone is directly emitted from industrial sources and vehicles.
2. Ozone forms through a reaction involving nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the presence of sunlight.

3. Ozone pollution can harm human health, particularly affecting individuals with respiratory conditions.
4. Ozone has no impact on crop yields and food security.

How many of the above statements are correct?

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

Answer: b

Descriptive Question

Q. Analyze the impacts of rising ground-level ozone pollution in major Indian cities. How does ozone formation relate to emissions of nitrogen oxides and volatile organic compounds, and what strategies can be employed to address this issue effectively? [15 marks] [250 words]

GURU GHASIDAS TAMOR PINGLA TIGER RESERVE

Why in News: Recently, Chhattisgarh has approved a proposal to notify Guru Ghasidas Tamor Pingla Tiger Reserve (TR).

Key Details

- The Tamor Pingla Wildlife Sanctuary was identified as part of the Sarguja Jashpur Elephant Reserve in 2011. The Guru Ghasidas National Park used to be part of the Sanjay National Park in undivided Madhya Pradesh. Both were identified as reserve forests, and had been in line to be notified as Tiger Reserve since 2011.
- The new Reserve is located in the northern part of the state, bordering Madhya Pradesh and Jharkhand.
- The tiger population in Chhattisgarh fell from 46 in 2014 to 17 in 2022.
- Named Guru Ghasidas- Tamor Pingla Tiger Reserve — after integrating the regions of Guru Ghasidas National Park and Tamor Pingla Sanctuary located in the different districts, it will cover 2,829.387 sq.km.
- Currently, Chhattisgarh has three tiger reserves — Indravati in Bijapur district, Udanti-Sitanadi in Gariaband and Achanakmar in Mungeli.

Importance of Guru Ghasidas Tamor Pingla Tiger Reserve

- Guru Ghasidas National Park was the last known habitat of the Asiatic cheetah in the country.
- Turning Guru Ghasidas into a Tiger Reserve is important because it connects Jharkhand and Madhya Pradesh

and provides a corridor for tigers to move between the Bandhavgarh and Palamau Tiger Reserves.

- The vegetation of Guru Ghasidas National Park consist mainly of mixed deciduous forest with teak, sal and bamboo trees.
- The diverse vegetation of the region consists of a wide variety of mammal population. Tigers, Leopards, Chital, Nilgai, Chinkara, Jackals, Sambar, Four-horned Antelopes, Jungle Cat, Barking Deer, Porcupine, Monkey, Bison, Striped Hyena, Sloth Bear, Wild Dogs are some of the common species found in this region.
- It is also an ideal place to watch migratory birds.

How Tiger Reserve are notified?

Tiger Reserves are notified by State Governments as per provisions of Section 38V of the Wildlife (Protection) Act, 1972 on advice of the National Tiger Conservation Authority. The following steps are involved in the notification:

- (a) Proposal is obtained from the State.
- (b) In-principle approval is communicated from the National Tiger Conservation Authority, soliciting detailed proposals under section 38V of the Wildlife (Protection) Act, 1972.
- (c) National Tiger Conservation Authority recommends the proposal to the State after due diligence.
- (d) The State Government notifies the area as a Tiger Reserve.

Can tiger Reserve be altered and de-notified?

These processes are governed by Section 38W of the Wildlife (Protection) Act, 1972 whose provisions are as follows:

- **38 W (1):** "No alteration in the boundaries of a tiger reserve shall be made except on a recommendation of the Tiger Conservation Authority and the approval of the National Board for Wild Life".
- **38 W (2):** "No State Government shall de-notify a tiger reserve, except in public interest with the approval of the Tiger Conservation Authority and the National Board for Wild Life".

Core Area and Buffer Area of Tiger Reserve

- The core-buffer forest strategy is a technique used by wildlife experts to protect wildlife in tiger reserves by dividing the area into two parts: a core forest and a buffer forest.
- **Core Forest:** The core forest is the central part of the reserve and is considered a critical tiger habitat. These areas are like the heart and soul of the park and they are responsible for protecting and conserving the natural environment and all the creatures that call it home. They're like the most important conservation zone of the park, where nature reigns supreme.
- **Buffer Forest:** The buffer forest is a mixed land area that surrounds the core forest and acts as a protective shield for the wildlife. The buffer forest separates the core forest from the outside world and allows for limited human use, while the core forest should be free from all human use.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following tiger reserves

1. Indravati
2. Udanti -Sitanadi
3. Achanakmar

How many of the above tiger reserves are located in Madhya Pradesh?

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

Answer: d

NEW RAMSAR SITES NOTIFIED

Why in News: The Union Environment Minister has recently notified 3 wetlands to the list of Ramsar sites on the eve of Independence Day 2024.

Key Details

- India has increased its tally of Ramsar sites (Wetlands of International Importance) to **85** from existing 82 by designating three more wetlands as Ramsar Sites.
- With this addition, the area of Ramsar sites touched to 1358067.757 ha in the country. The three new sites included are **Nanjarayan Bird Sanctuary, Kazhuvelli Bird Sanctuary in Tamil Nadu** and **Tawa Reservoir in Madhya Pradesh**.
- India is one of the Contracting Parties to Ramsar Convention, signed in Ramsar, Iran, in 1971. India became a signatory to the convention on 1st February 1982.
- During 1982 to 2013, a total of 26 sites were added to the list of Ramsar sites, however, during 2014 to 2024, the country has added 59 new wetlands to the list of Ramsar sites.
- Currently, Tamil Nadu harbours maximum number of Ramsar Sites (18 sites) followed by Uttar Pradesh (10 sites).

Nanjarayan Bird Sanctuary

- The Nanjarayan lake a large shallow wetland situated along the north-eastern region of Uthukuli Taluk of Tiruppur District in Tamil Nadu.
- The wetlands in this region depend mainly on weather conditions, especially on heavy rain water flow from Nallar drainage.
- The lake got its name from the fact that it was repaired and restored by King Nanjarayan who was ruling the region many centuries ago.

- The site acts as feeding and nesting habitat for resident bird species, migratory birds use this lake as their feeding ground during the migratory season.
- The lake is announced as 17th bird sanctuary of state of Tamil Nadu owing to its rich avifaunal diversity.

Kazhuveli Bird Sanctuary

- It was declared as the 16th bird sanctuary in Tamil Nadu in the year 2021.
- It is a brackish shallow lake located on the Coromandel Coast in Villupuram district, North of Pondicherry.
- The lake is connected to the Bay of Bengal by the brackish Uppukalli creek and the Edayanthittu Estuary.
- Kazhuveli is one of the significant and biodiversity rich wetlands. The lake is one of the largest wetlands in peninsular India.
- The Kazhuveli Bird Sanctuary lies in the Central Asian Flyway and is an important stopover site for migratory species of birds.

Tawa Reservoir

- The Tawa Reservoir has been constructed at the confluence of the Tawa and Denwa rivers.
- River Malani, Sonbhadra, and Nagdwari are the major tributaries of Tawa reservoir.
- **Tawa River**, a left bank tributary originates from Mahadeo hills in Chhindwara district, flows through Betul district and joins river Narmada in Narmadapuram district.
 - It is the longest tributary of river Narmada (172 Km).
- The reservoir was built mainly for irrigation purpose. Later on it is also being used for power generation and aquaculture.
- The reservoir is located inside the Satpura Tiger Reserve and forms the western boundary of the Satpura National Park and Bori Wildlife Sanctuary.
 - It is the largest protected area in the state Madhya Pradesh.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following pairs

	Ramsar Sites	State
1.	Nanjarayan Bird Sanctuary	Tamil Nadu
2.	Kazhuveli Bird Sanctuary	Kerala
3.	Tawa Reservoir	Madhya Pradesh

How many of the above pairs are correct?

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

Answer: b

GLACIAL LAKE OUTBURST FLOODS

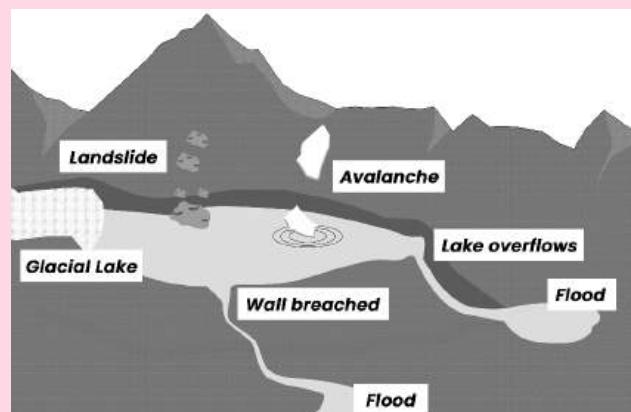
Why in News: Recently, the Government of India has decided to review the design of dams vulnerable to glacial lake outburst floods.

Key Details

- In October 2023, a glacial lake outburst flood in Sikkim led to the collapse of the Teesta III hydroelectric dam, killed more than 100 people, and affected thousands of others.
- Subsequent the Central Water Commission (CWC) has decided to review the design flood of all the existing and under construction dams vulnerable to Glacial Lake Outburst Floods (GLOFs) to ensure their adequate spillway capacity for a combination of Probable Maximum Flood/Standard Probable Flood and GLOF.
- GLOF Studies has been made mandatory for all new dams planned having Glacial Lakes in their catchments.
- The Ministry of Power has identified 47 dams, including 38 commissioned and nine under-construction dams, as potentially affected by GLOFs from glacial lakes in India.

What is Glacial Lake Outburst Flood

- These are instances of large lakes formed from the melting of glaciers, suddenly breaking free of their moraine — natural dams that are formed from rock, sediment and other debris
- Or in simple words it is a type of outburst flood caused by the failure of a dam containing a glacial lake.



Reasons Behind Glacial Lake Outburst Flood (GLOF)

- **Earthquake:** Seismic activities can destabilize the natural moraine or ice dams that hold the glacial lakes. An earthquake can cause these structures to collapse, leading to a sudden release of the lake's water, resulting in a Glacial Lake Outburst Flood (GLOF).
- **Avalanche:** An avalanche, especially one carrying a significant amount of ice and debris, can suddenly surge into a glacial lake, displacing large volumes of water. This sudden influx can cause the lake to overflow or the dam to breach, triggering a GLOF.

- **Volcanic Eruption:** In glaciated volcanic regions, an eruption can rapidly melt ice and snow, leading to the formation of a glacial lake. The intense heat can also destabilize the dam holding the lake, resulting in an outburst flood.
- **Excessive Precipitation:** Heavy rainfall or rapid snowmelt can lead to a significant rise in the water level of glacial lakes. If the natural dam (usually made of loose sediments, ice, or moraine) is unable to withstand the increased water pressure, it can break, causing a sudden release of water downstream. This excessive water flow can result in a GLOF, leading to catastrophic flooding.
- **Climate Change:**
 - **Melting of Glaciers:** Due to global warming, glaciers are retreating at an accelerated rate. As glaciers melt, they often leave behind depressions that fill with water, forming glacial lakes. These newly formed lakes are often dammed by unstable ice or moraine. Continuous melting can weaken these natural dams, making them prone to failure, which can lead to a GLOF.
 - **Unstable Glacier Advances:** In some cases, climate change may cause glaciers to advance rapidly, leading to the formation of ice dams. When these ice dams break, they can release large volumes of water from the glacial lake, causing severe flooding downstream.

Mitigation Strategies

- **Early Detection and Warning Systems:** It can play crucial role of surveillance systems in providing early detection and warnings for Glacial Lake Outburst Floods (GLOF) and Landslide Lake Outburst events.
- **Integration of Technology:** It involves how advanced technologies are integrated into surveillance systems, showcasing the use of cutting-edge tools for monitoring and assessing potential risks.
- **Understanding Electromagnetic Physics:** It is the application of electromagnetic physics in designing and operating surveillance systems, emphasizing its importance in understanding and predicting GLOF and Landslide Lake Outburst phenomena.
- **Ground Penetrating Radar (GPR) Application in GLOF:** The use of Ground Penetrating Radar (GPR) and its advantages in these surveillance systems, illustrating how this technology contributes to effective monitoring and assessment.
- **Community Involvement and Preparedness:** The importance of community engagement in response to early warnings, highlighting the need for local preparedness and coordination in the face of potential disasters.
- **Interdisciplinary Collaboration:** It emphasized the interdisciplinary nature of surveillance systems, showcasing collaboration between various scientific and technological disciplines to create robust monitoring frameworks.
- **Global Applicability:** Involved the learnings about the global applicability of GLOF and Landslide Lake Outburst surveillance systems, recognizing that these technologies are relevant in diverse geographical settings facing similar challenges.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements regarding Glacial Lake Outburst Floods (GLOFs) is/are correct?

1. GLOFs occur when water accumulated in a glacial lake is suddenly released due to the failure of an ice or moraine dam.
2. The Central Water Commission (CWC) of India has made GLOF studies mandatory for all existing dams in glacial lake regions.
3. GLOFs can lead to catastrophic damage downstream, including the collapse of dams and loss of lives.

Select the correct answer using the code below:

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

Answer: c

Descriptive Question

Q. In the context of recent incidents in India, discuss the primary causes of Glacial Lake Outburst Flood. Enlist the mitigation strategies that could enhance flood risk management in glacial regions. [15 marks] [250 words]

THAWING PERMAFROST IN ARCTIC

Why in News: As the Arctic's permafrost thaws in a warming climate, an enormous amount of toxic mercury is being released into the environment.

Key Details

- Mercury becomes a problem for the environment when it is released from rock and ends up in the atmosphere and in water. These releases can happen naturally. Both volcanoes and forest fires send mercury into the atmosphere.
 - Human activities, however, are responsible for much of the mercury that is released into the environment. The burning of coal, oil and wood as fuel can cause mercury to become airborne, as can burning wastes that contain mercury.
 - This airborne mercury can fall to the ground in raindrops, in dust, or simply due to gravity (known as "air deposition"). The amount of mercury deposited in a given area depends on how much mercury is released from local, regional, national, and international sources.
- The Arctic is covered in permafrost, a large icy expanse that remains permanently frozen. Climate change has

caused record-warm temperatures which have been slowly thawing the permafrost.

- Mercury has been trapped in the Arctic for thousands of years. Natural air currents pick up atmospheric mercury and push it toward the Arctic where it is absorbed by plants, which then deposit the toxin in the soil.
- The mercury content of the Arctic has especially increased over the past 500 years as a result of industrialization.
- Within the icy reserves lies an abundance of mercury ready to be released. That release could have negative health and environmental effects.
- Much of the mercury contaminating the Arctic is a result of transport by air and ocean pathways from sources outside of the Arctic.
- People living in the Arctic remain among some of the most exposed human populations globally to mercury, and some Arctic wildlife face high and critical levels of exposure.
- Many indigenous communities, including Alaskan communities, rely on subsistence fishing and have disproportionately elevated blood mercury levels linked to dietary exposure.
- Altering mercury inputs to Arctic waterways has an immediate and direct impact on mercury exposure in these communities, as well as affecting the mercury delivered to ecosystems and the Arctic Ocean.
- Mercury poisoning is not necessarily an immediate threat. Mercury takes time to accumulate in the food chain, and the risk from drinking water is minimal.

Minamata Convention on Mercury

- The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury.
- Controlling the anthropogenic releases of mercury throughout its lifecycle has been a key factor in shaping the obligations under the Convention.
- The Minamata Convention entered into force on 16 August 2017.
- The **Conference of the Parties (COP)** is the governing body of the Minamata Convention on Mercury. Through the decisions taken at its meetings, the COP advances the implementation of the Convention, which it is to keep under continuous review and evaluation.
- **Financial mechanism of Minamata Convention is composed of:**
 - The Global Environment Facility Trust Fund (GEF)
 - The Specific International Programme (SIP) to support capacity-building and technical assistance.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements is/are correct about the deposits of 'methane hydrate'?

1. Global warming might trigger the release of methane gas from these deposits.
2. Large deposits of 'methane hydrate' are found in Arctic Tundra and under the sea floor.
3. Methane in atmosphere oxidizes to carbon dioxide after a decade or two.

Select the correct answer using the code given below.

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

Answer:

CHEMICAL DISASTER IN ANDHRA PRADESH

Why in News: Recently, explosion in a chemical reactor killed people and severely injured many at the Atchutapuram Special Economic Zone (SEZ) in Andhra Pradesh.

The State of Chemical Disaster Risk in India

- According to the National Disaster Management Authority (NDMA), in the recent past, over 130 significant chemical accidents have been reported in the country, which have resulted in 259 deaths and caused major injuries to more than 560 people.
- There are over 1861 Major Accident Hazard (MAH) units spread across 301 districts and 25 states and three Union Territories in all zones of the country.
- Further, there are thousands of registered and hazardous factories and unorganised sectors dealing with numerous ranges of hazardous material posing serious and complex levels of disaster risks.
- At the national level legislative provisions for chemical disaster management are
 - Factories Act, 1948 (amended 1987),
 - Public Liability Insurance Act 1992,
 - Chemical Weapon Convention(CWC) Act 2002,
 - Environment (Protection) Act 1986 and
 - Disaster Management Act 2005.
 - MSIHC Rules 1989 & Chemical Accidents (EPPR) Rules 1996 and institutional developments, provisions

National Action Plan

- The National Disaster Management Authority has issued guidelines for various disasters, including chemical disasters. The Ministry of Environment & Forests, as the nodal ministry for managing chemical disasters, is responsible for preparing a National Action Plan.

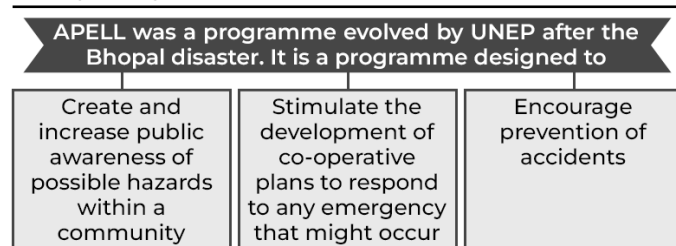
GIS Based Emergency Planning and Response System:

System will be able to help response agencies at Central, State and Local level, during both pre-emergency state for planning and rehearsing.

- First responders i.e. Police stations, fire stations, hospitals/nursing homes and sensitive areas – schools, colleges, cinemas, etc. surrounding the industrial units, were identified and mapped.
- The other major components of the project are
 - Identification of Chemical Industries in India
 - Collection of data pertaining to chemical storage and handling from identified industries
 - Collection of data on resources available with government authorities such as police, fire and medical departments
 - Geo-referencing and Digitization of toposheets
 - Chemical accident simulation using computer models for all the identified chemical accident scenarios

Strategy of Community Awareness for —Emergency Preparedness—

Implementation of the APELL Projects in India. APELL stands for Awareness and Preparedness for Emergencies at Local Level (APELL).



Chemical Accident Information and Reporting System

- National Informatics Centre demonstrated the Web based Chemical Accident Information Reporting System (CAIRS) developed by the National Informatics Centre for MoEF.
- This is web based system and it allows the concerned authorities to online Add/Update/Delete the information related to Hazardous Chemical Accident using password security over web, so that only authentic users can update the information.
- It is GUI based with the capabilities to generate reports for concerned authorities.
- MoEF also analyses the accident information available in the form of various charts. These reports help MoEF in their decision making process, presentation to the Central Crisis Group and sharing with specific state or district crisis groups.

Conclusion

Chemicals, central to modern industry, pose significant disaster management challenges for the public sector,

businesses, and society. Chemical disasters, though uncommon, require vigilant safety measures and robust disaster preparedness. The potential for widespread harm underscores the need for stringent regulations, continuous monitoring, and emergency response planning to protect lives, communities, and the environment.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. What is the main objective of Rotterdam convention?

- To protect human health and environment from toxic pesticides and hazardous chemicals
- To protect human health and environment from all chemicals
- Chemical analysis of hazardous substance
- Pathway analysis of chemical substance

Answer: a

Descriptive Question

Q. Analyze the key issues in managing chemical disasters in India, highlighting the challenges faced and the effectiveness of current national strategies and systems. How can India improve its chemical disaster preparedness and response? [15 marks] [250 words]

GATE OF TUNGABHADRA DAM COLLAPSED

Why in News: Recently, one of the gate of Tungabhadra dam collapsed, triggering a flood alert in Karnataka and Andhra Pradesh.

About Tungabhadra Dam

- The Tungabhadra dam also known as Pampa sagar, a multi-state venture constructed across the Tungabhadra River which is a tributary of Krishna River and it is administered by Karnataka Government.
- Sir Arthur Cotton, a British engineer from the Madras Presidency, conceived the Tungabhadra Dam project in 1860. His primary objectives were to provide irrigation facilities, generate electricity, and control floods in the region.
- The construction of the dam began in 1949 as a joint venture between the Kingdom of Hyderabad and the Madras Presidency. The project was completed in 1953.
- Tunga Bhadra reservoir has a storage capacity of 101 TMC with catchment area spreading to 28000 square kms. TB Dam is about 49.5 meters in height and has about 33 crest gates.
- The Tungabhadra reservoir, along with the Mullaperiyar

dam in Kerala are the only two reservoirs in India that were built using a combination of mud and limestone materials.

- Tungabhadra is formed by the union of two rivers Tunga and Bhadra and hence the name. The two rivers merge at Koodli in the Shimoga district of Karnataka, giving birth to the Tungabhadra River.

How is Dam safety governed in India?

Dam safety Act (DSA) 2021

- It provides for four tiers of institutional mechanism: establishment of National Committee on Dam Safety (NCDS) and National Dam Safety Authority (NDSA) at Centre level and establishment of State Committee on Dam Safety and the State Dam Safety Organization at State level.
- It provides a comprehensive frame work for proper surveillance, inspection, operations and maintenance of all the large (specified) dams of the country for ensuring their safe functioning and to avoid dam failure related disasters.

Regulatory Structure under Dam Safety Act 2021

- **National Committee on Dam Safety:** A National Committee on Dam Safety with a three-year tenure, comprising the chairman of the Central Water Commission, a maximum of 10 representatives of the central government in the ranks of joint secretary, a maximum of seven representatives of the state governments, and three experts.
- **National Dam Safety Authority:** There will be a centrally appointed National Dam Safety Authority, headed by an officer of at least Additional Secretary rank.
 - To implement policies and regulations formulated by national committee and to deal with problems relating to dam engineering and dam safety management.
 - The authority will also resolve issues between State Dam Safety Organisations (SDSOs) or between a SDSO and any individual dam owner, lay down regulations for dam inspection and for accreditation to construction and designing agencies.
- **State Dam Safety Organisation:** It will be responsible for the dam safety through for proper review and study of the various features of the design, construction, repair and enlargement of dams, reservoirs and appurtenant structures.
 - The state dam safety organisation must also report events such as dam failures to the National Dam Safety Authority and also maintain records of major dam incidents of each specified dam.
 - At the State/UT level, all the States (28) and Union Territories (3) owning the specified dams have established the State/UT Dam Safety Committees & Organisations.

Challenges in Ensuring Dam Safety in India

- **Lack of Risk-Based Decision-Making in the DSA:** It does not promote risk-based decision-making and fails to incentivise transparency. It keeps happening regularly, people face disastrous consequences and these disasters termed as 'natural disasters'. But there's nothing natural about them.

- **Need for Greater Transparency in Dam Safety Information:** A robust DSA should allow different stakeholders to access information easily. Everything about dam safety, functions of all the institutions and committees and authorities, their reports, decisions minutes and agendas, everything should be promptly available to the public.

- **Insufficient Independent Oversight in Dam Safety Bodies:** Transparency is further obstructed when national and State bodies comprise government employees and engineers who worked on these projects, compromising objective decision making and lacking people with a proven track record of taking independent decisions.

- **Poor Compliance at all level:** Dam safety is a function of many parts; designing and constructing dams that adhere to safety margins, maintaining and operating them per guidelines, recording data in real-time in an accessible format, forecasting hazardous events and instituting emergency plans. For example, the Sikkim Glacial Lake Outburst Flood.
- **Lack of Periodic Review:** Periodic reviews are required to bring forth fresh inundation maps and new rule curves (which determine the capacity of dam reservoirs), all of which contribute towards the safety of the downstream areas. First there is no periodic review and if it happening, the finding is not available in the public domain.
- **Inconsistent Standards in Dam Safety Evaluations:** The Act mandates that dam builders must carry out thorough safety assessments of dams, but it does not provide a uniform method for analyzing and reporting dam failures.

Conclusion

In order to improve the safety and operational performance of selected existing dams in the country, Government of India is implementing the Dam Rehabilitation and Improvement Project (DRIP) with external funding. After completion of DRIP Phase I programme, Government of India has taken up DRIP Phase-II & III. The scheme envisages rehabilitation and safety improvement of 736 dams located in 19 States. DRIP Phase-II has become operational from 12th October 2021, and is being co-financed by the World Bank and the Asian Infrastructure and Investment Bank.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Pampa Sagar reservoir is located in?

- | | |
|---------------|--------------------|
| (a) Kerala | (b) Andhra Pradesh |
| (c) Karnataka | (d) Telangana |

Answer: c

Descriptive Question

- Q. Identify and analyze the key challenges in ensuring dam safety in India. And propose solutions to improve the same. [10 marks] [150 words]

RESTORATION OF BANNI GRASSLANDS

Why in News: In a new study, researchers have assessed the suitability of different areas of Banni for sustainable grassland restoration.

Key Findings of the Study

- Researchers at Kachchh University grouped the prospective restoration zones of the Banni grassland into five categories depending on how suitable each zone was for restoration.
 - **Highly Suitable:** 937 sq. km or 36% of the existing grassland
 - **Suitable:** 728 sq. km or 28 % of the existing grassland
 - **Moderately:** 714 sq. km or 27% of the existing grassland
 - Marginally suitable 182 sq. km. or 7% of the existing grassland
 - **Not Suitable for Restoration:** 61 sq. km or 2% of the existing grassland
- Highly suitable and suitable zones which accounted for nearly two-thirds of the complete Banni grasslands can be restored easily by simply providing them with adequate water sources, either through irrigation or rainwater harvesting.
- Marginally suitable and not suitable zones can also be managed through interventions such as
 - Terracing with supplementary inputs like fertilizers;
 - By protecting from high water run-off and erosion and salt intrusion

Relevance of the Study

- The study could provide the National Green Tribunal (NGT) and policymakers a robust foundation for crafting policies aimed at protecting and rehabilitating degraded grasslands.
- A key feature of the new study is that it provides a holistic assessment. Earlier studies on grassland degradation has been performed only at the scale of sample plots.
- They analysed multiple characteristics of soil such as the availability of the three important nutrients (NPK), four essential micronutrients, iron, manganese, zinc, and copper; soil acidity, soil texture, soil organic carbon, salinity, the water holding capacity, cation exchange capacity, bulk density, and infiltration rate.

About Banni Grasslands

- The Kachchh district in Gujarat is one of the largest tracts of grasslands in the country. Popularly known as 'Banni', it once covered an area of approximately 3,800 sq. km but it has now decreased to about 2,600 sq. km.
- The land here was formed from the sediments that were deposited by the Indus until it changed its course due to the 1819 earthquake.
- Banni is situated in Arid climate, with high temperature in most of time which reached maximum up to 48°C -50°C during May June and winter temperature goes down to 5°C – 8°C during December January.
- Banni Grassland having numerous large, medium and small sized wetlands attracts migratory birds to breed and rest in winter like great Indian bustard and the Bengal florican.
- The Kutch Desert Wildlife Sanctuary which spans over an area of 380 Sq. km and the recently notified 227 Sq. km Chhari Dhand Conservation Reserve are part of the Banni Grasslands.
- These grasslands are home to a pastoral community called the Maldhari.

Flora and Fauna

Banni is home to great biological diversity, having 37 grass species, 275 bird species, and domesticated animals like Banni Buffalo, Kankrej Cattle, Sheep & Goat, Horses and Camel, as well as wildlife.

Also, it is home to mammals such as the Nilgai, Chinkara, Blackbuck, Wild boar, Golden Jackal, Indian Hare, Indian Wolf, Caracal, Asiatic Wildcat and Desert Fox etc.

Several lagoons filled with water during the good monsoons in Banni Grasslands attract over 150 species of migratory and resident birds including flamingoes and migratory cranes.

The grassland reserve is one of the last remaining habitats of the Indian Cheetah. The region also serves as a breeding ground for the Banni buffalo and the Kankrej cow.

The vegetation in this reserve mainly comprises Prosopis Juliflora, Cressa critica, Cyperus spp, Sporobolus, Dichanthium, and Aristida.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. The Maldhari tribe is predominantly found in which region of Gujarat?

- (a) Gir forest (b) Banni grassland
(c) Dangs (d) Central Gujarat

Answer: b

CLOUDBUSTS IN HIMACHAL PRADESH

Why in News: Himachal Pradesh recently witnessed a series of cloudburst incidents, which triggered flash floods.

Key Details

- The epicentre of two of the five cloudbursts in Himachal Pradesh that caused the maximum devastation at Nirmand block in Kullu and Samej Khad in Shimla's Rampur division was the Shrikhand Kailash mountains.

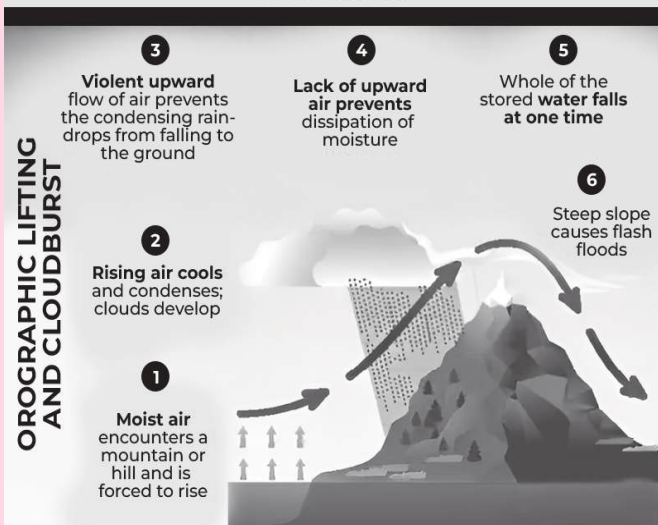
- The Samej Khad, a tributary of the Sutlej River that divides Shimla and Kullu districts, witnessed the most significant devastation.

Cloud Burst

- A cloudburst is a sudden rainfall which can be quite unexpected, very abrupt, accompanied by hail and thunder.
- It usually occurs in high altitude areas due to the formation of a low pressure area on the top of a mountain.
- The low pressure zone attracts clouds to the top of the mountain with great force. When they hit the peak, the moisture content is released in the form of rain.
- According to the India Meteorological Department's (IMD) definition, a cloud burst occurs when more than 100 mm/hour precipitation occurs in a geographical area of 20-30 sq km.

WHAT CAUSES CLOUDBURSTS?

Cloudbursts occur only via orographic lift i.e. a situation when a warm air parcel mixes with cooler air, resulting in sudden condensation.



Flash Flood

- A flash flood is sudden flooding that occurs when floodwaters rise rapidly with no warning within several hours of an intense rain. They often occur after heavy rainfall, usually from a storm.
- Flash floods can be caused by:
 - A heavy rain in an area with high runoff (no absorption)
 - A prolonged heavy rain feeding into area watercourses
 - A sudden snow melt
 - A rain on frozen soil which melts the snow in addition to the rain volume which
 - Cannot be absorbed into frozen ground
 - A breakage in a dam or containment system
 - High tides
 - Storm surges

- Tsunamis
- Downstream blockage of the river channel

Way Forward

- Regulations should be strictly followed in the development planning for ecologically sensitive areas, properly taking into account environmental impact assessments, and the ecological footprints of projects.
- Alternative livelihood opportunities should be provided in fragile ecosystems, reducing the dependence on tourism.
- Automated weather stations should be established under each gram panchayat and urban local bodies to ensure timely evacuation and quick response to disasters.
- Prioritise mitigation and adaptation plans at multiple levels to overcome the threats posed by climate change.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements with regard to cloudburst is/are correct?

1. It is defined as sudden localized very heavy downpour with cloud thunder and lightning.
2. It mostly occurs in the hilly areas.
3. It results into very high intensity of rainfall, i.e., more than 10 cm/hour precipitation occurs in a geographical area of 20-30 sq km.

Select the correct answer using the code given below

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

Answer: a

BIOFORTIFIED VARIETIES OF CROPS

Why in News: Prime Minister of India recently released more than hundred high yielding, climate resilient and biofortified varieties of crops.

Key Details

- These varieties, developed by the **Indian Council of Agricultural Research (ICAR)**, were released at the research fields of ICAR-Indian Agricultural Research Institute, Pusa, New Delhi.
- The Prime Minister released 109 varieties of 61 crops including 34 field crops and 27 horticultural crops.
 - Among the field crops, seeds of various cereals including millets, forage crops, oilseeds, pulses, sugarcane, cotton, fibre, and other potential crops

were released, whereas the horticultural crops consisted of different varieties of fruits, vegetable crops, plantation crops, tuber crops, spices, flowers, and medicinal crops were released.

- PM highlighted the importance of millets, highlighting their significant potential in addressing malnutrition and enhancing the country's food security.
- **Some examples of varieties**
 - **Pooja 1801**
 - ◆ Millet variety with exceptional iron and zinc content.
 - **Pusa 2002**
 - ◆ Millet variety that matures in just 70 days, compared to the 110 days required by most other varieties.
 - **Girnar 6**
 - ◆ Groundnut variety with high oil content.
 - **Nandyal 1267**
 - ◆ Chickpea variety well-suited for mechanical harvesting.

Biofortification of Crops

- Biofortification is a process of enhancing the nutritional quality of edible parts of the plants through genetic approach such as plant breeding.
- **Significance of Biofortification**
 - Biofortification is regarded as the most sustainable approach to alleviate malnutrition.
 - It provides nutrients in natural form, thus nutrients enter the body as part of natural food matrix.
 - Biofortified varieties are as high yielding as traditional varieties, thus no loss is incurred to the farmers.
 - They are also cost-efficient as they do not include any additional costs.
 - Biofortification makes food crop varieties more nutritious and more stable under a variety of challenging environmental conditions.
 - Improvements in crop micronutrient density and resilience via biofortification offers a solution to help offset climate-induced declines in agricultural productivity and nutrition.

Lab-to-Land Programme

- The Lab to Land Programme (LLP) was launched by the ICAR in 1979 as a part of its Golden Jubilee celebration.
- The overall objective of the programme was to improve the economic condition of the small and marginal farmers and landless agricultural labourers, particularly scheduled castes and scheduled tribes, by transfer of improved technology developed by the agricultural universities, research institutes etc.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is not an objective of biofortification in crops?
- Improve micronutrient and mineral content
 - Improve protein content
 - Improve resistance to diseases
 - Improve vitamin content

Answer: c

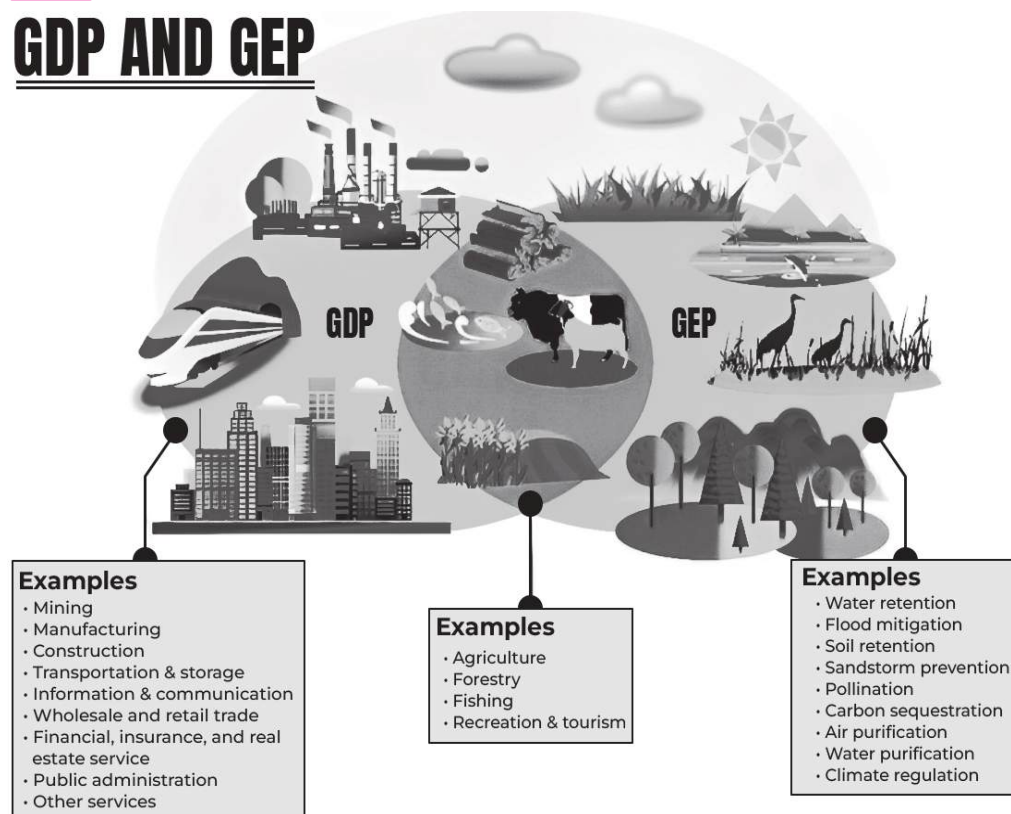
GROSS ENVIRONMENTAL PRODUCT INDEX

Why in News: Uttarakhand has recently launched the World's first Gross Environmental Product Index.

Key Details

- Uttarakhand is the first state in the world where the development of the ecosystem will be assessed through the Gross Environmental Product Index.
- Under the Gross Environmental Product Index, Uttarakhand has assigned monetary value to four of its natural resources — air, water, forest, and soil — termed as gross environment product (GEP).
- The GEP index reflects comparative data from 2020 to 2022 and shows a 0.9% increase.
- Now GEP can also be released along with GDP in the state. Its assessment will establish better harmony between ecology and economy.
- **Formula**
 - **GEP Index** = (Air-GEP index + Water-GEP index + Soil-GEP index + Forest-GEP index)
- **Significance**
 - This assessment will establish better harmony between ecology and economy.
 - The GEP index would increase awareness of the environment.
 - This will help in assessing the contribution to environmental protection.
 - This index will also help in making plans.

GDP AND GEP



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently, World's first environmental product index was launched by the state of?

- (a) Rajasthan
- (b) Gujarat
- (c) Andhra Pradesh
- (d) Uttarakhand

Answer: d

SMART LABORATORY ON CLEAN RIVERS

Why in News: India and Denmark have recently agreed to establish a 'smart laboratory on clean rivers' (SLCR) in Varanasi to bring excellence in small river rejuvenation and management.

Key Details

- The alliance is a unique tripartite initiative between **Government of India** (Department of Water Resources, River Development and Ganga Rejuvenation), the Indian Institute of Technology - Banaras Hindu University (**IIT-BHU**), and **Government of Denmark**, to bring excellence in small river rejuvenation and management.
- The SLCR aims to leverage the expertise of both nations to rejuvenate the **river Varuna** using sustainable approaches.
- The **Indo-Danish Joint Steering Committee (JSC)** is the highest forum for SLCR which provides strategic guidance and reviews progress.
- JSC has cleared **four projects** to be taken up under the collaboration.
 - Developing a **Decision Support System (DSS)** for water management to analyse basin water dynamics through hydrological models, scenario generation, forecasting and data analytics.
 - The second project focuses on the **characterization of emerging pollutants and fingerprint analysis**.

- Project, to enhance regional economic and social development while ensuring good river health on a selected stretch of the Varuna River.
- **Hydrogeological Model of the Varuna Basin for Recharge Sites**, aims to enhance base flow through Managed Aquifer Recharge (MAR).

About Varuna River

- It is a minor tributary of the Ganga, which is named after the god Varuna, the god of water.
- The Varuna river rises from Melhum at Phulpur in Allahabad district at 25°27'N, 82°18'E.
- It flows east-to-southeast for 106 kilometers via Bhadohi, Mirzapur, Jaunpur, and enters Varanasi in order to finally merge in Ganga at Sarai Mohana.
- City of Varanasi is located between two confluences: one of Ganga and Varuna, and other of Ganga and Asi.

Conclusion

The SLCR is expected to bring out a unique confluence of academia, sub national and national Government working in partnership with another country to co-create solutions for identified problems and issues pertaining to river health in general and small river rejuvenation in particular.

PRIVATE SECTOR PARTICIPATION IN SPACE

Why in News: Recently, IN-SPACe has come with an Announcement of Opportunity (AO) for making available Indian Orbital Resources to the Non-Government/Private Entities.

Key Details

- In this Announcement of Opportunity (AO), IN-SPACe is inviting non-government entities (NGEs) to develop, launch, and operate a telecommunications satellite, as well as to support blue economy projects with seed funding. The goal of this AO is to identify and enable eligible NGEs to utilize unused ITU filings.
- An “unused ITU filing” refers to a registration made by India’s space agency, ISRO, with the International Telecommunication Union (ITU) for a satellite or satellite network.
- This filing includes detailed technical information about the satellite, its planned orbital position, and frequency allocations. The purpose of the filing is to coordinate the use of orbital slots and frequencies to prevent interference between satellites.
- For this AO, the ITU filing ‘INSAT-KA89ER’ has requested uplink frequencies ranging from 21 GHz to 31 GHz and downlink frequencies from 17.7 GHz to 21.2 GHz. This AO for a telecommunications satellite follows another AO focused on the blue economy.
- Under this previous AO, IN-SPACe announced the creation of a seed fund to offer financial support, expert mentorship, and resources to help entrepreneurs bring their ideas to market.
- The fund aims to support projects that address critical issues in the blue economy, such as improving ocean monitoring and mapping, enhancing maritime surveillance, and aiding disaster response efforts in coastal communities.
- The AO notification invited proposals from startups, micro enterprises, and small enterprises with innovative ideas for applying space technology to advance the blue economy.

About the Indian National Space Promotion and Authorisation Centre (IN-SPACe)

- IN-SPACe, or the Indian National Space Promotion and Authorization Center, is a regulatory body established by the Indian government to promote and regulate private sector participation in the Indian space sector.
- It was established in 2020 by the Indian government as part of its efforts to enhance the role of private players in space activities. It operates under the Department of Space.
- It is responsible for issuing licenses and authorizations for private space missions, satellite launches, and other space activities. This includes ensuring that private entities adhere to safety, security, and regulatory standards.
- It aims to facilitate the growth of the private space sector in India by providing a structured and streamlined regulatory framework.

Goals Include

- **Promoting Private Sector Participation:** Encouraging private companies to engage in various space-related activities, including satellite launches, space exploration, and technology development.
- **Authorization and Regulation:** Ensuring that private space activities comply with national and international regulations, safety standards, and policies.
- **Facilitating Collaborations:** Acting as a liaison between private companies and governmental space agencies like ISRO to foster collaborations and support innovation.

India’s Space Economy

- Space Tech Analytics reports that India ranks as the 6th largest player in the global space industry, accounting for 3.6% of the world’s space-tech companies.
- As of the early 2020s, the Indian space economy is valued at around \$8-10 billion, covering areas such as satellite manufacturing, launch services, space applications, and related fields.
- This represents roughly 2-3% of the global space economy and is projected to grow substantially with rising private sector participation and government backing.

Present Status of Private Sector Participation in Space in India

- Private sector involvement in India’s space industry

has experienced substantial growth and development recently.

- Currently, private sector engagement is on the rise, with companies like Skyroot Aerospace and AgniKula Cosmos pioneering new space technologies and launch vehicles.
- Deloitte reports that private investments in the Indian space sector surged by approximately 75% from 2021 to 2022, a period that saw the emergence of around 190 new start-ups in the field.

Significance of Private participation in Space Sector

• Economic

- Space technology plays a crucial role in the sustainable development of the blue economy by offering tools and data for effective management of marine resources and maritime safety.
- The AO highlights key areas such as fisheries (including combating illegal and over-the-quota fishing), marine biology, shipping, surveillance, oceanography, and exploration of marine resources like poly-metallic nodules.
- This advancement will significantly boost India's space export, space tourism, and overall space economy by reducing exploration costs, making the \$40 billion space economy target for 2040 more attainable, and attracting increased foreign direct investment.
- Additionally, the Confederation of Indian Industry (CII) estimating that the space sector could create over 100,000 jobs in coming years.

• Environmental

- This participation will support environmental conservation and climate resilience efforts.
- Private participation will help in Weather forecasting & disaster management efforts.

• Technological

- Private sector participation in space will provide digital upgrades.
- India's Communications infrastructure will be strengthened.

• National security

- India's space independence and security will be ensured. It will equip India to deal with a potential attack on its space assets as India will have alternatives to switch to.
- A robust and diverse space sector enhances India's strategic capabilities in space exploration, satellite communications, and Earth observation, contributing to national security and development.

Challenges That Need To Be Addressed

• Economic Challenges:

- **Revenue Loss:** Private space ventures may reduce the revenue earned by ISRO through its space activities.

- **Access to Capital:** Space ventures require substantial investment in technology, infrastructure, and research. Securing sufficient funding can be difficult, especially for startups and smaller companies.

- **Limited Infrastructure:** Developing and maintaining the necessary infrastructure for space activities, such as launch facilities and ground stations, requires significant investment and expertise.

- **R&D Costs:** Research and development in space technology are expensive. Private firms may struggle with the high costs associated with developing cutting-edge technologies and innovative solutions.

- **Skill Shortages:** The space sector requires a highly skilled workforce. Finding and retaining talent with the necessary expertise in aerospace engineering, satellite technology, and related fields can be difficult.

• Security Challenges:

- **Data Risk:** Data privacy is a big concern in the present scenario. Privatization in the space sector will risk ISRO's space data.

- **National Security:** Space activities have implications for national security. Balancing commercial interests with security concerns is a challenge, particularly for sensitive technologies and data.

- **Increase in Space Emissions and Debris:** NASA researchers have indicated that the rising frequency of launches is resulting in more collisions and, consequently, an increase in orbital debris.

• Governance Challenges:

- **Regulation:** Ensuring compliance with national and international space regulations, safety standards, and legal requirements can be challenging.

Steps Taken to Encourage Private Sector Participation in Space in India

- Over the years, ISRO has cultivated a range of industries and Micro, Small, and Medium Enterprises (MSMEs) as key supply chain partners for the development of launch vehicles and satellites.

- Established in 2019, **NSIL (New Space India Ltd.)** is a public sector enterprise that acts as a commercial arm of ISRO.

- Its role is to handle the commercialization of space activities and promote private sector participation.

- In order to achieve this objective, the Union Cabinet led by the Prime Minister took the historic decision in June 2020 to open up the Space sector and enable the participation of the Indian private sector in the entire gamut of space activities.

- To further it, the government has created the Indian National Space Promotion and Authorisation Centre (IN-SPACe).

- Moreover, the Indian government released a **New Space Policy 2023** aimed at fostering greater private sector involvement. This policy encourages private entities to participate in satellite launches, space exploration, and other space-related activities.

- In May 2024, IN-SPACe announced the norms, guidelines, and procedures for the Authorization of Space Activities (NGP) per the Indian Space Policy 2023.

Way Forward

- FDI Liberalization:**
 - As per the existing FDI policy, FDI is permitted in establishment and operation of Satellites through the Government approval route only.
 - Space sector has to be liberalized further for foreign direct investment in sub-sectors like Launch Vehicles and associated systems or subsystems, Creation of Spaceports for launching and receiving Spacecraft etc.
- More Freedom to Private Sector:**
 - In Countries like the USA, private companies have more accessibility to the space sector. Private companies like SpaceX, Blue Origin, and Rocket Lab have revolutionized the launch industry. SpaceX's Falcon 9 and Falcon Heavy rockets, for example, have dramatically reduced launch costs and increased the frequency of missions.
- Increase Access to Space Tourism:**
 - Blue Origin's New Shepard is designed for suborbital tourism, and Rocket Lab offers small satellite launches with its Electron rocket.
- More Emphasis on Innovation:**
 - Private companies are leading innovations in satellite technology. Companies like OneWeb, SpaceX's Starlink, and Amazon's Project Kuiper are working on large constellations of satellites to provide global internet coverage.
 - These networks aim to offer high-speed internet access to underserved and remote areas around the world.

Conclusion

Private entity's participation in the space sector should be seen with a futuristic perspective. This integration will revolutionize India's space sector and synchronize India's technical sphere with its political, economic and social spheres.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding IN-SPACe

1. It is a regulatory body established by the Indian government to promote and regulate private sector participation in the Indian space sector.
2. It operates under the Department of science and technology.
3. At present private participation in the space sector is not permitted in India.
4. 100% FDI is allowed in all sub activities in the space sector.

How many of the above statements is/are correct?

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

Answer: a (1 only)

Descriptive Question

Q. IN-SPACe has come with an Announcement of Opportunity (AO) for making available Indian Orbital Resources to the Non-Government/Private Entities. In the context of the above initiative, examine the potential role of private sector participation in space and associated challenges. [15 marks] [250 words]

NSIL TO LAUNCH NEPAL-BUILT MUNAL SATELLITE

Why in News: The Ministry of External Affairs and New Space India Limited has recently signed an agreement to assist launch of the Nepal-built Munal satellite.

Key Details

- Munal is an indigenous satellite developed in Nepal under the aegis of the Nepal Academy of Science and Technology (NAST).
- Antarikhya Pratishan Nepal (APN), a Nepalese space startup, has assisted Nepalese students in the design and fabrication of this satellite.
- It aims to build a vegetation density database of the earth's surface.
- This satellite is expected to be launched soon on New Space India Limited (NSIL's) Polar Satellite Launch Vehicle.
- A launch service agreement for launching the Munal satellite was signed by NSIL and NAST when India's external affairs minister visited Nepal in January 2024.

What is Space Diplomacy?

- Space diplomacy is the use of diplomacy, science, and technology to explore space and ensure its safety, security, and sustainability.
 - It involves collaboration between nations, space agencies, private companies, and other actors

- It focuses on the establishment of strong connections, creating knowledge structures, and developing space capabilities among nations.
- It is about safeguarding outer space through international collaboration and concrete frameworks—all for the utmost benefit of humankind.
- It also recognizes that these opportunities will only unlock its maximum potential in safe, sustainable and equitable conditions.
- The global space economy is now estimated to be nearly USD450 billion in size and is projected to grow to over USD1 trillion by the 2040.

Objective of Space Diplomacy

- **Creating a Global Security Framework:** Space diplomacy aims to establish rules and guidelines to ensure that disputes are resolved peacefully, based on the idea that space should be fair and accessible to all nations. Cooperation among countries is essential to prevent conflicts and avoid a potential space arms race.
- **Addressing Shared Challenges:** Space technologies are becoming more integrated into our daily lives. Space diplomacy seeks to use these innovations to tackle global challenges. For example, satellites can help detect earthquakes, and space mining could provide new water sources.
- **Promoting Global Engagement:** Space diplomacy naturally strengthens collaboration between nations and enhance diplomatic relations. As more sectors become interested in space, it offers a unique chance to unite people in achieving common goals.
- **Encouraging Economic Growth and Scientific Progress:** Space diplomacy also ensure transparency and accountability in the space activities of both public and private sectors worldwide, while also encouraging innovation.

India Space Policy 2023

- This policy endeavours to contribute to economic growth, foster social progress, and improve the overall well-being of its population.
- The policy institutionalizes roles for government stakeholders, including the Indian Space Research Organisation (ISRO), the Indian National Space Promotion and Authorisation Centre (IN-SPACe), New Space India Limited (NSIL), and the Department of Space (DoS).
- The Policy sets the stage for India's expanded participation in the global space arena by emphasising the importance of international cooperation and coordination.
- The 2023 Policy focuses predominantly on five key areas.
 - Encouraging advanced Research & Development in the space sector to sustain and augment the space program.

- Providing public goods and services using space technology for national priorities.
- Creating a stable and predictable regulatory framework to provide a level playing field to Non-Government Entities in the Space sector through IN-SPACe.
- Promoting space-related education and innovation, including support to space-sector start-ups.
- Using space as a driver for overall technology development, nurturing scientific temperament in society, and increasing awareness of space activities.

India's Space Diplomacy

- Space diplomacy has become a significant tool of India's foreign policy and it can open new vistas to maximise its interests globally.
- ISRO has been successful in enhancing India's self-reliance in technology, including its economic and international stature.
 - Recent successful landing on the moon, India has gained the leverage to hold a significant position in the global space community.
- India's role in space diplomacy specifically global south reflects its commitment to leveraging space technology for the benefit of all nations, particularly those in the developing world.
- Through collaboration, knowledge sharing, and capacity building, India strives to foster a more inclusive and equitable global space ecosystem.

India's Collaboration with Other Countries

- **India-USA:** India's space diplomacy with the USA advanced with India's entry into the Artemis Accords in June 2023, becoming the 27th member to join this US-led initiative for peaceful space exploration.
 - Both nations agreed on a human spaceflight cooperation framework between NASA and ISRO, highlighted the upcoming 2024 launch of the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite, and emphasized collaboration on critical technologies through the iCET initiative.
- **India-EU:** The European Union initiated the Copernicus Earth observation program, promoting global cooperation with a free, open data policy. India, a vital partner in this initiative, signed a Cooperation Agreement with the EU in March 2018, allowing mutual access to data from India's Earth observation satellites and the EU's Sentinel satellites. This collaboration enhances disaster management and addresses global challenges through shared data.
- **India-Russia:** Following the Gaganyaan mission, India and Russia are expanding their space cooperation, with four Indian astronauts trained in Russia for the mission.
 - Both countries are establishing ground stations to enhance their satellite navigation systems, GLONASS

and NavIC, and India is producing components for GLONASS.

- In 2021, both the countries signed an agreement to boost collaboration, especially in human spaceflight, and explore cooperation on Russia's Zeus TEM deep-space mobility platform.
- They also aim to strengthen their joint efforts within the UN Committee on the Peaceful Uses of Outer Space (UN COPUOS) for sustainable space operations.
- **India-Japan:** India and Japan have cooperated in space since 1992 through the APRSAF and jointly led the Sentinel Asia Project from 2005 for disaster management.
 - The first Japan-India Space Dialogue in 2019, followed by a virtual meeting in 2021, focused on space policy and industry cooperation.
 - At the 2023 QUAD summit, they prioritized space situational awareness and sustainability. Both countries plan a joint lunar mission in 2025 to search for water at the lunar south pole.

Conclusion:

India's space diplomacy initiatives focus on promoting peaceful space exploration, advancing technological capabilities, and fostering global cooperation. By engaging in international partnerships, policy dialogues, and joint missions, India aims to enhance its role in the global space community, address shared challenges like disaster management and climate change, and contribute to sustainable and innovative use of outer space. These efforts align with India's vision to strengthen its strategic interests and socio-economic development through space technology.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Munal is an indigenous satellite developed in UAE with the help of ISRO.
2. The Gaganyaan mission is a joint space mission between India and Japan.
3. India joined the Artemis Accords in June 2023 for peaceful space exploration.

Which of the statements given above is/are correct?

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

Answer: d

Descriptive Question

- Q. Briefly discuss the key elements of India's space diplomacy and its impact on the country's global standing and socio-economic development. [10 marks] [150 words]

HUMAN SPACEFLIGHT

Why in News: NASA has recently rescheduled for next year to bring astronauts back from the International Space Station (ISS) to Earth.

Key Details

- Boeing's Starliner spacecraft, which launched on June 5 with astronauts Sunita Williams and Barry Wilmore, is set to make an uncrewed return to Earth on September 6 after a mission fraught with technical challenges.
- Meanwhile astronauts Sunita Williams and Barry Wilmore will remain on the ISS until February 2025, when they will return on a SpaceX Dragon capsule.
 - During their extended stay on the ISS, Williams and Wilmore have continued their scientific research and maintenance activities.
 - The extended mission has also provided an opportunity to study the long-term effects of space travel on the human body.
- This decision was made to prioritize their safety, given the unresolved issues with the Starliner such as helium leaks and thruster problems.

About Spaceflight

- A spaceflight is flight beyond the earth's atmosphere.
- In aeronautic and astronautic circles, space begins from the Karman line, which is 100 km above sea level.
- Similarly, the force of gravity can be said to be approaching zero several billion kilometres from a massive body but is nonetheless present. This is why the astronauts onboard the ISS experience microgravity, not zero gravity.

Effects of Space Travel on the Human Body

- **Space Sickness**
 - Around 20% of all astronauts and 70% of those involved in long-duration spaceflight develop a disease called spaceflight-associated neuro-ocular syndrome (SANS): more fluids enter the head and build up at the back of the eye, affecting eyesight.
- **The Face Often Swells in Space**
 - Blood and other bodily fluids are pulled by gravity into the lower body. When you go to space, gravity weakens and thus fluids are no longer pulled down, resulting in a state where fluids accumulate in the upper body.

• **Bones and Muscles weaken**

- NASA has learned that without Earth's gravity affecting the human body, weight-bearing bones lose on average 1% to 1.5% of mineral density per month during spaceflight. After returning to Earth, bone loss might not be completely corrected by rehabilitation; however, their risk for fracture is not higher.
- Moreover, in microgravity, bones become weaker, which might force the body to deposit the 'excess' mineral content in the kidneys, leading to renal stones.

• **Major Impacts on the Human Body.**

- Astronauts who stay in space, where there is almost no atmosphere, are exposed to higher energy radiation than on the earth. If a person is exposed to a lot of higher energy radiation, the risk increases that they will develop diseases such as cancer.

• **Intense Stress and Other Effects**

- Astronauts develop stress before even realizing it when living and working together in a cramped space with other astronauts for a few months.
- Researchers are also studying whether various nutrients and drugs are metabolised differently in space. They have already identified some changes in metabolic pathways involved in synthesising DNA, amino acids, and phospholipids, and a condition in which excess iron in the body presents along with low urinary magnesium and potentially lower DNA stability.

- (b) The point where gravity no longer affects objects.
- (c) The altitude where the atmosphere becomes too thin for conventional aircraft to maintain flight.
- (d) The boundary between the Earth's atmosphere and the Moon's gravitational influence.

Answer: c

NATIONAL QUANTUM MISSION

Why in News: India's first quantum computer is expected to launch under National Quantum Mission (NQM).

Key Details

- India's first quantum computer, after its launch, is expected to achieve computation of 6 qubits over the next few months.
- Moreover, amongst the targets set to be achieved, the NQM will be setting up four Section 8 companies across the four verticals of quantum technologies namely – computing, communication, measurement and sensing.
 - These companies will be run under the aegis of premier institutes like Indian Institute of Technology or the Indian Institute of Sciences

Goal of the NQM

- To establish a quantum computer with a computation of 20-50 qubits in the next three years, 50-100 qubits in the next five years and 50-1000 qubits in the next 10 years.
- To put these computational capabilities in context, on average internationally quantum computers have processing capabilities of 20-50 qubits at present.

Fact Check

- | | |
|---|---|
| 1 | The average maximum time an astronaut spends in space has increased from one month in the 1960s to six months in the 2020s. Each expedition to the ISS can also be up to six months long. |
| 2 | Assuming that their current trip ends on February 15, 2025, Williams and Wilmore will spend 256 days in orbit. |
| 3 | Thus far 11 individuals have spent more than 300 days in space in a single mission. |
| 4 | The record holder is Russia's Valeri Polyakov (437 days from January 8, 1994) and the American record-holder is Frank Rubio (370 days from September 21, 2022). |
| 5 | The cosmonaut Oleg Kononenko is currently the only astronaut to have spent more than 1,000 days in space across missions. |
| 6 | The second active spacefarer on this list is the U.S.'s Peggy Whitson with 675 days. |

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements best describe Karman Line?
- (a) The altitude at which atmospheric pressure equals zero.

About Quantum Computing

- Quantum computing is an area of computer science that uses the principles of quantum theory at the atomic and subatomic levels. It uses subatomic particles, such as electrons or photons.
- Classical computers, which include smartphones and laptops, encode information in binary "bits" that can either be 0s or 1s. In a quantum computer, the basic unit of memory is a quantum bit or qubit.
- Quantum bits, or qubits, allow the subatomic particles to exist in more than one state at the same time.

Theoretically, linked qubits can exploit the superposition, entanglement and interference between their wave-like quantum states to perform calculations that might otherwise take millions of years.

Key Principles of Quantum Computing

Quantum computers are based on these key principles of quantum physics that enable new approaches to information processing:

Key Principle	Description
Superposition	- The fundamental principle that enables the power of quantum computing is 'quantum superposition'. - Unlike traditional bits used in classical computers that can exist in only one state (either 0 or 1), quantum bits or 'qubits' can exist in a superposition of 0 and 1 simultaneously.
Quantum Entanglement	- Quantum Entanglement is where quantum particles interact physically in ways such that the quantum state of each cannot be described independently. - Measuring one particle instantaneously affects the others even over long distances. - This enables quantum systems to exhibit correlations stronger than any possible classical behaviour.
Quantum Interference	- The wave-like characteristics of quantum particles cause interference effects between different probability states that can result in constructive or destructive interference analogous to the interference effects seen in waves. ➤ This effect is harnessed in quantum algorithms.
Quantum Tunneling	Quantum tunnelling refers to the ability of particles to tunnel through barriers when according to classical physics they do not have enough energy to do so. This principle is critical for the functioning of quantum computer hardware like quantum dots.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which one of the following is the context in which the term "qubit" is mentioned? (UPSC CSE-2022)

- (a) Cloud Services
- (b) Quantum Computing
- (c) Visible Light Communication Technologies
- (d) Wireless Communication Technologies

Answer: b

GUIDELINES FOR TRANSPORTATION OF LIVE HUMAN ORGANS

Why in News: The Union Health Ministry has recently issued guidelines for organ transport across India.

Key Details

- The Standard Operating Procedure (SOP) will serve as a guiding document for healthcare institutions in States/ Union Territories to transport organs by various modes of transport, including metro trains and over water.
 - Human organs for transplant would be transported only within the territory of India and no organ shall be transported outside the country.

- No human organ for transplant shall be allowed to be transported from outside the territory of India.
- The transport protocols aim to ensure the expeditious movement of life-saving organs from the point of harvest to their destination through effective use of available infrastructure.
- All cases of organ transplants, whether from a living or deceased donor, will be allocated a unique National Organ and Tissue Transplant Organisation (NOTTO)-ID for both the donor and the recipient.
- It must be generated by the hospital from the NOTTO website (www.notto.mohfw.gov.in).
- The directives were issued following reports of malpractice and to eliminate commercial dealing in organs, especially those involving foreign citizens.

Guidelines to be Followed at Airport

- When transporting organs by air (commercial or private aircraft, helicopter, air ambulance, etc., except drones), the box containing the organ should be screened without being opened, but the passengers carrying it must still go through regular security checks before boarding.
- Staff accompanying an organ box should be prioritized during deboarding, with an announcement made by the Pilot-in-Command. Airlines should provide front-row seating, priority reservations, and allow late check-ins for organ transport.
- It would be the responsibility of the airport officials to define a green path (free from obstruction) and a trolley for the organ box from the ambulance to the aircraft at the

point of origin and from the aircraft to an ambulance at the destination.

- The flight captain may request Air Traffic Control to accord priority take-off and landing for the aircraft and also make an in-flight announcement about the carriage of a live human organ onboard.
- In case the ambulance is allowed until the runway, the airline crew would have to guide and assist the accompanying medical personnel carrying the organ box to disembark from the staircase onto the runway directly and into the waiting ambulance.

Guidelines when Organs are Transported by Road

- A green corridor may be provided on the request of the concerned authorities/agencies.
- The One Trigger System suggests that a request from a credible organ allocation authority (like NOTTO or ROTTO/SOTTO) should initiate the process of organ transport by creating a green corridor, helping to address internal security concerns.
- A nodal officer from the police department may be appointed to handle issues related to the creation of green corridor in each State/city. The nodal officer may help iron out issues related to jurisdiction, approvals, security concerns, etc. during the creation of the green corridor.

SOPs For Transfer of Organs by Railways/Metro

- The steps to be taken by the authorities concerned as regards providing accommodation, arranging for a green corridor and security arrangements were also issued.

The Transplantation of Human Organs & Tissues Act (THOTA), 1994

Key Provisions

- It provides for regulation of removal, storage and transplantation of human organs & tissues for therapeutic purposes and for prevention of commercial dealings in human organs & tissues.
- The subject of artificial organs is not regulated under the aforesaid Act.
- The Government of India has implemented National Organ Transplant Program (NOTP). Under the program, support is provided to establish new or to upgrade existing organ & tissue transplant and retrieval facilities and to establish tissue banks. NOPT
 - To establish a network of organ and tissue transplant organizations at national, regional and state level and to link them with transplant & retrieval hospitals and tissue banks
 - To maintain a national registry of organ & tissue donors and recipients for the purpose to provide an efficient system for procurement and distribution of organs & tissues from deceased donors.

- In the case of a foreign national, prior approval of the authorisation committee is required before removing or transplanting organ or tissue or both.
 - When the proposed donor or the recipient is a foreigner, a senior embassy official of the country of origin has to certify the relationship between the donor and the recipient in accordance with Form 21 of THOTA, and in case a country does not have an embassy in India, the certificate of relationship, in the same format, should be issued by the government of that country.
 - The laws also have provision for verifying the authenticity of the documents of the donor and recipient by senior embassy officials.
 - The authorisation committee and senior embassy official are also required to assess and certify that the donation of the organ was made out of love and affection; there was no financial transaction between the recipient and donor; and there was no pressure or coercion on the donor.
- Any violation of the THOTA, 1994 and its rules have to be probed, and appropriate action includes the suspension of registration for performing organ transplants if hospitals are involved in illegal activities.

Note: The National Organ and Tissue Transplant Organisation (NOTTO)-ID is mandatory for considering allocation of organs in case of deceased donor transplant, this ID in case of a living donor transplant, shall also be generated at the earliest, maximum within 48 hours after the transplant surgery is done.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is not covered under the Transplantation of Human Organs & Tissues Act (THOTA), 1994?
- Removal of human organs for transplantation
 - Storage of human tissues for therapeutic purposes
 - Regulation of artificial organs
 - Prevention of commercial dealings in human organs

Answer: c

MESSENGER RIBONUCLEIC ACID (MRNA) VACCINE

Why in News: The World Health Organisation has recently announced a new Messenger Ribonucleic Acid (mRNA) vaccine development initiative against human avian influenza.

Rational Behind to Develop mRNA Vaccine

- The bird flu H5N1 first emerged in 1996, but since 2020 an exponential growth in outbreaks in birds has occurred and infected some 26 mammalian species, including cattle in US farms.
- According to the WHO, between 2003 and April 1, 2024, close to 900 human infections of H5N1 have been reported from 23 countries, of which, more than half were fatal. For the first time, three cases of human infection in dairy farm workers were also reported in India, raising fears of the risks of a wider transmission of this virus from cattle to humans. This has prompted fears the virus could spark a future pandemic.
- Also, Covid pandemic exposed glaring global vaccine inequity and demands for a fairer distribution amid efforts to use the technology against other diseases.
- The WHO said Argentinian manufacturer Sinergium Biotech would lead the effort and had already begun developing candidate H5N1 vaccines.

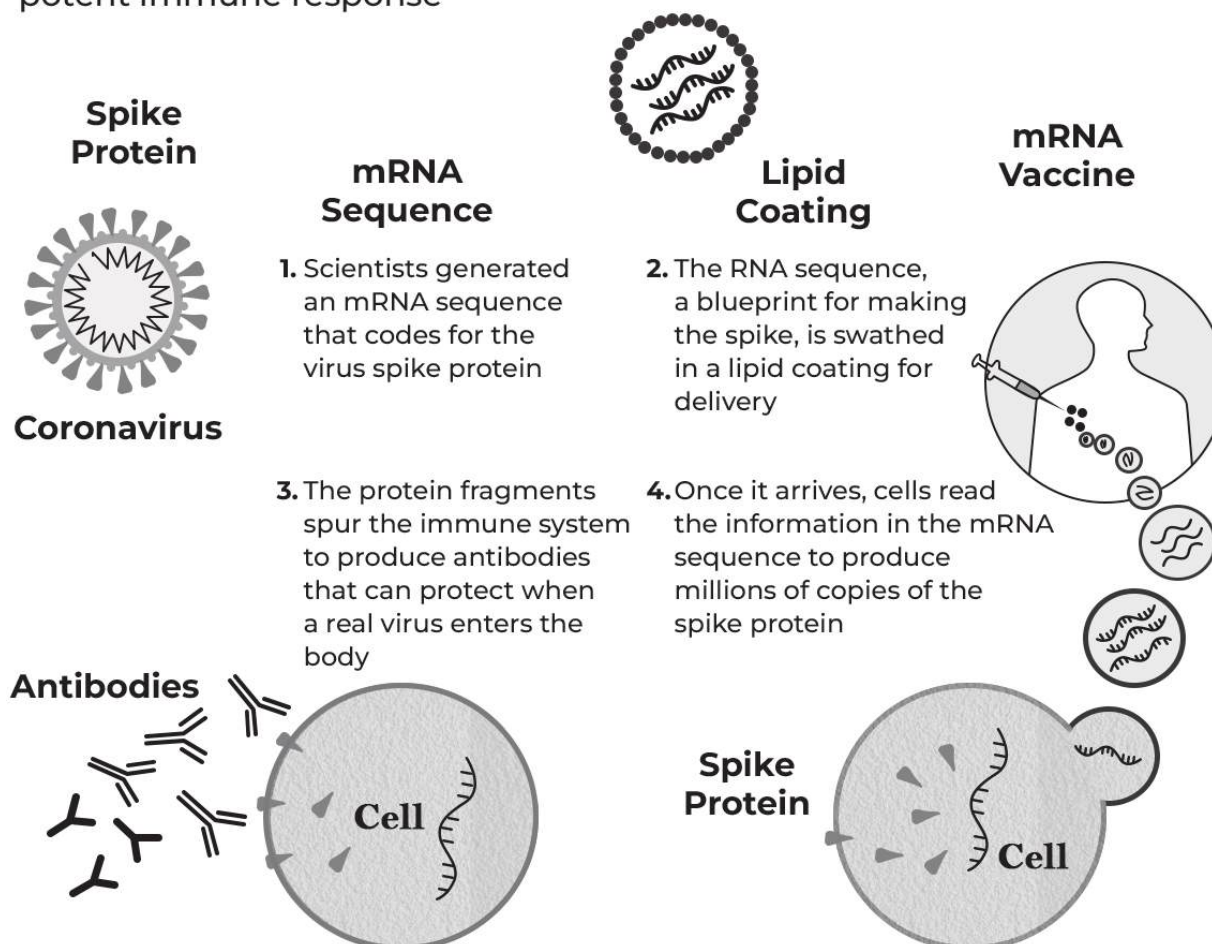
- Once the preclinical data is ready, the technology, materials, and expertise will be shared with a network of manufacturers in poorer countries, allowing them to accelerate their own development and production.

What is mRNA?

- mRNA—or messenger RNA—is a molecule that contains the instructions or recipe that directs the cells to make a protein using its natural machinery.
- To enter cells smoothly, mRNA travels within a protective bubble called a Lipid Nanoparticle.
- Once inside, our cells read the mRNA as a set of instructions, building proteins that match up with parts of the pathogen called antigens.
- The immune system sees these foreign antigens as invaders—dispatching defenders called antibodies and T-cells—and training the immune system for potential future attacks.
- So, if and when the real virus comes along, the body might recognize it—sounding the alarm to help defend against infection and illness.

How mRNA Vaccines Work ?

The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response



EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements about mRNA vaccines is correct?
- mRNA vaccines work by inserting viral proteins directly into the cells.
 - The mRNA in the vaccine acts as a blueprint for the body to produce specific proteins that trigger an immune response.
 - Lipid nanoparticles are used in mRNA vaccines to directly destroy pathogens.
 - mRNA vaccines require the use of live attenuated viruses to be effective.

Answer: b

Descriptive Question

- Q. Evaluate the potential and challenges of mRNA vaccine distribution, especially in the context of global vaccine equity, as highlighted by the COVID-19 pandemic. [10 marks] [150 words]

CASE STUDY- GENE EDITING PESTICIDES

Context: According to a recent study, humans, farm animals, and insects may all suffer collateral damage as a result of genetic pesticide exposure.

About Genetic Pesticides

- Genetic pesticides are a type of biotechnological intervention used to control pests by modifying their genetic material.
- Unlike traditional chemical pesticides, which kill or repel pests through toxic substances, genetic pesticides work at the genetic level to either reduce pest populations or make them less harmful to crops.
- Genetic pesticides are touted as more environmentally friendly than chemical pesticides.
- Note: Researchers are also applying gene editing to agricultural pests to control insects that destroy about 40% of global crop production each year. CRISPR-Cas9 gene editing is the primary technique used in the biotech industry to manage insect pests.

Potential Implications of Genetic Pesticides on Non Targeted Organisms (NTOs)

- Scientists have warned that genetic pesticides may be able to edit the genes of people, animals, and insects in the environment where pesticides will be sprayed.
- The team of scientists from Brazil, New Zealand, and

Norway had identified three major pests that could potentially be targeted for outdoor-use gene-editing pesticides: Western corn rootworm, red flour beetle and the fungus *Sclerotinia sclerotium*.

- During the study the team investigated 18 species that are commonly found in farming environments, like humans, cattle, chickens, mice, pollinator insects, earthworms, fungi and crops like maize, cotton, and soybean. These were the NTOs and it was observed that the use of genetic pesticides can lead to silencing or disruption of the normal functioning of 'non-target organisms' (NTO) species.
 - The study also discovered, using computer predictive modelling, that 12 of the 18 species faced potential "unintended hybridisation." Humans were most likely to be affected under all three scenarios.
- The most likely impact is on humans, who may experience significant biological consequences.
 - In humans, the affected genomic regions include several cancer and hormone metabolism pathways, whereas in plants and animals, there were effects on immune responses, essential molecule biosynthesis and the central nervous system.

Conclusion

The researchers cautioned that new risk assessment frameworks are required for proposed applications of genetic engineering pesticides outside of contained laboratories. These should also include the assessment of their environmental persistence.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following correctly describes the difference between genetic pesticides and traditional chemical pesticides?
- Genetic pesticides alter the genetic makeup of pests, whereas chemical pesticides typically use toxic substances to kill or repel pests.
 - Genetic pesticides have no impact on non-target species, unlike chemical pesticides, which can affect a wide range of organisms.
 - Chemical pesticides often require repeated applications, while genetic pesticides can have long-lasting effects after a single application.

Select the correct answer using the codes given below:

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

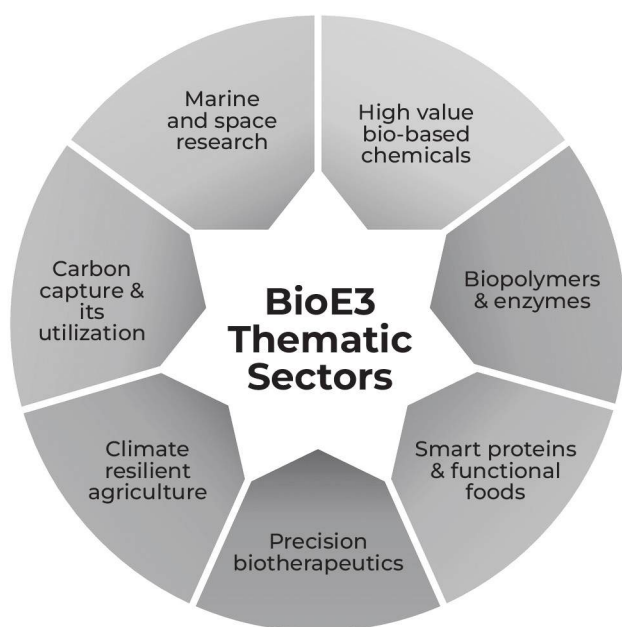
Answer: d

BIOE3 (BIOTECHNOLOGY FOR ECONOMY, ENVIRONMENT AND EMPLOYMENT) POLICY

Why in News: The Union Cabinet has recently approved BioE3 (Biotechnology for Economy, Environment and Employment) Policy for Fostering High Performance Biomanufacturing.

Key Details

- The BioE3 policy is aimed at 'Fostering High Performance Biomanufacturing' aligned with National initiatives of the government of India such as 'Net Zero' carbon economy and Mission LiFE (Lifestyle for environment).
- The salient features of BioE3 policy include innovation-driven support to R&D and entrepreneurship across thematic sectors.
 - This will accelerate technology development and commercialization by establishing Biomanufacturing & Bio-AI hubs and Biofoundry.
- High performance biomanufacturing** is the ability to produce products from medicine to materials, address farming and food challenges, and promote manufacturing of bio-based products through integration of advanced biotechnological processes.
- To address the national priorities, the BioE3 Policy would broadly focus on the following strategic/thematic sectors:



Significance

- Along with prioritizing regenerative bioeconomy models of green growth, this policy will facilitate expansion of India's skilled workforce and provide a surge in job creation.
- Overall, this Policy will further strengthen Government's initiatives such as 'Net Zero' carbon economy & 'Lifestyle

for Environment' and will steer India on the path of accelerated 'Green Growth' by promoting 'Circular Bioeconomy'.

- The BioE3 Policy will foster and advance future that is more sustainable, innovative, and responsive to global challenges and lays down the Bio-vision for Viksit Bharat.

Conclusion

India's bio economy skyrocketed from \$10 billion in 2014 to over \$130 billion in 2024, with projections to reach \$300 billion by 2030, it is expected that biotechnology has huge potential for driving the next revolution of 21st Generation.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following:

1. Marine and Space Research
2. Climate Resilient Agriculture
3. Biopolymers and Enzymes

How many of the above sectors are focus areas under the BioE3 policy?

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

Answer: c

VIGYAN DHARA SCHEME

Why in News: The Union Cabinet has recently approved the Department of Science and Technology scheme namely 'Vigyan Dhara'

Key Details

- The Union Cabinet, chaired by the Prime Minister of India recently approved continuation of the three umbrella schemes, merged into a unified central sector scheme namely 'Vigyan Dhara' of Department of Science and Technology (DST).
- The scheme has three broad components:**
 - Science and Technology (S&T) Institutional and Human Capacity Building,
 - Research and Development.
 - Innovation, Technology Development and Deployment.
- The scheme will be implementation coterminous with the 15th finance Commission period from 2021-22 to 2025-26.
- The merger of the schemes into a single scheme would enhance efficiency in fund utilization and establish synchronization among the sub-schemes/programs.

About Vigyan Dhara Scheme

- The primary objective of the 'Vigyan Dhara' scheme is to promote S&T capacity building as well as research, innovation and technology development towards strengthening the Science, Technology and Innovation ecosystem in the country.
- Implementation of the scheme will strengthen the S&T infrastructure of the country by fostering well-equipped R&D labs in the Academic Institutions.
- The scheme endeavours to promote research in areas such as basic research with access to the international mega facilities, translational research in sustainable energy, water, etc. and collaborative research through international bilateral and multilateral cooperation.
- It will also contribute to building critical human resource pool to strengthen the science and technology landscape and expand the R&D base of the country towards improving the Full-Time Equivalent (FTE) researcher count.
- Focused interventions will be taken up to enhance the participation of women in the field of Science and Technology (S&T) with the ultimate goal of bringing gender parity in Science, Technology and Innovation (STI).
- The scheme would reinforce the efforts of the government towards promoting innovations at all levels, starting from school level to higher education, and for the industries and startups through targeted interventions.
- All the programs proposed under the 'Vigyan Dhara' scheme would be aligned with the 5-year goals of DST towards realising the vision of Viksit Bharat 2047.
- The research and development component of the scheme will be aligned in line with the Anusandhan National Research Foundation (ANRF).

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Vigyan Dhara Scheme:

1. It is a central sector scheme launched after merging three umbrella schemes.
2. The scheme is to be implemented for five years from 2024-25 to 2028-29.

Which of the statements above is/are correct?

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

Answer: a

GENOME EDITING

Why in News: Recently researchers have developed a new gene-editing tool that is small enough to edit plant genomes.

Key Details

- A team of researchers from the ICAR-National Rice Research Institute in Cuttack and from the Pennsylvania State University in the U.S. developed a plant genome editor consisting of a protein called ISDra2TnpB, derived from bacteria called *Deinococcus radiodurans* (famous for being able to survive extreme environmental conditions).
- ISDra2TnpB is less than half the size of Cas9 and Cas12.

About ISDra2TnpB

- TnpB is a protein made up of around 400 amino acid units.
- TnpB is a protein extracted from *D. radiodurans*, a prokaryotic bacteria, which has a different codon for lysine than do eukaryotes like plants.
- It belongs to a family of transposable elements, or transposons.
 - Transposons are parts of a genome that can move from one location to another.
 - They are known as jumping genes.
- In the new system, TnpB hitchhikes a ride on a piece of RNA that guides it to the target DNA sequence. Once there the TnpB binds with the sequence and eliminates it.
- The TnpB-based editors the researchers built can edit the plant genome using both base editing and transcription activation, two widely used techniques in plant synthetic biology.
- Moreover, researchers also experimented to deactivate TnpB and fuse it with another protein to create a 'hybrid' base editor.
- When accompanied by the guide RNA, this editor could swap out a single nucleotide in the DNA sequence.
 - This wasn't possible with the previous version, with active TnpB, because it tended only to delete DNA sequences and couldn't swap one sequence for another.
 - The new base editor can be demonstrated for crop innovation by facilitating the alteration of genes at the level of individual nucleotides.

Limitation of CRISPR Gene-Editing Tool

- CRISPR gene-editing tool allows scientists to increase crop yields and improve resistance to disease and anomalous weather through gene-editing.
- With the help of the CRISPR gene-editing tool CRISPR, scientists can precisely edit genomes to introduce desirable genetic traits or remove undesirable ones.
- However, there has been a critical obstacle: a commonly used form of the CRISPR system is too big for plant genomes.

- This system uses one of two proteins, Cas9 or Cas12, to target specific parts of the DNA. But they are too bulky for plant cells to accommodate.

The genome consists of two strands of DNA bonded to each other. Each strand is made up of building blocks called nucleotides. In turn, each nucleotide has three pieces; two are common to all of them whereas the identity of the third one can be one of four options: adenine (A), thymine (T), cytosine (C) or guanine (G). The DNA's 'sequence' refers to the order in which nucleotides containing these four compounds are arranged.

Conclusion

The researchers believed that ISDra2TnpB genome editing tool will help remove anti-nutrient factors from food crops, reduce their susceptibility to pests, and help rice crops become shorter and less prone to damage during cyclones.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. What is TnpB recently seen in news?

- A protein used in targeted gene editing.
- A biosensor used in the accurate detection of pathogens in patients.
- A gene that makes plants pest-resistant.
- A herbicidal substance synthesized in genetically modified crops.

Answer: a

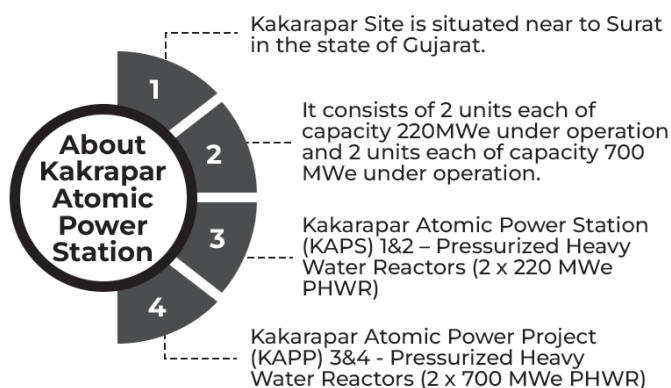
KAKRAPAR ATOMIC POWER STATION

Why in News: India's second home-built nuclear power reactor at Kakrapar Atomic Power Station (KAPS) in Gujarat started operating at its full capacity.

Key Details

- The Unit 4 of Kakrapar Atomic Power Station (KAPS 4 – 700 MW) has recently commenced operation at its full power of 700 MW. The unit had been operating at 90% before raising it to full power.
 - The full power operation of KAPS-4 after the smooth operation of its twin unit KAPS-3 at full power demonstrates the strength of the first of a kind indigenous 700 MW Pressurised Heavy Water Reactor (PHWR) design.
 - Fourteen more reactors of the same design are at various stages of implementation and are expected to commence operations progressively by 2031-32
- The power level of the unit was raised in line with the

permissions of the regulatory authority, the Atomic Energy Regulatory Board (AERB).



Nuclear Power Corporation of India Limited (NPCIL)

- NPCIL is a Public Sector Enterprise under the administrative control of the Department of Atomic Energy (DAE), Government of India.
- The Company was registered as a Public Limited Company under the Companies Act, 1956 in September 1987 with the objectives of operating atomic power plants and implementing atomic power projects for generation of electricity in pursuance of the schemes and programmes of the Government of India under the Atomic Energy Act, 1962.
- NPCIL also has equity participation in BHAVINI, another PSU of Department of Atomic Energy (DAE) which implements Fast Breeder Reactors programme in the country.
- NPCIL is responsible for design, construction, commissioning and operation of nuclear power reactors.
- NPCIL is a MoU signing, profit making and dividend paying company with the highest level of credit rating (AAA rating by CRISIL and CARE).
- NPCIL is presently operating 24 commercial nuclear power reactors with an installed capacity of 8180 MW.
- In addition, 10 more reactors with a total capacity of 7000 MW are in pre-project activities. These are expected to be completed progressively, taking the installed nuclear power capacity in the country to 22480 MW by 2031-32.

Atomic Energy Regulatory Board (AERB)

- The Atomic Energy Regulatory Board was constituted on November 15, 1983, by the President of India by exercising the powers conferred by the Atomic Energy Act, 1962 to carry out certain regulatory and safety functions under the Act.
- The regulatory authority of AERB is derived from the rules and notifications promulgated under the Atomic Energy Act and the Environment (Protection) Act, 1986.

Mission

- The Mission of the AERB is to ensure the use of ionizing radiation and nuclear energy in India does not cause undue risk to the health of people and the environment.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Kakrapar Atomic Power Station, a significant nuclear power plant in India, is located in which of the following state?

- (a) Maharashtra (b) Gujarat
(c) Rajasthan (d) Tamil Nadu

Answer: b

LIQUID WATER IN THE MARTIAN MID-CRUST

Why in News: Recently scientist for the first time have discovered presence of liquid water hidden deep within Mars mid crust.

Key Details

- The study, 'Liquid water in the Martian mid-crust', was published in the journal Proceedings of the National Academy of Sciences (PNAS).
- While scientists have known about water ice at the Martian poles for a long time, this is the first time they have discovered liquid water on the planet.
- According to the new study, there could be oceans' worth of liquid water deep in the rocky outer crust of Mars.
- For their study, the researchers used the data from NASA's Mars Insight Lander, which touched down on the planet back in 2018 and retired in December 2022.

Key Finding

- The NASA's Mars Insight Lander was equipped with a seismometer, which recorded four years' of seismic waves — created by Marsquakes and meteorite impacts — deep inside the planet. In total, Insight recorded more than 1,300 quakes while it was active.
 - The researchers examined the speed of these seismic waves and were able to determine what material they were most likely to be moving through.
 - To do so, they used "a geophysical model identical to one used to map underground aquifers and oil fields here on Earth, and employed it to analyse data collected by lander on Mars.
 - They found that the data are best explained if, deep below the surface of Mars, there lies a layer of fractured igneous rock, such as granite, whose cracks are filled with liquid water.
- The layer is located at depths of about 10 to 20 km in the Martian crust.
- The study suggests that the water could have seeped from

the surface billions of years ago when Mars harboured rivers, lakes, and possibly oceans.

Significance of Discovery

- The findings could help researchers better understand the water cycle of Mars, which in turn could unlock questions related to the evolution of the planet's climate, surface, and interior.
- The discovery could also provide impetus to the ongoing search for evidence of life on Mars.
- Although the discovery of liquid water does not mean that there is life on Mars, it sure raises the possibility of finding a habitable environment.
- However, the researchers believes that it would be a daunting task to drill a 10-20 km deep hole on Mars and extract the water.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Recently data from which of the Mars project is used in the study of liquid water in the Martian mid-crust?

- (a) Perseverance Rover (b) Curiosity Rover
(c) InSight lander (d) Odyssey orbiter

Answer: c

SOLAR PARABOLOID TECHNOLOGY

Why in News: Solar paraboloids technology can be instrumental in shaping the future of global energy by reducing carbon emissions and achieving net-zero targets.

Key Details

- The Government of India has taken initiatives to enhance local manufacturing and has been promoting research and projects in these areas.
- Aligned with its potential, solar paraboloids can emerge as a viable alternative for medium/high-grade heat generation applications and help in reducing reliance on fossil fuels.

About Solar Paraboloid Technology

- It is an advanced form of concentrating solar power (CSP) technology.
- It not only enhances the efficiency of solar energy capture but also addresses the limitations that have long plagued traditional photovoltaic (PV) systems.
- **Working**
 - Solar paraboloids operate using a Parabolic Trough Collector (PTC) system.
 - These systems consist of long, parabolic mirrors that

focus sunlight onto a receiver tube placed at the focal line of the mirror.

- The concentrated solar energy heats a fluid within the receiver, which can then be used to generate electricity or provide direct heat for industrial processes.

- **Benefits**

- Solar paraboloids are highly efficient in concentrating solar energy, which means that more electricity can be generated from the same amount of sunlight.
- This efficiency could lead to lower costs per unit of electricity produced, making solar energy more competitive with traditional fossil fuels.
- Another key benefit is its ability to operate at higher temperatures, up to 300°C, which significantly increases thermal efficiency. This is achieved by reducing heat losses through a smaller absorbing surface area.
- The technology can produce energy even in low-light conditions, making it a versatile solution for diverse environments.
- Solar paraboloid systems are scalable and can be deployed in various configurations, from small-scale applications to large solar farms.

Conclusion

Adopting solar paraboloids on a large scale can bring significant economic benefits, including reduced costs and increased competitiveness. However, challenges remain,

such as high upfront costs and infrastructure requirements. To overcome these barriers, governments and industries must invest in research and development, as well as provide incentives for early adopters.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding solar paraboloid:

1. It is an advanced form of concentrating solar power technology.
2. It enhances the efficiency of solar energy capture and addresses the limitations of traditional photovoltaic systems.
3. It can produce energy even without light, making it a versatile solution for diverse environments.

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)

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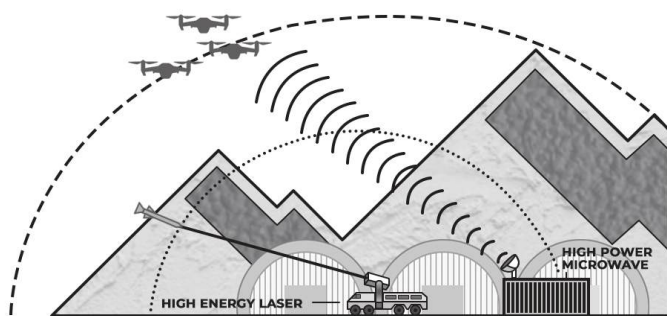
The Indian EXPRESS

DIRECTED ENERGY WEAPONS

Why in News: Though the interest in Directed Energy Weapons (DEWs) has been around for a long time, it is only recently that significant advancements have happened in the field. Number of countries including India have tested DEWs successfully.

What Are Directed Energy Weapons (DEWs)?

- Directed Energy Weapons (DEWs) are an advanced class of weapons that utilize concentrated energy to incapacitate or destroy targets.
- Unlike traditional kinetic or explosive weapons, DEWs focus on delivering devastating lethal energy generated by concentrated lasers, microwaves, or particle beams onto a target at a great speed.
 - The intense and concentrated beams from DEWs would disrupt or jumble up communications and other command, controlling, positioning, navigation and timing systems in the target in what is known as a soft kill or even destroy the target in a hard kill.



Types of Directed Energy Weapons

Laser Weapons

- Description:** These use focused beams of light to cause damage through intense heat.
- Applications:** Used for precise targeting of objects like drones, missiles, and enemy equipment. Modern examples include the U.S. Navy's Laser Weapon System (LaWS) and the Army's High Energy Laser Mobile Demonstrator (HEL-MD).

Microwave Weapons

- Description:** Emit high-frequency microwaves to disrupt electronic systems or cause harm to humans.
- Applications:** Used for disabling electronics, jamming

communications, or creating non-lethal effects on personnel. An example is the Active Denial System, which causes a burning sensation on the skin without causing permanent injury.

Particle Beam Weapons

- Description:** Use beams of charged or neutral particles to damage targets.
- Applications:** More theoretical and experimental, particle beams could potentially be used for missile defense or as an anti-satellite weapon.

High-Energy Radio Frequency (HERF) Weapons

- Description:** Deliver high-powered radio frequency energy to disrupt or damage electronic systems.
- Applications:** Designed to target and disable electronic equipment, including communications and navigation systems.

Advantages of Directed Energy Weapons

	Precision: DEWs can target specific components or areas with high accuracy, minimizing collateral damage.
	Speed: They operate at or near the speed of light, allowing them to engage targets almost instantaneously.
	Reduced Ammunition Costs: Once operational, DEWs don't require traditional ammunition, which can reduce operational costs compared to conventional weapons.
	Scalability: The power and range of DEWs can be adjusted based on mission needs.

Challenges and Limitations

Atmospheric Conditions: Weather and environmental factors such as fog, rain, or dust can attenuate or scatter energy beams, affecting effectiveness.	
Power Supply: High-energy DEWs require significant power, which can be a challenge for mobile or portable systems.	
Cooling Systems: High-power DEWs generate a lot of heat, necessitating advanced cooling systems to maintain operational efficiency.	
Range: The effective range of DEWs can be limited by the beam dispersion and the atmospheric conditions.	

Current and Future Applications

- **Military:** DEWs are being actively developed and deployed for various defense applications, including missile defense systems, anti-drone systems, and naval ship protection.
- **Law Enforcement:** Non-lethal DEWs are being explored for crowd control and area denial, such as the Active Denial System for controlling large crowds.
- **Space:** Research is ongoing into using DEWs for space defense, including the potential for asteroid deflection or satellite protection.

Future Trends

- **Integration with Autonomous Systems:** Combining DEWs with drones or autonomous vehicles could enhance their effectiveness and deployment options.
- **Advancements in Power and Cooling Technologies:** Improved power sources and cooling systems could expand the capabilities and applications of DEWs.
- **Increased Deployment:** As technology matures, DEWs are expected to become more prevalent in both military and civilian sectors.

Global Achievements

- Various countries like Russia, France, Germany, the United Kingdom, Israel, and China have developed DEWs.
- The United States has made huge investments in DEWs. Important DEWs of the USA are high-energy lasers (HEL) and high-powered microwaves (HPM), with various applications ranging from missile defense to disabling drones.

India's Achievements

- **1KW laser Weapon:** DRDO has tested a 1KW laser weapon which hit a target 250m away.
- **DURGA-II:** DRDO has initiated a project DURGA II (Directionally Unrestricted Ray-Gun Array), which is a 100-kilowatt lightweight DEW.
- **Kilo Ampere Linear Ejector (KALI):** KALI is a DEW particle accelerator developed by DRDO and Bhabha Atomic Research Center. This DEW will fire intense electron pulses at incoming missiles and aircraft, destroying onboard electronic circuits.
- **Hypersonic Technology Development:** Hypersonic technology in India has been developed and tested by both DRDO and ISRO.

Conclusion

The field of DEWs is rapidly evolving, with ongoing advancements in technology and increasing interest from both military and civilian sectors. The development and deployment of DEWs represent a significant shift in weaponry, offering new capabilities and challenges in modern defense and security strategies.

EXPECTED QUESTIONS ON UPSE CSE

Prelims MCQ

Q. Consider the following statements regarding Directed Energy Weapons (DEWs):

1. DEWs are an advanced class of weapons that utilize concentrated energy to incapacitate or destroy targets.
2. The effective range of DEWs can be very high by the beam dispersion and the atmospheric conditions.
3. DURGA and KALI are two important DEWs of India developed by ISRO.

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

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

Answer: a (1 only)

Descriptive Question

Q. What are Directed energy weapons? How can DEWs revolutionize India's defense capabilities? Enumerate some of India's achievements in DEWs? [10 marks] [150 words]

A JOINT MILITARY EXERCISES IN THE SOUTH CHINA SEA

Why in News: Recently, naval and air forces from the US, Australia, Canada, and the Philippines carried out joint exercises in the Disputed South China Sea, citing a commitment to international law and free navigation.

Issue about the South China Sea?

- The South China Sea is situated just south of the Chinese mainland and is bordered by the countries of Brunei, China, Indonesia, Malaysia, Philippines, Taiwan and Vietnam.
- The South China Sea is one of the most strategically critical maritime areas and China eyes its control to assert more power over the region.
- China stakes claim on the 90% of the South China Sea, and is based on the U-shaped nine-dash line adopted from Chinese maps in the 1940s represents China's claim over the sea and all the land features that are contained within the line.
- The two primary points of contention are the Spratly Islands and the Paracel Islands in the sea.
- In the past few years, the country has also tried to stop other nations from conducting any military or economic operation without its consent, saying the sea falls under its Exclusive Economic Zone (EEZ).
- China has physically increased the size of islands or created new islands altogether in the sea, according to the Council on Foreign Relations (CFR).

- In addition to piling sand onto existing reefs, China has constructed ports, military installations, and airstrips—particularly in the Paracel and Spratly Islands, where it has twenty and seven outposts, respectively. China has militarised Woody Island by deploying fighter jets, cruise missiles, and a radar system.
- Since 2013, China has engaged in unprecedented dredging and artificial island-building in the Spratlys, creating 3,200 acres of new land, along with a substantial expansion of its presence in the Paracels.
- The South China Sea is home to rich fishing grounds — a major source of income for millions of people across the region. The BBC reported that more than half of the world's fishing vessels operate in this area.
- The United Nations Conference on Trade and Development estimates that over 21% of global trade, amounting to \$3.37 trillion, transited through these waters in 2016.
- According to UN Conference on Trade and Development (UNCTAD), that 80% of global trade by volume and 70% by value is transported by sea. Of the total volume, 60% passes through Asia, with the South China Sea carrying an estimated one-third of global shipping.

Importance of South China Sea

- There are 11 billion barrels of oil and 190 trillion cubic feet of natural gas in deposits under the South China Sea, according to the estimates of the United States Energy Information Agency.



UN Convention on the Law of the Sea (UNCLOS)

- The convention allows state parties to claim 12 nautical mile (nm) territorial seas and 200 nm exclusive economic zones (EEZs) around their coastlines and “naturally formed” land features that can support human habitation.
- Land features that are above water at high tide but not habitable can also claim 12 nm territorial seas, as can other features that cannot support life, such as rocks.
- UNCLOS also requires coastal states to respect the rights of non-coastal states to freedom of navigation, overflight, and innocent passage.

Ruling from the Permanent Court of Arbitration

- In 2013, Manila initiated arbitral proceedings against China under UNCLOS, claiming its actions had violated the convention. Beijing refused to participate, deeming the Permanent Court of Arbitration (PCA) illegal.
- In 2016 the PCA rejected China’s “nine dash line”. The PCA ruling said China’s claims were inconsistent with UNCLOS.
- The PCA tribunal concluded that if China had any historic rights to resources in the South China Sea, those rights were overridden by the rights established under the EEZ in the convention.
- Beijing rejected the arbitration, and in response issued a white paper that claimed that “China’s sovereignty and relevant rights and interests in the South China Sea have been established in the long course of history, and are solidly grounded in history and law.”

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following statements regarding the South China Sea and the United Nations Convention on the Law of the Sea (UNCLOS) is/are correct?

1. The United Nations Convention on the Law of the Sea (UNCLOS) allows state parties to claim a 200 nautical mile exclusive economic zone (EEZ) around their coastlines.
2. The Permanent Court of Arbitration (PCA) ruled in favor of China’s “nine-dash line” claim in the South China Sea.
3. The South China Sea is home to an estimated one-third of global shipping traffic.

Select the correct answer using the code given below:

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

Answer: b

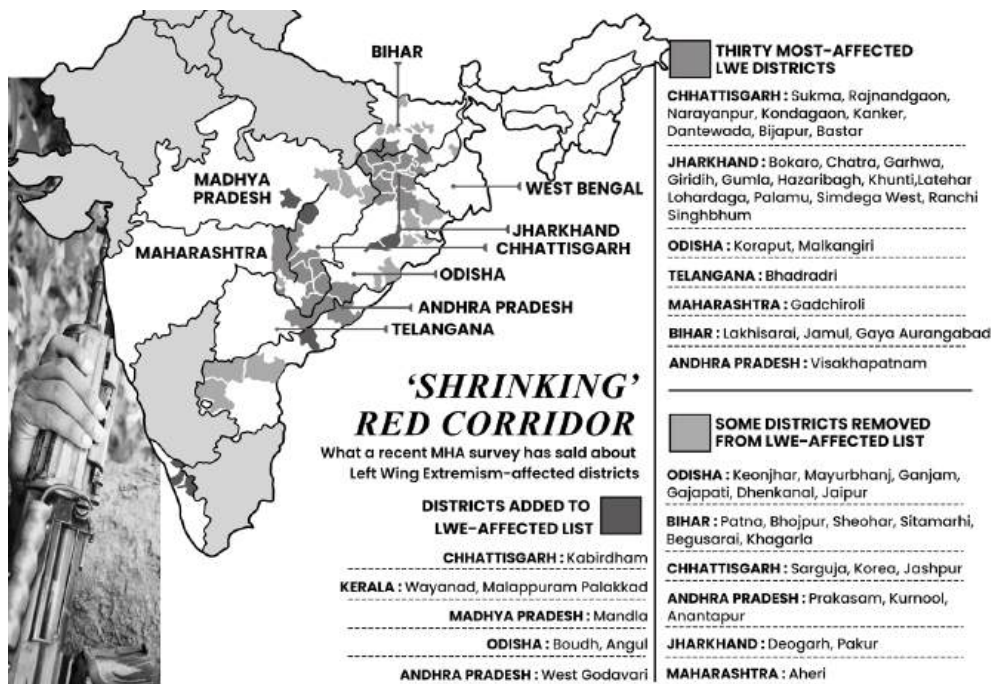
Descriptive Question

- Q. Discuss the strategic importance of the South China Sea and the role of international law in addressing the territorial disputes in the region. How has the Permanent Court of Arbitration’s ruling impacted the claims and actions of China and other claimant nations? [15 marks] [250 words]

LEFT WING EXTREMISM

Why in News: Recently the Union Home Minister while addressing a press conference in Raipur said that Left Wing extremism will be completely eliminated in the country before March 2026.

Key Details



- According to the Minister, government has worked to instill faith among the people in development instead of the ideology of left-wing extremism.
- Home Ministry and Chhattisgarh government will jointly run a campaign to educate people left illiterate due to LWE
- Chhattisgarh government has set a target of 100% saturation of all government schemes by March 2025.
- Chhattisgarh government will soon bring a new surrender policy so that youth will be able to give up arms and join the mainstream
- Union Home and Minister of Cooperation said that in 2022, for the first time in 4 decades, the number of deaths due to left-wing violence has come down below 100.
 - He pointed out that the lowest number of LWE-related violent incidents have been reported between 2022 and 2024.
 - Shri Amit Shah said that the 'Bastariya Battalion' was raised in CRPF in 2017 in which all the jawans were from the Bastar region.

Government Approach: To address the LWE problem in an effective manner, the Government has formulated a **National Policy and Action Plan** adopting a multi-pronged strategy in the areas of security, development, ensuring rights & entitlement of local communities etc.

- **SAMADHAN doctrine:** It was introduced as a one stop solution for LWE affected areas; it includes both short- and long-term government policies to deal with LWE.

SAMADHAN

- S** Smart leadership
- A** Aggressive strategy
- M** Motivation and training
- A** Actionable Intelligence
- D** Dashboard Based KPIs (Key Performance Indicators) and KRAs (Key Result Areas)
- H** Harnessing Technology
- A** Action plan for each Theatre
- N** No access to Financing

- In 2015, **National Strategy** to counter LWE was formed with a multipronged approach to combat it.
- **Aspirational District:** The Ministry of Home Affairs has been tasked with the monitoring of Aspirational districts programme in 35 LWE affected districts.
- **Security Related Expenditure (SRE) Scheme:** This a sub scheme of the Umbrella **Scheme Modernization of Police Forces**. Under it, the Central Government reimburses to 11 LWE affected States the Security Related Expenditure relating to training and operational needs of security forces, ex-gratia payment, compensation to Left Wing Extremist cadres who surrendered, community policing, Security related infrastructure for village defence committees and publicity materials.
- **Special Central Assistance (SCA) for 30 most LWE affected districts:** This is a sub-scheme of the Umbrella Scheme, 'Modernization of Police Forces'. The main objective of the Scheme is to fill the critical gaps in Public infrastructure and Services, which are of emergent nature.
- **Construction of Fortified Police Stations:** The Home Ministry had sanctioned construction of 400 Fortified Police Stations in 10 LWE affected States.
- **Road Requirement Plan:** This Scheme is being implemented by the Ministry of Road Transport & Highways for improving road connectivity in 34 LWE affected districts of 8 States. RRP II has also been launched.
- **LWE Mobile Tower Project:** To improve mobile connectivity in the LWE areas, the Government approved installation of mobile towers in LWE affected States and 2335 mobile towers have been installed in Phase-I.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Which of the following is concerned with Left Wing Extremism (LWE)?
- Operation Black Thunder
 - Operation Meghdoot
 - Operation All Clear
 - Operation Green Hunt

Answer: d

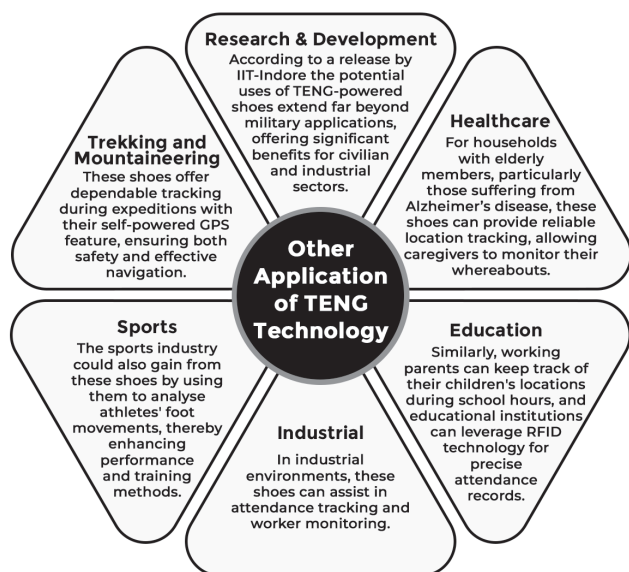
TRIBO-ELECTRIC NANOGENERATOR (TENG) TECHNOLOGY

Why in News: IIT Indore has developed shoes that generate electricity, track location in real time for Armed forces.

Key Details

- These footwear harnesses Tribo-Electric Nanogenerator (TENG) technology and has features that can enhance the safety and coordination of military personnel while helping boost operational efficiency and security.

- The shoes are using Tribo-Electric Nanogenerator (TENG) technology that can generate electricity with every step.
- This stored energy can then power small electronic devices, providing a portable and renewable energy source for soldiers in the field, while offering advantages such as substantial output power, cost-effectiveness, simplicity in production, and high efficiency.
- The shoes are equipped with sophisticated GPS and Radio Frequency Identification (RFID) technology with a 50-metre range and a satellite-based GPS module that can help with precise live location tracking of military personnel.
- This real-time tracking can help in enhancing strategic coordination and ensure the safety of soldiers during operations.
- IIT Indore has already supplied the first batch of 10 pairs of these shoes to the Defence Research and Development Organisation (DRDO).



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Tribo-Electric Nanogenerator (TENG)-powered shoes developed by IIT Indore, consider the following statements:

1. The TENG-powered shoes generate electricity with every step, providing a renewable energy source for soldiers.
2. The shoes are equipped with GPS and Radio Frequency Identification (RFID) technology for real-time location tracking.
3. These shoes are exclusively developed for military use and have no civilian applications.

Which of the statements given above is/are correct?

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

Answer: b

INDIA - USA DEFENCE SUPPLY PACT

Why in News: Recently India and US have signed a Security of Supply Arrangement (SOSA) and Memorandum of Agreement regarding the Assignment of Liaison Officers.

Two New Agreements

- **SOSA**
 - Under SOSA, the US and India will provide reciprocal priority support to each other for goods and services that promote national defence.
 - India is the 18th SOSA partner of the US.
- **MOU ON LIAISON OFFICERS**
 - The Memorandum of Agreement regarding the Assignment of Liaison Officers is a progression on a decision taken earlier to increase information-sharing between India and the US, and to post Indian armed forces officers in key strategic US Commands.

India - USA Defence Cooperation Milestones

- 2013: Joint US-India Declaration on Defence Cooperation
- 2015: Framework for the US-India Defence Relationship
- 2023 Roadmap
 - It envisioned the conclusion of SOSA and the RDP Agreement.
 - Priority areas of cooperation identified in the roadmap included Intelligence, Surveillance, and Reconnaissance (ISR), Undersea Domain Awareness, Air Combat and Support, including Aero engines, munitions systems, and mobility.
- **iCET**
 - The US-India initiative on Critical and Emerging Technology (iCET) was discussed in Jan 2023 to expand the strategic technology partnership and defence industrial cooperation.
- **INDUS-X**
 - India-US Defence Acceleration Ecosystem (INDUS-X), took forward the commitment to build a defence innovation bridge under iCET.
- **Foundational Agreements**
 - In 2002, India and US signed the General Security of Military Information Agreement (GSOMIA) to facilitate sharing of military information.
 - In 2019, the Industrial Security Annex (ISA) to the GSOMIA was signed to facilitate the exchange of classified information between the defence industries of the two countries.
 - Logistics Exchange Memorandum of Agreement (LEMOA) of 2016 established the basic terms, conditions, and procedures for reciprocal provision of logistic support, supplies, and services between the two militaries.

- In 2018, the Communications Compatibility and Security Agreement (COMCASA), an India-specific version of the Communications and Information Security Memorandum of Agreement (CISMOA), was signed to secure military communication between the countries, facilitate access to advanced defence systems, and enable India to optimally utilise its existing US-origin platforms.
- Basic Exchange and Cooperation Agreement (BECA) of 2020 aimed to facilitate the sharing of military information including maps, nautical charts, and other unclassified imagery and data.

Other Military Deals and Sales

- In 2012, the Defence Trade and Technology Initiative (DTTI) agreement was signed to promote industrial cooperation and defence trade between the two countries.
- In 2016, the US designated India as a Major Defence Partner.
- In 2018, India was elevated to Strategic Trade Authorisation tier 1 status, which gave it licence-free access to a range of military and dual-use technologies regulated by the US Department of Commerce.
- Memorandum of Intent between the US Defence Innovation Unit (DIU) and the Indian Defence Innovation Organization-Innovation for Defence Excellence (DIO-IDEX).
- Military hardware and weapon procurements
 - MH-60R Seahawk multirole helicopters
 - Sig Sauer Rifles
 - M777 ultra-light howitzers

Conclusion

Recently both India and USA have agreed to advance priority co-production projects including jet engines, unmanned platforms, munitions, and ground mobility systems under the 2023 US-India Roadmap for Defence Industrial Cooperation.

NAVAL NUCLEAR PROPULSION AGREEMENT

Why in News: Recently, AUKUS partners have signed the trilateral agreement for cooperation on naval nuclear propulsion.

Key Details

- Agreement is signed among the Government of Australia, the Government of the United Kingdom of Great Britain and Northern Ireland, and the Government of the United States of America.
- The Agreement will enable AUKUS partners to continue to share submarine naval nuclear propulsion information between the partners, and allow the United Kingdom and the United States to transfer material and equipment

to Australia required for the safe and secure construction, operation and sustainment of conventionally armed, nuclear-powered submarines under the AUKUS partnership.

- The Agreement re-affirms, and is consistent with, AUKUS partners' respective existing international non-proliferation obligations.
 - As a non-nuclear-weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons, Australia has re-affirmed unequivocally that it does not have and will not seek to acquire nuclear weapons.
- The agreement will replace the Exchange of Naval Nuclear Propulsion Information Agreement, which entered into force in 2022.

AUKUS: The Trilateral Security Partnership Between Australia, U.K. and U.S.

- In September 2021, leaders of Australia, the United Kingdom, and the United States announced the creation of an enhanced trilateral security partnership called "AUKUS."
- AUKUS is intended to strengthen the ability of each government to support security and defense interests, building on longstanding and ongoing bilateral ties.
- It will promote deeper information sharing and technology sharing; and foster deeper integration of security and defense-related science, technology, industrial bases and supply chains.
- The **first initiative** under AUKUS is a commitment to support Australia in acquiring nuclear-powered submarines for the Royal Australian Navy.
- The **second initiative** intends to enhance joint capabilities and interoperability, focusing on cyber capabilities, artificial intelligence, quantum technologies and additional undersea capabilities.

EXERCISE TARANG SHAKTI

Why in News: India's first multinational air exercise Tarang Shakti recently begins in Coimbatore

Key Details

- Tranag Shakti is the first multinational air exercise of the Air Force to be conducted on Indian soil after a span of 61 years
- The exercise is to be held in two phases. The first will be held in southern India (Sulur, Tamil Nadu Air Base) in the first two weeks of August and the second will be in the western sector (Jodhpur, Rajasthan Air Base) from the end of August to mid-September.
- The Indian Air Force will be showcasing an impressive lineup of its aerial assets, including the Rafale, Sukhoi, Mirage, Jaguar, Tejas, MiG-29, Prachand, Rudra attack helicopters, ALH Dhruv, C-130, IL-78, and AWACS systems.
- Thirty countries, including the U.S., Germany, France,

Australia, UAE, and Singapore, will showcase their fighter jets.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to India's air exercise "Tarang Shakti," consider the following statements:

1. Tarang Shakti is the first multinational air exercise conducted by the Indian Air Force.
2. The exercise will be held exclusively in southern India, specifically at the Sullur Air Base in Tamil Nadu.
3. Germany is one of the participating countries and will deploy an A-400M transport aircraft.
4. The exercise aims to enhance coordination among diverse aircraft formations and reinforce strategic ties with participating nations.

Which of the statements given above are correct?

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

Answer: b

EXERCISE MITRA SHAKTI

Why in News: The 10th edition of India- Sri Lanka Joint Military Exercise MITRA SHAKTI was recently commenced at Army Training School, Maduru Oya, Sri Lanka.

Key Details

- Joint Exercise MITRA SHAKTI is an annual training

event conducted alternatively in India and Sri Lanka. Last edition was conducted in Pune in Nov 2023.

- Tactical drills to be rehearsed during the exercise include Response to a Terrorist Action, Establishment of a Joint Command Post, Establishment of an Intelligence & Surveillance Centre, Securing of a Helipad / Landing Site, Small Team Insertion & Extraction, Special Heliborne Operations, Cordon & Search Operations besides employment of Drones and Counter Drone Systems, among others.

Objective of the Exercise

- Aim of the Joint Exercise is to enhance joint military capability of both sides to undertake counter insurgency operations in a Sub Conventional scenario under Chapter VII of the United Nations Mandate.
- The exercise will focus on operations in the semi-urban environment.
- Exercise MITRA SHAKTI will enable both sides to share best practices in Tactics, Techniques and Procedures of conducting joint operations.
- It will facilitate developing interoperability, bonhomie and camaraderie between the two armies.
- The Joint Exercise will also enhance defence cooperation, further augmenting bilateral relations between the two friendly nations.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about joint military exercise Mitra Shakti.

1. It is annual military exercise between India and Indonesia.
2. Recently 10th edition of the exercise was held Jakarta.
3. The joint exercise aims to enhance defence cooperation between India & Indonesia.

How many of the above statements are correct?

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

Answer: d

EXERCISE PARVAT PRAHAR

Why in News: The Indian Army has recently conducted a strategic military exercise, 'Parvat Prahara', in Ladakh, focusing on high-altitude warfare and operations.

About Parvat Prahara Exercise

- The 'Parvat Prahara' (Mountain Strike) is a strategic military exercise primarily focused on high-altitude mountain warfare, developing and validating tactics to be used in a war-like situation against China in Eastern Ladakh.

- It is a **fortnight long exercise** that aims on **high-altitude warfare and operations**.
- It is crucial for maintaining the readiness and effectiveness of the Army in the region, which is close to the India-China border. This exercise is primarily to train the re-oriented corps to get up to speed for mountain warfare.
- It involves simulating real-world combat scenarios to train soldiers in the unique challenges posed by such terrains and train soldiers on how to efficiently operate in the harsh climate of the Himalayas.
- In 2021, it was reorganised under the **Mountain Strike Corps** of the Northern Command to focus on China after the standoff with China in Eastern Ladakh and operations in sensitive region along the Line of Actual Control (LAC)
- Tanks like the T-72 and T-90, K-9 Vajra-T self-propelled howitzers, unmanned aerial vehicles (UAVs), swarm drones, loitering munitions, anti-air defence systems, and helicopters were participated in this exercise.

The Chinese standoff began after a series of clashes between the Indian Army and Chinese soldiers at Pangong Tso Lake and Galwan Valley in May and June 2020. The clashes in Galwan, on the intervening nights of June 15-16 2020, left twenty Indian and an unknown number of Chinese soldiers dead.

Since then, India has deployed more than 50,000 additional troops, along with 500 tanks, artillery, and supporting infrastructure, in the mountains of Eastern Ladakh.

The standoff, which is now in its fifth year, shows no signs of easing since the Chinese do not seem interested in restoring the status quo before 2020, which has been a consistent demand of India in several military and civilian meetings held to defuse the standoff.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. "Parvat Prahar," recently in the news, refers to which of the following?

- A joint military exercise between India and Bhutan
- An Indian Army operation aimed at enhancing preparedness in high-altitude regions
- It is a cultural festival celebrated in the Himalayan region
- Development of civilian infrastructure in mountainous areas

Answer: b

Free Initiative by Chahal Academy



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CASE STUDY- WATER TANKER ECONOMY

Why in News: The recent water crisis in various major cities of India has revealed the emerging concept of water tanker economy.

Key Details

- In Delhi, residents of some areas battle scarcity amidst tanker mafia monopoly.
- Nexus between Water Mafia and Politicians controls supply in Bengaluru which led residents of Bengaluru line up for receiving water.
- Chennai grapples with tanker cartels' stranglehold on water needs.
- In hydrologically rich Kolkata, the poor pay for the water supply of rich people.

City Wise Case Studies

Present Status of Water Tanker Economy in Delhi:

- Families are completely reliant on water from private tankers to meet their needs.
- The tanker's water is only used for bathing, washing clothes and cleaning utensils. Drinking water must be arranged separately.
- According to a recent study conducted by the Delhi-based think tank Centre for Science and Environment (CSE) in Sangam Vihar, this area with a population of more than 1 million receives only 45 litres of water per person per day from all sources combined, despite the fact that the central government's standard for urban areas is 135 litres per day. This implies that only a third of the required quantity is available.

Why Water Tank Economy Grew in Delhi:

- Residents of some areas of Delhi faced difficulty in access to adequate and clean drinking water which led water tanker businesses to utilize the opportunity.
- Nexus between the water tanker mafia and politicians in Delhi.
- Lack of universal coverage of government water supply in all areas. The government supply of water does not reach their home. Delhi Jal Board (DJB) water is available in a limited quantity
- As per court affidavit submitted by Board states, to the National Green Tribunal (NGT). Only 32 of 40 STPs (sewage treatment plants) mentioned are operational, .

Positive impact on various stakeholders:

- Ensure timely supply of drinking water to the residents.
- Commercialization of water as a commodity provides employment to large chunk of people.

Negative Impacts on various stakeholders:

- Residents spend an average of Rs 12,000 on tanker water during the three months of summer (May-July), approximately Rs 30,000 on tankers each year.
- Due to collusion between private tanker mafia and DJB officials, water from government tankers is not delivered to the needy, allowing the tanker business to profit.
- Every family cannot afford a tanker
- Tanker mafias run a number of illegal borewells which will affect ground water level.

Response of Various stakeholders:

- Most residents have built underground tanks inside their homes to store water, as well as tanks on their roofs and in the street.

Present Status of Water Tank Economy in Bengaluru:

- Water tanker mafia is one of many lobbies that work closely with political parties. help us with the elections and we will get back your investment in the summer.
- Tanker operators get water while the Bengaluru Water Supply and Sewerage Board (BWSSB) does not, despite being a government organization.
- Despite owning the pipelines, rivers, reservoirs, tanks, lakes and all water bodies, the BWSSB is unable to supply water to the citizens, while the tanker operators can.
- Residents from various neighborhoods in Bengaluru report being held hostage by these operators, who charge exorbitant prices for basic water supply.
- A standard 12,000-litre tanker can cost between Rs 1,200 and Rs 3,000, depending on urgency and location.
- Prices may increase during the dry season or when the BWSSB's supply is disrupted.

Why Water Tank Economy Grew in Bengaluru:

- Lack of strict regulatory frameworks and strong enforcement.

Positive impact on various stakeholders

- Ensure timely supply of drinking water to the residents.

Negative Impacts on various stakeholders:

- Metropolis of Bengaluru, known as the Silicon Valley of India led IT techies leaving for their hometowns.
- Water was available for those who could afford it. It widens the rich-poor gap.
- It's a classic case of supply and demand being manipulated to benefit a few at the expense of many.
- Middle-class families in apartment complexes, gated communities and informal settlements alike depended on tankers.
- High-rise buildings inhabited by high-income groups. They do not mind paying for tanker water and do not mind if their taps go dry. These are the first areas in the city to experience dry taps.

Response of Various stakeholders:

- Citizens' groups and non-governmental organisations are stepping up their efforts to address the crisis. Initiatives like "Save Bangalore's Lakes" and "Borewell Recharging Projects" aim to replenish the city's groundwater levels and reduce tanker dependency.
- The tanker operators have created a parallel system that exploits the city's vulnerabilities

Present Status of Water Tank Economy in Chennai:

- IT parks, high-rise apartments, and commercial complexes, have become the epicenter of a lucrative and contentious water tanker cartel operation, fueled by the area's chronic water shortages.

Why Water Tank Economy Grew in Chennai:

- Daily water demands far exceed municipal supply, residents and businesses along the corridor have increasingly turned to private water tankers to bridge the gap.
- This reliance has enabled a network of water tanker operators to carve out a profitable niche, often at the expense of desperate customers.
- Behind this thriving business is a web of corruption and collusion.
- Local officials responsible for regulating water supply and tanker operations are frequently complicit.
- The private water tankers have an association where they set prices.

Positive impact on various stakeholders:

- Ensure timely supply of drinking water to the residents.

Negative Impacts on various stakeholders:

- The tankers frequently draw water from unregulated and sometimes illegal borewells.
- This water is rarely treated or tested, posing serious health risks to users.

Present Status of Water Tank Economy in Kolkata:

- According to sources within the Kolkata Municipal Corporation (KMC). Kolkata, a city traditionally rich in water

resources, is now supplying 5.5 million litres of water daily through tankers despite producing sufficient water for its residents.

- The situation in the city, built on a deltaic topography with the Hooghly River nearby, hints at high wastage and distributional failures.
- Kolkata produces 479 million gallons daily (MGD), or 2,180 million litres daily (MLD), including about 182 MLD of groundwater.
- Of this, around 1,700 MLD is designated for domestic use. Considering the city's estimated 5 million population, the requirement is approximately 750 MLD.
- Even accounting for the additional 5 million people who frequent the city daily, the produced water should suffice

Why Water Tank Economy Grew in Kolkata:

- Kolkata's groundwater ranges from fresh to brackish with high hardness and iron levels, as well as occasional arsenic and manganese.
- Salinity, due to chloride content, is also a key issue.
- In the northern, southern, and central parts of the city, groundwater is often unsuitable for drinking due to contamination with sewage
- Unplanned urbanization exacerbates these problems.

Response of Various stakeholders:

- Although the government does not charge domestic users, both poor and rich often pay illegal suppliers in water-stressed areas.

Water Tank Economy & Sustainability:

- Tanker water markets (TWM) supply water services in many urban areas, including those unconnected to public infrastructures.
- Notwithstanding they have been associated with outcomes in conflict with sustainability goals of water policy, e.g., through inequitable and unaffordable supply or by contributing to groundwater overexploitation.
- We use the concept of sustainable access, which combines notions of what constitutes access to water and what characterizes sustainable supply of services.
- The available evidence suggest that TWM have two key functions in urban water systems:
 - They provide services at otherwise unavailable level, particularly with respect to the temporal availability and spatial accessibility of the service.
 - They extend access to areas without or with low-quality network supply, typically low-income communities on the fringe of cities.
- From the perspective of sustainable access, we find that TWM can provide high service levels and thus fill a specific gap in the landscape of urban water services.
- Due to comparatively high prices, however, it is unlikely that these services are affordable for all.
- The combination of heterogeneous access to cheaper (subsidized) piped water and marginal pricing in TWM results in allocation outcomes that are not coherent with existing notions of equitable access to water.

- However, there is little convincing evidence that TWM necessarily result in unsustainable water use.
- The urban water governance in the studied areas is frequently characterized by a lack of effective institutions, which impedes the regulation or formalization of TWM.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. In light of the Indian cities facing severe water stress and scarcity especially during summers, critically examine the water tanker economy and associated issues arising out of it. [15 marks] [250 words]

CASE STUDY - CARE ECOSYSTEM

Why in News: The development of a care economy is critical for the long-term growth of India's economy and for the balanced development of India's society.

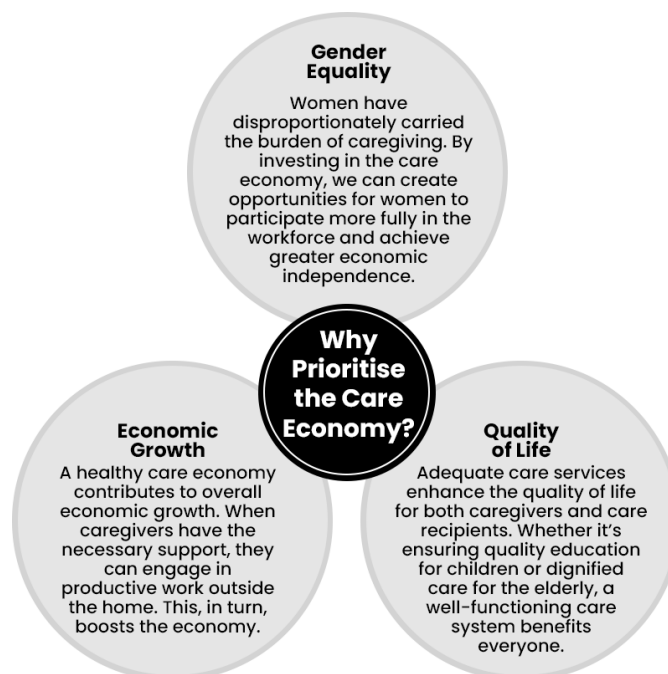
About Care Economy

- It encompasses all the activities related to caregiving, both paid and unpaid. It includes childcare, eldercare, care for people with disabilities, and other forms of support.
- While traditionally much of this work has fallen on women within families, there's a growing recognition that it's a shared responsibility that affects everyone.

Need for a Care Economy Strategy in India

- **Changing Demographics:** India's demographic landscape is expected to change between 2020 to 2050, necessitating more elderly care alongside continuing levels of childcare.
 - A recent study from the United Nations Population Fund finds that as of 2022, about 25% of India's population is between the ages of 0-14 years, and 10.5% is above 60 years, i.e. about 360 million children and 147 million elderly persons require care.
 - Over the next few decades, not only will the population grow, but there will also be a demographic transition.
 - By 2050, the proportion of elderly persons is expected to increase to 20.8% of the population, i.e. about 347 million persons.
 - Moreover, even as the proportion of children reduces marginally to 18%, the number of children will still be close to 300 million.
- **Ageing Population:** As life expectancy increases and birth rates decline, the proportion of elderly individuals in our society is rising. This demographic shift necessitates more attention to elderly care.
- **Continuing Childcare:** Alongside the ageing population, childcare remains crucial. Families still need support for raising children, ensuring their healthy development, and balancing work and family responsibilities.

- **Gender Inequality:** Women's active participation in the economy is crucial for reducing gender inequality. However, India faces a significant challenge: a low female labour force participation rate (FLFPR).
 - According to the Economic Survey 2023-24, India's FLFPR was 37% (2022-23), significantly below the world average of 47.8%. One key reason behind this disparity is the disproportionate burden of care that women bear within families.
- **Care Burden:** Women in India shoulder multiple care responsibilities, ranging from childcare to looking after other household members—such as the elderly, sick, and disabled.
 - Additionally, they perform substantial unpaid domestic work. In fact, women aged 15-64 years spend about three times more time daily on unpaid domestic work than men.
 - It often prevents women from participating fully in the workforce.
- **Childcare as a Focus:** To increase women's participation in the labour force, attention is now turning toward childcare.
 - Some State governments have been working on building support services through the existing Anganwadi network.
 - In the 2024-25 Budget, there was a 3% increase in the Ministry of Women and Child Development's budget for the integrated child care and nutrition program (Saksham Anganwadi and Poshan 2.0 scheme).
- **Beyond Childcare:** While childcare is crucial, we must recognize that women are primary caregivers across the entire life course of household members. Therefore, their care responsibilities need to shift elsewhere.



Conclusion

The shift in India's demographic landscape implies the need to strategically invest in healthcare, social support, and other care infrastructure to cater to the evolving needs of an ageing population, alongside continuing levels of childcare services. India needs a comprehensive policy that defines the care ecosystem from a life course perspective. A committee of the Ministries of Women and Child Development, Health and Family Welfare, Labour and Employment, Social Justice and Empowerment, and Skill Development and Entrepreneurship would be ideal to initiate the process.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. The development of a care economy is critical for the long-term growth of India's economy and for the balanced development of India's society. Comment. [10 marks] [150 words]

PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN

Why in News: The World Health Organization (WHO) has recently declared mpox (formerly known as monkeypox) a Public Health Emergency of International Concern (PHEIC).

Key Details

- Mpox was declared PHEIC following its outbreak in the Democratic Republic of the Congo (DRC), Africa, and subsequently spreading to over a dozen African countries.
- In the days following the PHEIC declaration, cases of mpox were identified in Sweden, Pakistan and the Philippines, indicating that the virus has likely spread beyond the African continent.
- As countries closely monitor the mpox outbreak, the demand for vaccines is expected to surge.
- The mpox outbreak presents an opportunity to apply lessons from the COVID-19 pandemic.

Mpox

- Mpox is an illness caused by the monkeypox virus.
- It is a viral infection which can spread between people, mainly through close contact, and occasionally from the environment to people via things and surfaces that have been touched by a person with mpox.
- In settings where the monkeypox virus is present among some wild animals, it can also be transmitted from infected animals to people who have contact with them.

Symptoms

- Mpox can cause a range of signs and symptoms. While some people have less severe symptoms, others may develop more serious illness and need care in a health facility.

- Common symptoms of mpox include a **rash** which may last for 2–4 weeks.
- The rash looks like blisters or sores, and can affect the face, palms of the hands, soles of the feet, groin, genital and/or anal regions.
- This may start with, or be followed by, fever, headache, muscle aches, back pain, low energy and swollen glands (lymph nodes).
- In most cases, the symptoms of mpox go away on their own within a few weeks with supportive care, such as medication for pain or fever.
- However, in some people, the illness can be severe or lead to complications and even death. According to available data, between 0.1% and 10% of people with mpox have died.
- Newborn babies, children, people who are pregnant and people with underlying immune deficiencies such as from advanced HIV disease may be at higher risk of more serious mpox disease and death.

Spread of Mpox

From person to person

- Mpox spreads from person to person mainly through close contact with someone who has mpox.
- Close contact includes skin-to-skin and mouth-to-mouth, or mouth-to-skin contact, and can also include being face-to-face with someone who has mpox (such as talking or breathing close to one another, which can generate infectious respiratory particles).
- It is also possible for the virus to persist for some time on clothing, bedding, towels, objects, electronics and surfaces that have been touched by a person with mpox.
- The virus can also spread during pregnancy to the fetus, during or after birth through skin-to-skin contact, or from a parent with mpox to an infant or child during close contact.

From animals to humans

- Someone who comes into physical contact with an animal which carries the virus, such as some species of monkeys or a terrestrial rodent (such as the tree squirrel) may also develop mpox.
- The virus can also be caught through eating contaminated meat which is not cooked thoroughly.

From humans to animals

- There have been a few reports of the virus being identified in pet dogs. However, it has not been confirmed whether these were true infections or whether the detection of virus was related to surface contamination.

Treatment

- Many years of research on therapeutics for smallpox have led to the development of products that may also be useful for treating mpox.

- An antiviral developed to treat smallpox (tecovirimat) was approved in January 2022 by the European Medicines Agency for the treatment of mpox under exceptional circumstances.

Vaccine

- There are vaccines recommended by WHO for use against mpox.
- At present, WHO recommends use of **MVA-BN** or **LC16 vaccines**, or the **ACAM2000 vaccine** when the others are not available.
- The Modified Vaccinia Ankara-Bavarian Nordic (MVA-BN), also known as Jynneos, is already in production by Danish manufacturer Bavarian Nordic. This vaccine, produced using primary chick embryo fibroblast (CEF) cell cultures.
- India is well-positioned to meet this challenge. Three major vaccine manufacturers — the Serum Institute of India, Bharat Biotech, and Zydus Cadila — already have the experience of producing vaccines using CEF cells.
- India's drug regulatory agency, the Central Drugs Standard Control Organization (CDSCO), waived the requirement for clinical trials in India for 'new drugs used in pandemic situations'.

Different Virus Clades

- There are two broad clades of the virus: **clade I and II**.
- Clade II was behind the global mpox outbreak that began in 2022.
- The current understanding is that clade I leads to more severe disease and death than clade II in the populations where it is endemic.
- A new offshoot of clade I virus, called **clade Ib**, was first reported in the Democratic Republic of the Congo in 2023.

Challenge

- Rapidly scaling up MVA-BN production will require comprehensive technology transfer, including the sharing of biological resources, know-how, and patents.

Conclusion

A PHEIC is intended to foster international cooperation. Countries, international organisations, and non-governmental organisations must collaborate to coordinate their responses, share information, and provide mutual assistance. The declaration should trigger the rapid mobilisation of financial and technical resources, including emergency funding, deployment of trained health-care workers, and provision of medical supplies.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Monkeypox virus:

1. There are two major types of Monkeypox virus variants.

2. Clade I caused the global outbreak that began in 2022.
3. Clade I cause more severe illness and deaths.
4. Infections from clade II monkeypox are less severe.

How many of the above statements are correct?

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

Answer: c (1, 3 and 4)

Descriptive Question

Q. What is mpox disease? What are the different clades (types) of mpox pathogen? Discuss the transmission and history of mpox outbreaks. [15 marks] [250 words]

PARTICULARLY VULNERABLE TRIBAL GROUPS

Why in News: District Level Committee in Odisha's Keonjhar district has recently approved habitat rights of Juanga tribe.

Key Details

- The Juanga tribe under Juanga Development Agency will have habitat rights over an area of 64951.4 hectare (ha) of forestland.
- In March 2024, habitat right of Paudi Bhuyan, a PVTG, was approved over an area of 21310.17 ha in Deogarh district, marking Odisha's first habitat right.
- Odisha has total 13 PVTGs which is maximum number among the other states. 1. Birhor 2. Bondo 3. Chuktia Bhunjia 4. Didayi 5. Juang 6. Kharia 7. Dongria Khond 8. Kutia Khond 9. Lanjia Saora 10. Lodha 11. Mankidia 12. Paudi Bhuyan 13. Saora

About Habitat Rights

- Habitat rights recognition provides the community concerned rights over their customary territory of habitation, socio-cultural practices, economic and livelihood means, intellectual knowledge of biodiversity and ecology, traditional knowledge of use of natural resources, as well as protection and conservation of their natural and cultural heritage.
- Habitat rights safeguard and promote traditional livelihood and ecological knowledge passed down through generations.
- They also help converge different government schemes and initiatives from various departments to empower PVTG communities to develop their habitats.

Regulation of Habitat rights

- Habitat rights are given to PVTGs under section 3(1)

(e) [rights including community tenures of habitat and habitation for primitive tribal groups and pre-agricultural communities] of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 also known as the Forest Rights Act (FRA).

- According to Section 2(h) of FRA, "Habitat includes the area comprising the customary habitat and such other habitats in reserved forests and protected forests of primitive tribal groups and pre-agricultural communities and other forest dwelling Scheduled Tribes."

ABOUT JUANGA TRIBE

Residing exclusively in Odisha, the Juang call Juang Pirh in Keonjhar as their homeland and are divided as Hill (Thaniya) and Plain (Bhagudia) Juang.

The Juang also share a symbiotic relationship with another PTG group, the Paudi Bhuinyas who live in their vicinity.

Origin

Originally known as Patuas because of their traditional attire of leaf skirts, the Juang now prefer clothing bought from local markets.

The ancestors of the Bhuinyas and Juang are believed to be brothers according to their common folklore.

Occupation

Originally practitioners of shifting cultivation or toila chasa, some of them are now moving to settled agriculture.

They are skilled in the making of decorative combs and tobacco cases, and have also taken to domesticating fowl, pigs, goats and cows to supplement their income.

Hunting is done occasionally, and Juangs of Pallahara are skilled basket weavers also.

About Particularly Vulnerable Tribal Groups

- According to the ministry of tribal affairs, tribal communities who are technologically backward, who have stagnant or declining population growth, extremely low level of literacy, and a subsistence level of economy are declared as PVTG. PVTGs have low health indices.
- These tribal groups are the most disadvantaged among the tribals. They live in small, scattered habitats in remote, inaccessible areas.
- Their livelihoods are especially vulnerable because over the years, the more dominant tribal and non-tribal groups have encroached upon the resources which they originally controlled and accessed for their survival.
- In the 5th Five Year Plan when the Tribal Sub Plan (TSP) approach was adopted in the Country, they have been initially identified on the basis of certain criteria prescribed and designated as Primitive Tribal Groups (PTGs) and recently re-designated as Particularly Vulnerable Tribal Groups (PVTGs) by Government of India for the purpose of receiving special attention for their all-round development.
- The ministry has identified 75 PVTGs in 18 states and one Union Territory.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Habitat Rights and Particularly Vulnerable Tribal Groups (PVTGs):

1. Habitat rights provide the community concerned with rights over their customary territory, including their socio-cultural practices and traditional knowledge of natural resources.
2. Habitat rights for PVTGs are recognized under The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.
3. Odisha has the highest number of Particularly Vulnerable Tribal Groups (PVTGs) among Indian states.
4. Recently, Juanga tribe became first tribe in India to get habitat right under Forest right Act, 2006.

Which of the statements given above are correct?

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

Answer: b

VIOLATION OF HUMAN RIGHTS

Why in News: Maharashtra Human Rights Commission has recently recommended compensation and disciplinary action against Pantnagar police for illegally detaining a contractor and labourers without a complaint.

The State's Role in Upholding Human Rights

- The state has a crucial responsibility to restore personal liberty and bring violators to justice, aligning with the Universal Declaration of Human Rights.
- Achieving this requires strong institutions that prioritize human rights as fundamental to their political ideology. In liberal systems, human rights should be central to ensuring public welfare and stability.
- Establishing the centrality of human rights is crucial in a world of increasing violations, especially in liberal systems that promote stability through public welfare. Achieving this requires a unified approach, consolidating political coalitions, institutional frameworks, and ideologies to ensure compliance and accountability.
- Failure by the state to champion these rights can legitimize resistance activism, especially in the face of authoritarian regimes where human rights are often disregarded.

Approach to Ensure Human Rights Standard

- **Enforcement of Economic Sanctions or Military Invasion:** Economic sanctions and military invasion are a powerful tool that can be used to enforce compliance with human rights norms by exerting financial pressure on a country or regime.
 - In 1999, NATO intervened militarily in Kosovo to halt ethnic cleansing by Yugoslav forces, leading to their withdrawal and an UN-administered region. This action stopped the abuses but was controversial for bypassing the UN Security Council.
 - During apartheid, South Africa faced international economic sanctions due to its racial segregation policies. These sanctions, imposed by the UN and Western countries, pressured the government to end its discriminatory practices.
- **Naming and Shaming:** It is through forceful condemnation which can be undertaken by non-governmental organisations or smaller nations, irrespective of their military or economic power or their lack of adequate international clout.

The Effectiveness of Naming & Shaming

- State sovereignty can hinder the enforcement of international human rights standards, but moral pressure sometimes persuades governments to change their behavior.
- Violence against marginalized ethnic groups and LGBTQ individuals has spurred stronger safeguards and greater respect for basic human rights, with campaigns against perpetrators leading to improved access to justice and reparations for victims.
- Naming & shaming resulted in exerting significant pressure on governments to improve their human rights records.
 - For example: Government had to release political prisoners in Myanmar and Ethiopia.
- But in some cases like Colombia and Argentina, naming and shaming had a tangible impact on policy deviations to address human rights apprehensions.

Limitation of Naming and Shaming

- The effectiveness of "naming and shaming" as a tool for addressing human rights violations is questionable, as it often relies on moral pressure without guaranteeing meaningful change.
- For example, it brings global attention to countries like China, Russia, Israel, or Syria, where violations occur, the strategy may fall short in achieving concrete results, especially when more forceful measures like military intervention or economic sanctions fail.
- A more effective approach might involve fostering human rights from within through strong social, democratic institutions and national values.
- Advocates should focus on bridging power and law, countering illiberal forces, and preventing the co-option of liberalism by authoritarian regimes.
- Success will depend on challenging authoritarianism and promoting economic and social reforms that weaken state tyranny, ensuring that human rights are upheld even in a world marked by prejudice, fanaticism, & repression.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following are functions of the National Human Rights Commission (NHRC) in India?

1. Investigating human rights violations.
2. Recommending compensation for victims of human rights abuses.
3. Implementing laws related to human rights at the state level.

Select the correct answer

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

Answer: a

Descriptive Question

Q. Discuss the role of human rights commissions in addressing illegal detention by law enforcement agencies. Evaluate the effectiveness of 'naming and shaming' compared to other methods like economic sanctions and military intervention in promoting human rights. [15 marks] [250 words]

- These programs will include campus-based, residential or web-based training, in partnership with the WHO Academy and other strategic partners.
- In 2023, India signed a five-year agreement to support the technical work of WHO's Traditional, Complementary and Integrative Medicine (TCI) unit.
- The unit develops key benchmark documents, standardised terminologies, and other evidence-informed technical products to enhance the acceptability and credibility of the traditional medicine systems.

About WHO Global Traditional Medicine Centre

- It is a knowledge hub for traditional medicine focusing on five inter-connected areas of work — research and evidence; primary health care and universal health coverage; indigenous knowledges and biodiversity; digital health applications and the biennial WHO Global Traditional Medicine Summit and collaborations.
- It has a strategic focus on evidence and learning, data and analytics, sustainability and equity, and innovation and technology to optimize the contribution of traditional medicine to global health and sustainable development.
- At the same time it will show respect for local heritages, resources and rights is a guiding principle.
- Government of India are supporting the establishment of the WHO Global Traditional Medicine as a global good and in the spirit of **Vasudhaiva Kudumbakam**: the world is one family.

TRADITIONAL MEDICINE CENTRE

Why in News: Recently Ayush Ministry and the World Health Organisation have signed a donor agreement in Geneva.

Key Details

- This agreement, which outlines the financial terms for implementing the activities of the WHO Global Traditional Medicine Centre (GTMC) in Jamnagar, Gujarat.
- India will donate US\$ 85 million over a period of 10 years (2022-2032) to support the operations of the WHO Global Traditional Medicine Centre (GTMC) in Jamnagar, Gujarat, India.
- The WHO-India donor agreement is part of a \$250 million investment from India in support of the establishment of the WHO Global Centre of Traditional Medicine in 2022
- It recognizes the establishment of the WHO Global Traditional Medicine Centre as a key knowledge hub for evidence-based Traditional Complementary and Integrative Medicine (TCIM) aiming to advance the health and well-being of people and the planet.
- WHO Global Traditional Medicine Centre in Jamnagar, Gujarat is the first and only global out-posted Centre (office) for traditional medicine across the globe.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the WHO Global Traditional Medicine Centre (GTMC) in Jamnagar, Gujarat, consider the following statements:

1. The WHO Global Traditional Medicine Centre is the first and only global out-posted centre for traditional medicine across the globe.
2. India will donate \$ 85 million over a period of 10 years to support the operations of the WHO Global Traditional Medicine Centre.
3. The WHO Global Traditional Medicine Centre focuses on areas such as primary health care, digital health applications, and indigenous knowledge.
4. The WHO Global Traditional Medicine Centre was established with the help of WHO and financial support from the members of WHO.

Which of the statements given above are correct?

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

Answer: a

MODEL GUIDELINES FOR FOSTER CARE

Why in News: Recently, Ministry of Women and Child Development has released Model Foster Care Guidelines (MFCG), 2024.

Difference between Foster Care and Adoption

- **Foster Care:** In sub-section 29 of section of JJ Act defines “foster care” means placement of a child, by the Committee for the purpose of alternate care in the domestic environment of a family, other than the child’s biological family, that has been selected, qualified, approved and supervised for providing such care.
 - In India, children who can be fostered have to be above the age of six years living in child care institutions and having “unfit guardians”.
 - Minors who are placed in the category of “hard to place or children having special needs” can also be fostered.
- **Adoption:** In sub-section 2 of section 2 of JJ Act defines “adoption” means the process through which the adopted child is permanently separated from his biological parents and becomes the lawful child of his adoptive parents with all the rights, privileges and responsibilities that are attached to a biological child.

Key Details of the Revised Guidelines

- The 2016 guidelines have been revised in accordance with the amendment to Juvenile Justice (Care and Protection of Children) Act in 2021 and the Juvenile Justice (Care and Protection of Children) Model Rules of 2022.
- Single individuals including those who are unmarried, widowed, divorced, or legally separated aged between 35 to 60 years are allowed to foster a child and adopt after two years.

Age of the Foster Parents	
Minimum Age	Maximum Age
To foster a child in the 6 to 12 years and 12 to 18 years age brackets, the composite age of the married couple (Age of Husband + Age of Wife) is to be a minimum of 70 years while a single foster parent is to be of minimum 35 years.	The maximum age for prospective foster parents — up to 55 years for a single individual to foster a child in 6 to 12 age bracket and till 60 years to foster a child in 12 to 18 age bracket.

Registration The foster parents can now register online through a platform-Child Adoption Resource Information and Guidance System (CARINGS).

Status of Foster Children in Foster Care
As of March 2024, there were 1,653 children in foster care in States and UTs, excluding Goa, Haryana, & Lakshadweep, according to data with the Ministry of Women and Child Development.

- A single woman can foster and eventually adopt a child of any gender, a man can only do so for male children.

- Married couples (whether they have biological son/daughter or not) who want to foster must have stable marital relationship of two years.
- The guidelines have also allowed the foster parent to adopt a child after she has been in her foster care for minimum of two years, as opposed to five years earlier.

Nurturing Futures: The Benefits of Foster Care for Everyone

- **Benefits for the Foster Child**
 - **Safe and Stable Environment:** Provides a safe and stable home, especially for children coming from abusive or neglectful situations.
 - **Emotional Support:** Foster children receive emotional support and nurturing that can help them heal from past trauma.
 - **Education and Healthcare Access:** They often gain access to better education, healthcare, and other essential services.
 - **Opportunities for Growth:** Exposure to new experiences, skills, and opportunities that might not have been available in their previous environment.
 - **Sense of Belonging:** Foster care can offer a sense of family and belonging, which is crucial for emotional and social development.
- **Benefits for the Foster Parents:**
 - **Fulfillment and Purpose:** Foster parents often find deep personal fulfillment and a sense of purpose in caring for children in need.
 - **Positive Impact:** They have the opportunity to make a lasting positive impact on a child’s life and selflessness that arises from fostering children translates into other areas of your life, helping you become a more conscious and intentional person.
 - **Family Enrichment:** Fostering can enrich the family dynamic by teaching values like empathy, patience, and generosity.
- **Benefits for Society:**
 - **Reducing Homelessness and Crime:** Providing children with stable homes reduces the likelihood of future homelessness, criminal activity, and other social issues.
 - **Economic Savings:** Early intervention in a child’s life can reduce future social and economic costs related to healthcare, crime, and welfare dependency.
 - **Social Responsibility:** It reflects a society’s commitment to protecting and nurturing its vulnerable members.
 - **Breaking the Cycle:** Foster care helps break the cycle of abuse, neglect, and poverty, contributing to healthier future generations.
 - **Community Strengthening:** When children are well-cared for, they grow into productive members of society, strengthening the community as a whole.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

- Q. How is foster care different from adoption? Analyse the benefits of foster care for the different stakeholders involved. [15 marks] [250 words]

HEALTHCARE WORKERS

Why in News: The Supreme Court of India recently constituted a national task force (NTF) of senior medical professionals to formulate comprehensive safety protocols for healthcare workers across India.

Key Details

- The Supreme Court bench, led by Chief Justice of India (CJI) DY Chandrachud, took suo motu cognisance of the Kolkata rape & murder case, emphasising the urgent need for a national consensus on standard safety protocols for medical professionals.



- The apex court has directed the NTF to submit an interim report on its proposed action plan within three weeks, with a final report due within two months.

What will the task force do?

- The NTF will prepare an action-plan under the heads preventing violence, including gender-based violence against medical professionals; providing an enforceable national protocol for dignified and safe working conditions for interns, residents, senior residents, doctors, nurses and all medical professionals.
- To prevent violence, the action plan shall address issues like **ensuring due security in medical establishments** including preventing intoxicated persons from entering the premises of the medical establishment, unless they are patients; **infrastructural development** such as provision of separate resting rooms and duty rooms in each department for male and female doctors, male and female nurses; and a **gender-neutral common resting space**.
- It shall also explore constitution of "Employees Safety Committees" comprising doctors, interns, residents

and nurses at every medical establishment to conduct quarterly audits on institutional safety measures and ensuring compliance of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

MINIMUM MARRIAGE AGE FOR GIRLS

Why in News: Himachal Pradesh has recently passed 'the Prohibition of Child Marriage (Himachal Pradesh Amendment) Bill, 2024' to raise women's marriage age.

Key Details

- The Prohibition of Child Marriage (Himachal Pradesh Amendment) Bill, 2024 aimed to raise the minimum age of marriage for women from 18 to 21 years.
- The bill seeks to amend the Prohibition of Child Marriage Act, 2006 (2006 Act) to advance gender equality and encourage higher education among women.
- With this Himachal Pradesh becomes the first State in India to enact the legislation to increase the marriage age of girls to 21.

Key Provisions

- Currently, Section 2(a) of the 2006 Act defines a "child" as someone "who, if male, has not completed twenty-one years of age, and if female, has not completed eighteen years of age." The Bill removes this gender-based distinction, redefining a "child" as "a male or female who has not completed twenty-one years of age."
- The Bill also extends the time period for filing a petition to annul a marriage. Under Section 3 of the 2006 Act, an individual who was a minor at the time of marriage can file for annulment within two years of attaining majority—before turning 20 for women and 23 for men.
- The Bill extends this period to five years, allowing both women and men to file petitions before they turn 23, in accordance with the new minimum marriageable age of 21 years.
- A new provision, Section 18A, has also been introduced to ensure that the Bill's provisions take precedence over all other existing laws.
 - This means that the new minimum marriageable age for women will apply uniformly across Himachal Pradesh, regardless of any conflicting laws or religious and cultural practices.

The Concurrent List of the Seventh Schedule of the Constitution outlines subjects on which both the central and state governments can legislate. Entry 5 of this list deals with the subject of marriage and divorce enabling both the Centre and states to enact laws to regulate child marriages.

- At Union level, the Prohibition of Child Marriage (Amendment) Bill, 2021 was introduced in the Lok Sabha

in December 2021 and was subsequently referred to a parliamentary standing committee for review.

- However, despite receiving multiple extensions, the 31-member committee failed to table its report.

Conclusion

The 2008 Law Commission Report recommended setting a uniform age of marriage for both men and women at 18 years. The National Human Rights Commission in 2018 too proposed a similar reform. However, it is also been argued that in a patriarchal society, increasing the minimum marriage age may further entrench parental control over young adults and is likely to endanger the life and liberty of the marginalised communities exposing them to further brutal policing.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Marriage and divorce is mentioned in the Union List in Seventh Schedule of the Constitution.
2. State Amendments to central laws dealing with concurrent list subjects repugnant to the original law require President's assent.

Which of the statements above is/are correct?

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

Answer: b

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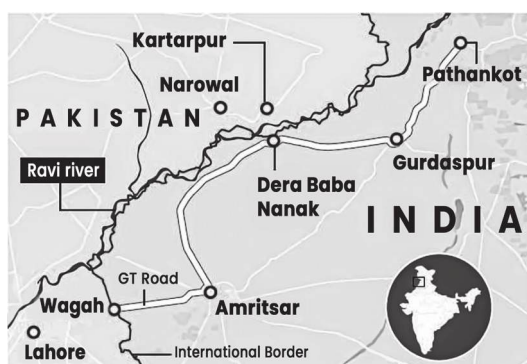
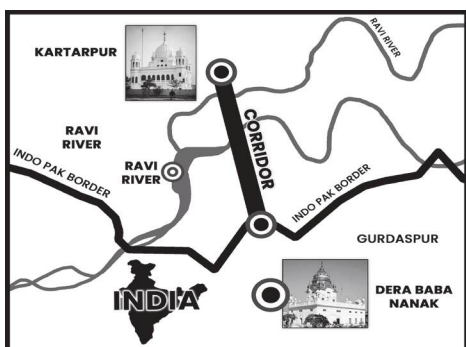
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NAGALAND | PATNA | RAIPUR | RAJKOT | RANCHI | SURAT | THANE | VADODARA

KARTARPUR SAHIB CORRIDOR

Why in News: Pakistan has recently completed the 420-metre-long bridge at the Kartarpur Sahib Corridor zero line.

Kartarpur Corridor

- Village Kartarpur is located at the west bank of river Ravi where Sri Guru Nanak Dev Ji spent the last 18 years of his life. Gurdwara Dera Baba Nanak is about 1 km from the Indo-Pakistan border and on the east bank of River Ravi.
- To the west side of the river is located the town of Kartarpur, Pakistan. Gurdwara Sri Kartarpur Sahib falls in district Narowal of Pakistan, about 4.5 km. from the international border near the historic town of Dera Baba Nanak, District Gurdaspur, Punjab.
- The Indian part of Dera Baba Nanak - Sri Kartarpur Sahib corridor involves a 4.1 km. long four lane highway from Dera Baba Nanak to international border and a state of the art Passenger Terminal Building (PTB) at the international border.
- Dera Baba Nanak is a city situated in Gurdaspur district in the state of Punjab, India. Followers of Sri Guru Nanak Dev Ji built the town and named it Dera Baba Nanak after their great ancestor.



Culture: Key Pillar of Soft Power

- The culture of a nation is representative of a country's ideas and values. Religion and culture has been used often as a measure to sustain regimes, and as a powerful tool in politics, diplomacy and international relations.
- The term 'Soft Power' coined by Joseph Nye, is the ability to attract and co-opt, rather than coerce.
- The three pillars of soft power are political values, culture and foreign policy. Soft power uses a country's economic and cultural influence to persuade countries to do something, rather than by using military influence.
- Cultural diplomacy is a phenomenon where states utilise their culture to achieve their foreign policy goals.

India-Pakistan Cultural Ties

- **Language Homogeneity:** The cultural similarities between India and Pakistan are clearly reflected in the languages spoken in both countries. This linguistic commonality facilitates the sharing and enjoyment of cultural activities between the two countries.
 - Urdu and Punjabi are widely spoken across both nations, with 36 million people in India identifying Punjabi as their first language and 63 million using Urdu.
 - Additionally, both India and Pakistan have adopted English, a legacy from their colonial history, as an official language.
- **Cricket:** Cricket diplomacy refers to using the sport as a means to influence diplomatic relations between the two nations. This form of diplomacy has a history as complex as the political ties between India and Pakistan. While cricket has occasionally reflected a sense of peace, this is often disrupted by political tensions.
 - Former Pakistani President General Zia-ul-Haq initiated cricket diplomacy in 1987 when he visited India to watch a test match, promoting "cricket for peace."
- **Attracting Each Other's Audiences:** Indian and Pakistani cultural products, such as films, music, and television dramas, have a strong influence on each other's audiences.
 - Bollywood movies are highly popular in Pakistan, often leading to packed cinemas and widespread discussions.
 - Similarly, Pakistani TV dramas, known for their storytelling and high production quality, have gained a substantial viewership in India.

- **Shaping Perceptions:** Cultural exports from India and Pakistan often reflect the values and ideas of their respective societies, influencing how they perceive each other.
 - For example, the popularity of Pakistani music in India, especially Sufi and Qawwali genres, has led to a greater appreciation of Pakistan's rich cultural heritage.
 - The appeal of Indian films in Pakistan has fostered a sense of shared cultural identity, helping to humanize the "other" and challenge negative stereotypes.
- **Fostering Diplomatic Relations Through Culture:** Cultural exchanges between India and Pakistan have played a crucial role in softening diplomatic relations. Joint initiatives like concerts, literary festivals, and art exhibitions have provided platforms for people-to-people interactions.
 - For instance, in 2010, the Aman ki Asha campaign brought together artists and intellectuals from both countries, promoting peace and understanding through cultural dialogue, even when official diplomatic channels were strained.
- **Economic and Creative Collaboration:** Despite political barriers, there has been significant collaboration between Indian and Pakistani artists, particularly in the entertainment industry. This collaboration not only strengthens cultural ties but also creates economic opportunities for artists in both countries.
 - 70% percent of the Pakistani movie industry's revenue is said to be from Indian movies.
- **Reinforcing National Identity Through Shared Culture:** Both India and Pakistan have used their cultural products to assert their national identities, but these efforts have also led to a recognition of shared cultural roots.
 - For example, the classical music traditions of both countries are deeply intertwined, and performances by artists from either side are appreciated in both countries. This shared cultural heritage helps reinforce a sense of common identity, reminding people of the deep historical and cultural connections between India and Pakistan.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding Holy Sikh Pilgrimage Sites:
1. Gurdwara Darbar Sahib Kartarpur and Gurdwara Janam Asthan are two of the holiest Sikh pilgrimage sites located in Pakistan.
 2. The Kartarpur Corridor allows Sikh pilgrims to visit the Kartarpur Sahib Gurudwara in Pakistan without a visa.

Which of the statements above is/are correct?

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

Answer: C

Descriptive Question

- Q. Despite their geo-political tensions, India and Pakistan share deep rooted cultural ties. Comment. [10 marks]
[150 words]

RATNA BHANDAR OF PURI JAGANNATH TEMPLE

Why in News: The Puri Jagannath Temple's 'Ratna Bhandar' was recently reopened after 46 years of repairs and taking inventory of valuables.

About Ratna Bhandar

- The gold and jewels offered by devotees to the deities at the Puri Jagannath temple — Lord Jagannath, Lord Balabhadra and Goddess Subhadra — is stored in the Ratna Bhandar, located adjacent to the Jagamohan (prayer hall) at the north side of the temple.
- Under the Jagannath Temple Act, 1952, a list of the ornaments and gold offered to the deities was prepared and preserved in the Record Room of the Puri collectorate.
- The safety of the Ratna Bhandar vests with the Temple's Managing Committee, which is headed by titular 'King of Puri' Dibyasingha Deb (Chairman), the Chief Administrator (an IAS-level officer) and other members appointed or nominated by the State government.
- The temple committee and the Puri collectorate had copies of the keys to the Ratna Bhandar.

Types of Ratna Bhandar

- **Bhitar Bhandar (Inner Treasury):** The articles in 'Bhitar Bhandar' - which are never used.
 - It has 367 gold items including ornaments studded with precious stones, plates of gold, pearls, diamonds, corals and other precious stones and 231 items of silver articles.
 - The items in the Bhitar Bhandar are stored under a double lock, sealed by the Managing Committee, and the keys are generally deposited by the temple administration in the Government treasury.
 - The locks may be opened only if ordered by the State government.
- **Bahar Bhandar (Outer Treasury):** There are articles which are used only for ceremonial purposes and then for daily use the articles are kept in 'Bahar Bhandar'.
 - It stores 87 pieces of gold ornaments, some with precious stones, and 62 pieces of silver items.

- Items used for special occasions are stored under double lock in the Bahar Bhandar, which may be opened in the presence of temple officials and the Chief administrator from time to time.
- Items used daily are locked and under the protection of the Bhandar Mekap.
- The last two types of ornaments stored in the outer treasury are compared and verified periodically — at least once every six months.

When was it last opened?

- The 'Ratna Bhandar' was first opened in 1905 by the British administration for inspection. Later they made a record of the items/jewels in 1926.
- Post-Independence, it was opened in 1978 by the then Odisha Governor Bhagabat Dayal Sharma.
 - As per the inventory, gold items weighing 4364 bhari (50 kilograms) and 14,878 bhari (173 kilograms) of silver were stored in the inner treasury, apart from a sizeable amount of gold ornaments used regularly in temple rituals.
- It was once again opened in 1985 for maintenance work, but no inventory was conducted.
- On April 4, 2018, the temple administration wanted to open the inner treasury for inspection but couldn't because they couldn't find the keys to the room.

ABOUT JAGANNATH PURI TEMPLE: THE WHITE PAGODA

HISTORY



The Jagannath Temple at Puri is one of the most revered Vaishnava sites of worship in India.



Its main shrine built by Anantavarman of the Chodaganga dynasty, the founder of Ganga Dynasty in the tenth century.



The deities within the shrine are believed to be much older and are associated with the great mythical ruler of the Satya-yuga, King Indrayumna, nephew of Lord Ram.



In 1174 AD King Anang Bhim Deo ascended the throne of Orissa who built the ancillary shrines and the walls of Jagannath temple.

ARCHITECTURE

The temple stands in the centre of the inner courtyard on a high raised platform. **1**

It has four component parts consisting of Vimana or Deula (Garbhagriha), Jagamohana, Natamandapa and Bhogamandapa. **2**

The architectural style of the temple is a combination of two types of the temple structures, i.e. Rekha and Pidha. While the Vimana is built in the style of nagara type rekha deula, the Jagamohana is in the form of Pidha deula. **3**

Shree Jagannatha Temple is one of the most finished and refined manifestation of the Indian, especially the Kalingan Architecture. **4**

Singha Dwara or the Lion's Gate, in the east (main entrance)

Vyaghra Dwara or the Tiger Gate, in the west

There are four gates or 'Dwaras' through which one can step into the temple:

Hasti Dwara or the Elephant Gate, in the north

Aswa Dwara or the Horse Gate, in the south.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Jagannath Temple, Puri:

1. It is one of the four holiest Hindu temple sites in India known as Chaar Dhaam.
2. The main shrine is built by Anantavarman Chodaganga, the founder of Ganga Dynasty in the tenth century.

Which of the statements above is/are correct?

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

Answer: c

HUMAYUN'S TOMB WORLD HERITAGE SITE MUSEUM

Why in News: The Union Minister of Culture and Tourism recently inaugurated Humayun's Tomb World Heritage Site Museum.

About Humayun's Tomb World Heritage Site Museum

- The Museum, spread over one lakh square feet is located in a corner of Sunder Nursery next to the mausoleum of second Mughal emperor Humayun in Nizamuddin area.
- The Museum is a facility of the Archaeological Survey of India designed and built in collaboration with the Aga Khan Trust for Culture (AKTC).
- Inspired from the ancient 'Baolis' or stepped wells of Delhi, this underground museum is designed to retain the visual integrity of the monuments located in the complex.
- **Background**
 - It is an UNESCO recommendation that interpretation centres/ site museums be provided at the entrance zone of significant World Heritage Sites to provide the cultural context of the heritage site and thus significantly enhance the visitor experience.
 - The Museum is designed to be underground so as to retain the visual integrity of the monuments located in the complex.
- **Artefacts**
 - The Museum has over 500 never seen before artefacts - from the collections of the National Museum, Archaeological Survey of India and Aga Khan Trust for Culture.
 - Mughal miniatures, manuscripts, significant architectural elements from Humayun's Mausoleum and monuments in the complex, coins, contemporary

art and craft pieces, astrolabes and celestial spheres favoured by the Mughals amidst other metalware, several stone inscriptions dating from the 14th century onwards, glass, textiles, are all on display.

About Humayun's Tomb



Humayun's tomb (Maqbara-i-Humayun) is the tomb of the Mughal Emperor Humayun in Delhi, India.



The tomb was commissioned by Humayun's first wife and chief consort, Empress Bega Begum (also known as Haji Begum), in 1560s, and designed by Mirak Mirza Ghiyas and his son, Sayyid Muhammad, Persian architects chosen by her.



It was the first garden-tomb on the Indian subcontinent, and is located in Nizamuddin East, Delhi, India, close to the Dina-panah Citadel, also known as Purana Qila (Old Fort), that Humayun founded in 1533.



It was also the first structure to use red sandstone at such a scale.



The tomb was declared a UNESCO World Heritage Site in 1993, and since then has undergone extensive restoration work, which is complete.



Inside the walled enclosure the most notable features are the garden squares (chaharbagh) with pathways water channels, centrally located well proportional mausoleum topped by double dome.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding a monument in India:

1. It was the first garden-tomb on the Indian subcontinent made up of red sandstone.
2. It was commissioned by Empress Bega Begum (also known as Haji Begum), in 1560s, and designed by Mirak Mirza Ghiyas and his son, Sayyid Muhammad.
3. It was declared a UNESCO World Heritage Site in 1993.

The above statements describe:

- (a) Red Fort, Delhi
- (b) Agra Fort
- (c) Buland Darwaza, Fatehpur Sikri
- (d) Humayun's Tomb, Delhi

Answer: d

CLASSICAL LANGUAGES IN INDIA

Why in News: Special Centres for promotion of classical Telugu, Odia, Kannada and Malayala are demanding autonomy in their functioning.

Key Details

- India has six classical languages — Tamil, Sanskrit, Telugu, Kannada, Malayalam, and Odia. While four of the centres for classical languages function under the aegis of the Central Institute of Indian Languages (CIIL), Mysuru, the centre for Tamil is autonomous.
 - The chief problem facing these four language centres was that any event or activity planned for them had to get financial sanction from the CIIL.
 - Most of the time, the centre has to hold the event first and then get the cost reimbursed from the CIIL, making it difficult to organise many such programmes.
 - This also means many positions for research scholars as well as administrative staff remain vacant in the absence of regular funds.
- Recently, the Project Directors of the centres for Telugu, Kannada, Malayalam and Odia demanded that their institutes be made autonomous.
 - Following this, the centres were asked to submit detailed project reports, which was done in June.
 - However, no further direction has been received from the Union Education Ministry as of now.

About Classical Languages

- India currently recognizes six languages as classical:
 - **Tamil:** Declared in 2004, Tamil was the first language to receive this status.
 - **Sanskrit:** Accorded classical language status in 2005.
 - **Telugu:** Declared in 2008.
 - **Kannada:** Also recognized in 2008.
 - **Malayalam:** Added to the list in 2013.
 - **Odia:** The latest to be recognized, was in 2014.

Criteria for eligibility: The government's current criteria for declaring a language as classical include the following:

- The language should have a long history of at least 1,500-2,000 years, documented in early texts.
- It should possess a body of ancient literature that is highly regarded as a cultural heritage by generations of speakers.
- The literary tradition of the language should be original and not borrowed from another speech community.

- The classical language and its literature should be distinct from its modern form, potentially showing a discontinuity between the classical language and its later forms or offshoots.

Benefits of Classical Language Status:

- Once a language is designated as classical, the Ministry of Education provides various benefits to promote it, including:
- Two major international awards annually for scholars of eminence in the language.
- Establishment of a Centre of Excellence for Studies in the Classical Language.
- Requesting the University Grants Commission (UGC) to create Professional Chairs in Central Universities dedicated to the classical language.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Identify the true statements about classical languages in India:

1. The first declared classical language in India was Sanskrit.
2. Only six languages have been identified so far.
3. Classical languages are identified once in five years.
4. The languages of all the four South Indian states come under the classical category.

How many of the above statements are correct?

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

Answer: b (1 and 4)

UNDERWATER STRUCTURES IN THE INDIAN OCEAN

Why in News: Recently, underwater geographical structures located in the Indian Ocean have been awarded names proposed by India.

Key Details

- International Hydrographic Organization (IHO) and UNESCO's Intergovernmental Oceanographic Commission (IOC) have recently awarded names to three underwater geographical structures located in the Indian Ocean, proposed by India.

➤ Ashoka Seamount

- ◆ Discovered in 2012
- ◆ Named after Mauryan King Ashoka.

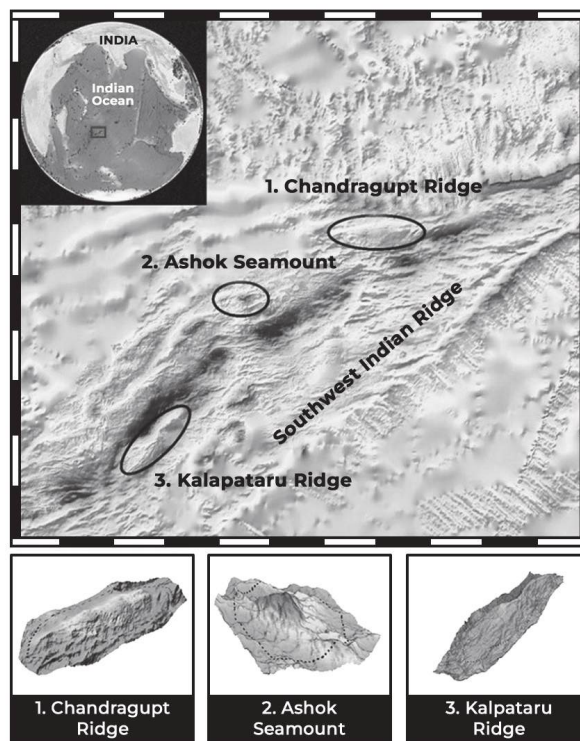
- ◆ The oval shaped structure spans over an area of 180 sq.km.

➤ Chandragupt Ridge

- ◆ Discovered in 2020
- ◆ Named after Mauryan King Chandragupt
- ◆ Elongated and oval shaped body covering a total area of 675 sq.km.

➤ Kalpataru Ridge

- ◆ Discovered in 2012
- ◆ Elongated shape; Area of 430 sq.km.



- These are located along the Southwest Indian Ridge area of the Indian Ocean and were discovered during an international survey exploration programme.
- All the three named structures were discovered by oceanographers from the National Centre for Polar and Ocean Research (NCPOR), Goa.
- There are now **seven** structures in the Indian Ocean named mainly after Indian scientists or bear names proposed by India in the region of the Indian Ocean.

Raman Ridge

Name accepted in 1992

Panikkar Seamount

Name accepted in 1993

Other Four Structures:

Sagar Kanya Seamount

Name accepted in 1991

Wadia Guyot

Name accepted in 1993

- The worldwide ocean data is maintained and provided by the General Bathymetric Chart of Oceans operating under the IOC and IHO.

National Centre for Polar and Ocean Research (NCPOR)

National Centre for Polar and Ocean Research is India's premier R&D institution responsible for the country's research activities in the Polar and Southern Ocean realms.

It functions under the Ministry of Earth Sciences, Government of India.

The **mandate of NCPOR** is multi-dimensional:

- **Leadership role** in niche areas of scientific research in the domain of polar and ocean sciences.
- **Lead role** in the geoscientific surveys of the country's EEZ and its extended continental shelf beyond 200M, deep-sea drilling in the Arabian Sea basin through the IODP, exploration for ocean non-living resources such as the gas hydrates and multi-metal sulphides in mid-ocean ridges.
- **Facilitatory role** in the scientific research activities being undertaken by several national institutions and organizations in Antarctica, the Arctic and in the Indian Ocean sector of the Southern Ocean.
- **Management role** in implementing all scientific and logistics activities related to the Annual Indian Expeditions to the Antarctic, Arctic and Southern Ocean.
- Management and upkeep of the Indian Antarctic Research Bases "**Maitri**" and "**Bharati**", and the Indian Arctic base "**Himadri**".
- Management of the Ministry's research vessel **ORV Sagar Kanya** as well as the other research vessels chartered by the Ministry.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding National Centre for Polar and Ocean Research (NCPOR):

1. It is India's premier R&D institution responsible for the country's research activities in the Polar and Southern Ocean realms.
2. It functions under the Ministry of Science and Technology, Government of India.

Which of the statements above is/are correct?

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

Answer: a

NATIONAL CULTURE FUND

Why in News: The Ministry of Culture and Tourism recently highlighted the achievements made in the National Mission for Manuscripts and National Culture Fund.

About National Culture Fund (NCF)

- It is a trust under Ministry of Culture, Govt. of India, Serves as a financing mechanism for enabling-donor/sponsor institution to support Protection, Restoration, Conservation and Development of India's rich tangible and intangible culture and heritage (Monuments/Cultural Traditions) directly as partners with the Government.
- The Government of India has set up National Culture Fund (NCF) as a Trust on 28th November, 1996 under the Charitable Endowment Act, 1890 with a view to mobilize extra resources through Public Private Partnerships (PPP) towards promoting, protecting and preserving India's tangible & intangible cultural heritage.

Objectives of NCF

To administer and apply the Fund for conservation, maintenance, promotion, protection, preservation and up-gradation of monuments protected or otherwise.

1

To impart training and facilitate development of a cadre of specialists and cultural administrators.

2

To facilitate in providing additional space in existing museums & construct new museums to accommodate or create new & special galleries.

3

Documentation of cultural expressions and forms that have lost their relevance in contemporary scenario and are either fading out or facing extinction.

4

Features of NCF

The NCF is managed and administered through a Governing Council chaired by the Hon'ble Minister of Culture and has a maximum strength of 25 members to decide the policies.

1

An Executive Committee headed by Secretary (Culture) and has a maximum strength of 11 Members, to execute those policies.

2

Donations to the National Culture Fund are eligible for 100% tax benefit under Section 80G (ii) of the Income Tax Act, 1961.

3

NCF's activities are covered under Schedule VII of the Companies Act, 2013 as valid receptacle of Corporate Social Responsibility (CSR) contribution.

4

Annual Accounts are audited by the Comptroller and Auditor General of India.

5

Role of NCF

- NCF plays an important role by forging partnerships with Corporates, NGOs etc. in getting the preservation & conservation related heritage projects implemented as per norms.
- NCF can receive donations from Corporates, PSUs, Trusts and Individuals for maintenance and preservation of Centrally Projected monuments/ cultural projects through NCF.
- NCF provides the donor / sponsor the flexibility to indicate a project along with any specific location/ aspect and also an implementing agency for execution of the project.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding National Culture Fund (NCF):

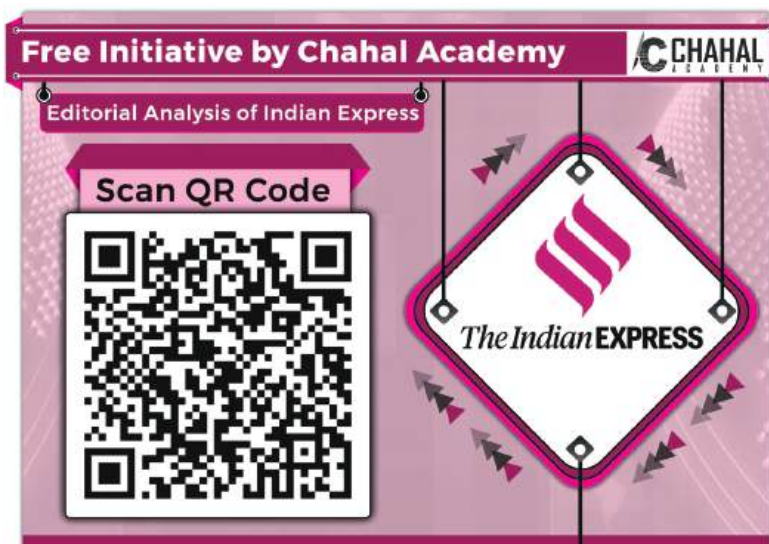
1. It is established as a trust under Ministry of Culture, Govt. of India.

2. Donations under the fund are eligible for 100% tax benefit under Income Tax Act.
3. It was set up to mobilize extra resources through Public Private Partnerships (PPP) towards promoting, protecting and preserving India's tangible & intangible cultural heritage.

How many of the above statements are correct?

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

Answer: c



GOVERNMENT SCHEMES

PRADHAN MANTRI JI-VAN YOJANA

Why in News: Union Cabinet has recently approved amendment in “Pradhan Mantri JI-VAN (Jaiv Indhan-Vatavaran Anukool fasal awashesh Nivaran) Yojana”.

Key Details

- To allow financial support to Advanced Biofuel Projects using lignocellulosic biomass and other renewable feedstock.
- The modified scheme extends timeline for implementation of scheme by Five (5) year i.e. till 2028-29 and includes advanced biofuels produced from lignocellulosic feedstocks i.e. agricultural and forestry residues, industrial waste, synthesis (syn) gas, algae etc. in its scope.
- The scheme **aims** to provide remunerative income to farmers for their agriculture residue, address environmental pollution, create local employment opportunities, and contribute to India’s energy security and self-reliance.
- It also supports the development of advanced biofuel technologies and promotes the Make in India Mission.

CABINET DECISIONS
28 FEB 2019

Cabinet Approves Pradhan Mantri JI-VAN Yojana

Jaiv Indhan-Vatavaran Anukool fasal awashesh Nivaran



Financial support to Integrated Bioethanol Projects using biomass and crop residues



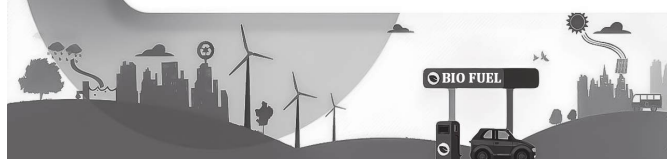
12 commercial scale & 10 demonstration scale 2G ethanol projects to be provided Viability Gap Funding



To enhanced farmer income from waste agriculture residues & to reduced greenhouse gases



Total outlay of Rs. 1969.50 crore for the period from 2018-19 to 2023-24



Ethanol Blended Petrol (EBP) Programme

- The Government has actively promoted blending ethanol with petrol through the Ethanol Blended Petrol (EBP) Programme, where Public Sector Oil Marketing Companies (OMCs) sell ethanol-blended petrol.
- Since the inception of the EBP Programme, ethanol blending has increased from 38 crore litres in the Ethanol Supply Year (ESY) 2013-14 to over 500 crore litres in ESY 2022-23.
- The blending percentage rose from 1.53% to 12.06% during this period. Notably, the blending percentage reached 15.83% in July 2024, and the cumulative blending percentage has exceeded 13% in the current ESY 2023-24.

Key Facets of EBP Programme

- **Blending Target:** OMCs aim to achieve a 20% ethanol blending target by the end of the Ethanol Supply Year (ESY) 2025-26.
- **Ethanol Requirement:** Approximately 1,100 crore litres of ethanol will be needed to reach this 20% blending target.
- **Distillation Capacity:** To meet the blending requirement and other uses, 1,750 crore litres of ethanol distillation capacity needs to be installed.
- **Focus on 2G Ethanol:** The Government is promoting 2nd-generation (2G) Ethanol, which is derived from surplus biomass, agricultural waste, and industrial waste using advanced biofuel technology.
- **Support for 2G Projects:** The “Pradhan Mantri JI-VAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana” was launched on March 7, 2019, to provide financial assistance for 2G bio-ethanol projects.

Way Forward

A multifaceted approach is crucial to maximizing the benefits of ethanol in India. Expanding the Pradhan Mantri JI-VAN Yojana will support the India’s ambitious goal of achieving net-zero GHG emissions by 2070. Increasing ethanol blending will also contribute to India’s energy security by lessening dependence on imported fossil fuels and creating local employment opportunities.

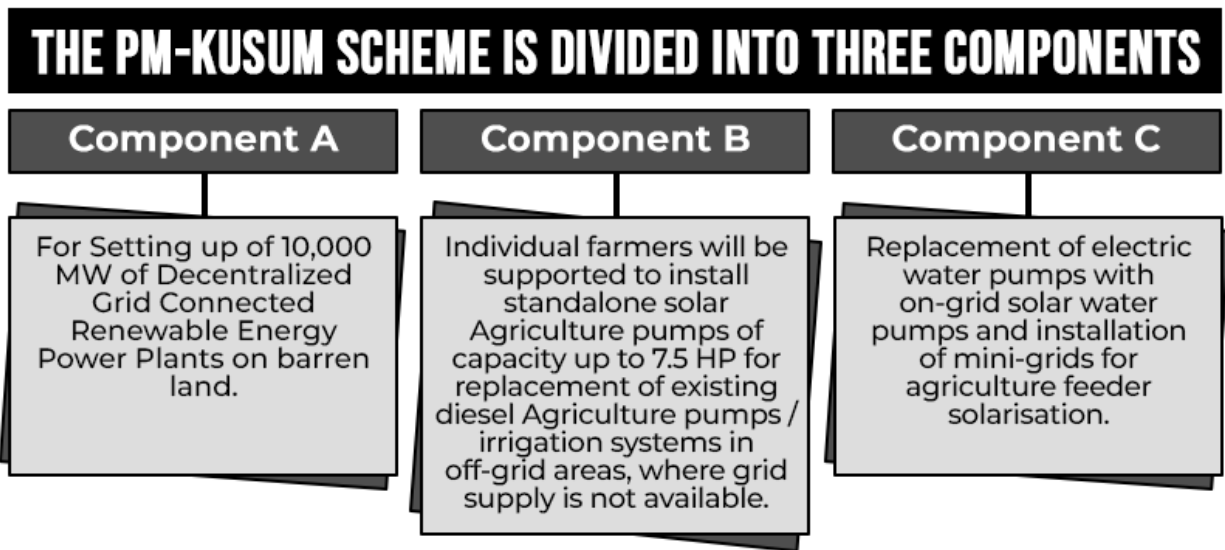
PRADHAN MANTRI KISAN URJA SURAKSHA EVAM UTTHAAN MAHABHIYAN

Why in News: Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) has achieved only 30% of its targets, raising concerns about its ability to meet the 2026 deadline.

About PM-KUSUM

The Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM) scheme, launched in 2019 with

the ambitious goal of solarising agriculture in India. It holds the potential to reduce carbon emissions by 5.2 million tonnes, making its successful implementation crucial for India's climate action efforts.



Key Details of the Report

- A report - Implementation Challenges of the PM-KUSUM Scheme: Case Studies from Selected Indian States published by Centre for Science and Environment (CSE) shedding light on the scheme's on-ground realities and suggesting a comprehensive roadmap for its successful implementation.
- There has been significant progress in component B, particularly in Haryana, Rajasthan, Maharashtra and Uttar Pradesh, components A and C have lagged. Most implementation efforts have focused on replacing diesel pumps with solar variants, which has brought substantial benefits to farmers.

Challenges in implementation

- One significant hurdle has been the availability of cheap electricity, which diminishes the incentive for farmers to switch to solar pumps.
- Additionally, farmers are often forced to opt for larger-than-needed pumps, increasing their financial burden.
- Centralisation of the implementation model poses another challenge. In Punjab, the Punjab Renewable Energy Development Agency oversees the scheme, whereas in Rajasthan, different components are managed by various agencies.

Way Forward

- Decentralisation:** Local implementing agencies with on-ground knowledge should manage the scheme to better cater to farmers' needs.

- Financial viability:** Offering farmers the option to pay upfront costs in instalments could make the scheme more accessible.
- Increased central assistance:** Boosting financial assistance from the Centre, tailored to state-specific needs and fluctuating prices of solar modules, would alleviate the financial burden on farmers.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM) scheme, consider the following statements:

- The scheme includes the installation of 10,000 MW of decentralized grid-connected renewable energy power plants on barren land.
- It supports individual farmers in off-grid areas by providing standalone solar agriculture pumps of up to 7.5 HP to replace existing diesel pumps.
- The scheme also involves providing financial assistance of the tune of 6000 Rs annually to farmers to encourage them to install solar pumps.

Which of the statements given above is/are correct?

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

Answer: a

PRADHAN MANTRI SURYA GHAR: MUFT BIJLI YOJANA

Why in News: The Ministry of New and Renewable Energy has recently issued Operational Guidelines for Implementation of 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana.

Key Details

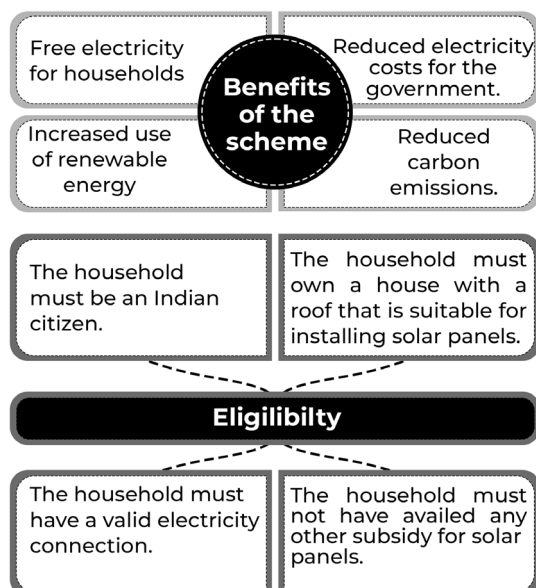
- Under the scheme component 'Model Solar Village', emphasis has been made on creating one Model Solar Village per district across India, with the goal of promoting solar energy adoption and enabling village communities to become self-reliant in meeting their energy needs.
- A total financial outlay of ₹800 crore has been allocated for this component, providing ₹1 crore per selected Model Solar Village.
- The winning village in each district, with the highest RE capacity, will receive a central financial assistance grant of ₹1 crore.

About PM-Surya Ghar: Muft Bijli Yojana

- PM Surya Ghar Muft Bijlee Yojana is a Central Scheme that aims to provide free electricity to one crore households in India, who opt to install roof top solar electricity unit.
- The Government of India approved the PM-Surya Ghar: Muft Bijli Yojana on 29th February 2024, with the aim to increase the share of solar rooftop capacity and empower residential households to generate their own electricity.
- The scheme has an outlay of Rs 75,021 crore and is to be implemented till FY 2026-27.

How does PM Surya Ghar Muft Bijlee Yojana work?

The scheme provides for a subsidy of 60% of the solar unit cost for systems up to 2 kW capacity and 40 percent of additional system cost for systems between 2 to 3 kW capacity. The subsidy has been capped at 3 kW capacity.



Advantages of Grid-Connected Rooftop Solar System:

- Saving on electricity bill by the consumer.
- Utilization of available vacant roof space, no additional land required.
- Low gestation period. No additional requirement of transmission and distribution (T&D) lines.
- Reduces T&D losses as power consumption and generation are collocated. Improvement in the tail-end grid voltages and reduction of system congestion.
- Long term energy and ecological security by reduction in carbon emission.
- Better management of daytime peak loads by DISCOM/ utility. Meeting of the Renewable Purchase Obligations (RPOs) of obligated entities

JAL JEEVAN MISSION

Why in News: Jal Jeevan Mission has recently achieved historic milestone of 15 crore from 3 crores Rural Tap Connections, just in a short span of 5 years.

Background

- The Central Government assistance to States for rural water supply began in 1972 with the launch of Accelerated Rural Water Supply Programme.
- It was renamed as National Rural Drinking Water Programme (NRDWP) in 2009, which is a centrally sponsored scheme with fund sharing between the Centre and the States.
- Under NRDWP, one of the objectives was to "enable all households to have access to and use safe & adequate drinking water within premises to the extent possible".
- It was proposed to achieve the goal by 2030, coinciding with the United Nation's Sustainable Development Goals. But now, it is has been planned to achieve the goal by 2024 through Jal Jeevan Mission (JJM).

About Jal Jeevan Mission (JJM)

- Government of India restructured and subsumed the National Rural Drinking Water Programme(NRDWP) into Jal Jeevan Mission (JJM) to provide Functional Household Tap Connection (FHTC) to every rural household i.e., Har Ghar Nal Se Jal (HGNSJ) by 2024.
- On 15 August 2019, Prime Minister Shri Narendra Modi, announced Jal Jeevan Mission - 'Har Ghar Jal'.
- The mission aims to improve quality of life by ending age-old drudgery faced by women & young girls in collection of drinking water.

The institutional mechanism under JJM:

National Level	National Jal Jeevan Mission
State Level	State Water and Sanitation Mission (SWSM)

District Level	District Water and Sanitation Mission (DWSM)	Gram Panchayat Level	Paani Samiti / Village Water & Sanitation Committee (VWSC)/ User group
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NAMAMI GANGE MISSION 2.0

Why in News: Recently, four major projects worth Rs. 920 crores operationalized in Uttar Pradesh and Bihar under Namami Gange Mission 2.0.

Key Details

- These initiatives located across the mainstream of the river Ganga in Bihar and Uttar Pradesh, are pivotal in the ongoing efforts to curb pollution and enhance the ecological health of the Ganga and its tributaries.
- Projects to augment 145 MLD of sewage treatment capacity, provide better sewer networks, and intercept numerous drains. Designed to meet the stringent discharge standards prescribed by the National Green Tribunal, these initiatives ensure substantial improvements in the water quality of the Ganga and its tributaries.
- Munger (Bihar):** It will improve sewer network, and establish Sewerage Treatment Plant (STP). The project has been implemented using the DBOT (Design, Build, Operate, and Transfer) Model. It will benefit approximately 3,00,000 residents by connecting their households to the sewer network, significantly improving

the city's sanitation infrastructure and preventing the discharge of untreated sewage into the River Ganga.

- Project Mirzapur (Uttar Pradesh):** This is for the Interception, Diversion and Treatment Works for abatement of Pollution of River Ganga. This project prevents untreated sewage from entering the Ganga, significantly improving water quality and supporting aquatic biodiversity.
- Ghazipur (Uttar Pradesh):** This has been established for interception, diversion, and treatment works for abatement of pollution of River Ganga. This project benefits city by treating sewage effectively, preventing the discharge of untreated sewage into the Ganga.
- Bareilly (Uttar Pradesh):** It is an important project for interception, diversion, and sewage treatment works. This project targets pollution abatement in the river. The Project will benefit the city by having its sewage treated at the STPs and thereby avoiding discharge of untreated sewage to river Ramganga, resulting in the improvement in the water quality of the river Ganga.

About the Namami Gange Mission

- It is an Integrated Conservation Mission, approved as

'Flagship Programme' by the Union Government in June 2014 with budget outlay of Rs.20,000 Crore.

- The twin objectives of effective abatement of pollution, conservation and rejuvenation of National River Ganga.



EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the Namami Gange Programme, consider the following statements:

- The programme was launched in June 2012 with a budget outlay of Rs. 20,000 Crore.
- The main objectives of the programme are the effective abatement of pollution and the conservation and rejuvenation of the Ganga River.
- Key components of the programme includes Sewerage Treatment Infrastructure, River-Front Development, and Bio-Diversity.

Which of the statements given above is/are correct?

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

Answer: c

MISSION KARMAYOGI

Why in News: The Government of India recently launched 'Amrit Gyan Kosh' and 'Faculty Development' Portals under Mission Karmayogi.

About Mission Karmayogi

- The National Programme for Civil Services Capacity Building (NPCSCB)- Mission Karmayogi aims to create a competent civil service rooted in Indian ethos, with a shared understanding of India's priorities, working in harmonization for effective and efficient public service delivery.
- The Mission seeks to keep the civil service at the center of all change, empowering them to deliver in challenging environments.
- The focus of NPCSCB is on enhancing the government-citizen interaction, with officials becoming enablers for citizens and business, with development of Behavioural-functional-domain competencies leading to ease of living and ease of doing business. Thus, by design, Mission Karmayogi adopts a citizen-centric approach for civil service reforms.
- Six key pillars**
 - Policy Framework
 - Institutional Framework
 - Competency Framework
 - Digital Learning Framework (iGOT-Karmayogi)
 - electronic Human Resource Management System (e-HRMS)
 - Monitoring and Evaluation Framework
- The Programme covers all civil servants (including contractual employees) across different ministries, departments, organizations and agencies of the Union Government.

Amrit Gyan Kosh Portal

It is a shared learning resources knowledge bank that will enable institutes to access India centric case studies instead of always relying on west to give us knowledge material.

Faculty Development Portal

To ensure that practitioners and faculties are better able to deliver knowledge to civil servants.

UNIFIED PENSION SCHEME

Why in News: The Union Cabinet has recently approved the Unified Pension Scheme (UPS) for central government employees.

Key Features of the Unified Pension Scheme (UPS)

- The scheme assures a pension of 50% of the average basic

pay drawn over the last 12 months prior to superannuation for employees with a minimum of 25 years of service.

- For service between 10-25 years, the pension is proportionate.
- The UPS provides a guaranteed family pension equivalent to 60% of pension of the employee immediately before his/her demise.
- The UPS also assures minimum pension of Rs 10,000 per month on superannuation, provided the employee has completed at least 10 years of service.
- The scheme also includes inflation indexation and a lump-sum payment upon superannuation, reinforcing the government's commitment to employee welfare.
- Inflation indexation: on assured pension, on assured family pension and assured minimum pension, Dearness Relief based on All India Consumer Price Index for Industrial Workers (AICPI-IW) as in case of service employees.

Old Pension Scheme (OPS)

- Under the Pensions Act, 1871, the British established the system of offering pensions to government employees, empowering the Central and State governments to enact rules for disbursement of money.
- Based on a 'Defined Benefit' concept, this pension scheme assured the retiree of 50% of the last drawn basic salary as his pension.
- The scheme also introduced a 'Dearness Allowance' (DA), which was calculated as a percentage of the pensioner's salary to cushion the effect of rising cost of living and was hiked by the government whenever necessary.
- This pension was 'unfunded', i.e. there was no corpus (like the Contingency Fund of India) from which the pension was drawn. Hence, employees had no deductions from their salaries for contributing to a pension fund.
- The government made budgetary allocations to pay pensions under a 'pay-as-you-go' system i.e. funds were drawn from the government's income, such as tax collected from citizens.

National Pension Scheme (NPS)

- Burdened with an ever-increasing pension liability, the Centre scrapped the OPS, replacing it with the National Pension Scheme (NPS), formerly known as New Pension scheme, on January 14, 2004.
- Based on a 'Defined Contribution' concept, the NPS had a two-tiered system.
- Employees who joined service after the rollout of the scheme did not have the option to join the OPS and were allotted a unique Permanent Pension Account Number (PPAN) on joining.
- Under the first tier, the government employee had to make a

mandatory contribution of 10% of his basic pay and DA and the government would make an equal matching contribution in a pension account.

- Under the second, optional tier, employees could make their own contribution under a separate account whose withdrawal was at the employees' discretion.
- At the time of retirement (60 years of age), the government employee has to mandatorily invest 40% of the pension received to purchase an annuity which will provide pension for the lifetime of the employees and his dependents.
- The NPS instituted the independent Pension Fund Regulatory and Development Authority (PFRDA) to regulate and develop the pension market.

PRADHAN MANTRI JAN DHAN YOJANA

Why in News: The Pradhan Mantri Jan Dhan Yojana (PMJDY) completes 10 years of implementation on 28 August 2024.

About Pradhan Mantri Jan Dhan Yojana

- The government's flagship financial inclusion programme Pradhan Mantri Jan Dhan Yojana (PMJDY) was launched by Prime Minister Narendra Modi ten years ago on August 28, 2014.
- It is a National Mission for Financial Inclusion to ensure access to financial services, namely, a basic savings & deposit accounts, remittance, credit, insurance, pension in an affordable manner.
- The Finance Ministry said the PMJDY has been the foundation for people-centric economic initiatives. PMJDY has helped provide adults with a bank account which has helped in direct benefit transfers, COVID-19 financial assistance, PM-KISAN.
- The JAM Trinity (Jan Dhan, Aadhaar, Mobile) has given a boost to the Direct Benefit Transfer programme and expanded its coverage from partial to ubiquitous.
- Under the PMJDY, there are no account opening charges, no account maintenance charges, and no minimum balance charges. Free RuPay debit card, with in-built accident insurance cover of Rs 2 lakh, and access to overdraft facility of up to Rs 10,000, are other major features of the scheme.
- PMJDY accounts are eligible for Direct Benefit Transfer (DBT), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY), Micro Units Development & Refinance Agency Bank (MUDRA) scheme.
- The government aims to open more than 3 crore accounts under the Pradhan Mantri Jan Dhan Yojana (PMJDY) during the current financial year 2024-25.

Financial Inclusion Index

- Financial Inclusion Index (FI-Index) is a multidimensional composite index based on 97 indicators which quantifies the extent of financial inclusion in the country. It is developed by RBI.
- The FI-Index has been constructed without any base year and as such it reflects cumulative efforts of all stakeholders over the years towards financial inclusion.
- The FI-Index comprises of three broad parameters:**
 - Access (35% weightage)
 - Usage (45% weightage)
 - Quality (20% weightage)
- Each of these parameters consist of various dimensions, which are computed based on a number of indicators.
- The Financial Inclusion Index (FI-Index), stood at 64.2 in March 2024 from 60.1 in March 2023.

NAMO DRONE DIDI SCHEME

Why in News: The Government of India has recently allocated Rs 500 crore for Namu Drone Didi scheme.

About Namu Drone Didi Scheme

- Namu Drone Didi is a **Central Sector Scheme** for providing drones to the Women Self Help Groups (SHGs) for the period from **2023-24 to 2025-26**.
- The scheme aims to provide drones to 15,000 selected women SHGs during the period 2023-24 to 2025-2026 for providing rental services to farmers for agriculture purpose (application of fertilizers and pesticides).
- Central Financial Assistance 80% of the cost of drone and accessories/ancillary charges up to a maximum of Rs. Eight Lakh will be provided to the women SHGs for purchase of drones.
- The Cluster Level Federation (CLFs) of SHGs may raise the balance amount (total cost of procurement minus subsidy) as loan under National Agriculture Infra Financing Facility (AIF). Interest subvention @ 3% on the AIF loan will be provided.
- Under the scheme, fertiliser companies select women to be trained to fly agricultural drones.
 - One of the members of the women SHGs who is well qualified, 18 and above years of age will be elected by the SRLM and LFCs for 15 day training comprising of 5 day mandatory drone pilot training and additional 10 day training for agriculture purpose of nutrient and pesticide application.
 - The other member / family member of the SHG with

inclination to take up repairs of electrical goods, fitting and mechanical works will be selected by the State Rural Livelihood Mission (SRLM) and LFCs who will be trained as drone technician/assistant. These training shall be provided as a package along with the supply of drones.

- Note:** The cost of training the first batch of drone didis is borne by the fertiliser companies.
- The cost of training each 'Drone Didi' has been estimated at Rs 25,000, which will be covered through corporate social responsibility funding.

Conclusion

Namu Drone Didi Scheme marks a pivotal step in integrating advanced technology with rural development, potentially transforming the lives of these women by opening up new avenues for employment and entrepreneurship in the agricultural sector. Once trained, the Drone Didis will find employment and entrepreneurial opportunities in conducting drone surveys, event shoots, photography, and video recordings, in addition to agricultural activities such as seeding and pesticide and fertiliser sprinkling.

NEW INDIA LITERACY PROGRAMME

Why in News: The Ministry of Education (MoE) has recently defined 'literacy,' and what it means to achieve 'full literacy' under the New India Literacy Programme (NILP).

Key Details

- The Ministry of Education (MoE) has defined 'literacy,' and what it means to achieve 'full literacy,' in the light of the renewed push for adult literacy under the New India Literacy Programme (NILP).
 - **Literacy** may be understood as the ability to read, write, and compute with comprehension, i.e. to identify, understand, interpret and create along with critical life skills such as digital literacy, financial literacy etc.
 - **Full literacy** (to be considered equivalent to 100% literacy) will be achieving 95% literacy in a State/UT that may be considered as equivalent to fully literate.
 - **A non-literate person** may be considered as literate under the NILP, as per the aforementioned definition when she/he has been declared literate after taking the Foundational Literacy and Numeracy Assessment Test (FLNAT).
- Non-literate individuals face disadvantages in various aspects of life such as financial transactions, job applications, comprehension of media and technology, understanding of rights and participation in higher productivity sectors.

State of Illiteracy in India

- According to the Census 2011, India faces a significant literacy challenge, with 25.76 crore non-literate individuals in the 15 years and above age group, comprising 9.08 crore males and 16.68 crore females.
- Despite the progress made under the Saakshar Bharat programme, which certified 7.64 crore individuals as literate between 2009-10 and 2017-18, an estimated 18.12 crore adults in India remain non-literate.

New India Literacy Programme

- **ULLAS** - Nav Bharat Saaksharta Karyakram, also known as the **New India Literacy Programme (NILP)**, is a centrally sponsored initiative that aligns with the National Education Policy (NEP) 2020.
- It aims to empower adults aged 15 and above from all backgrounds who missed formal schooling, helping them integrate into society and contribute to the nation's growth.
- The programme focuses on imparting functional literacy including reading, writing, and numeracy skills, and enriches learners with critical life skills, fostering lifelong learning.
- Implemented through volunteerism, ULLAS promotes social responsibility and a sense of duty 'Kartavya Bodh', encouraging learners to access educational content in regional languages via the DIKSHA Portal and the ULLAS Mobile App/Portal.
- Objective: To cover non-literates of the age group of 15 years and above in all States/UTs.
- The target for Foundational Literacy and Numeracy for FYs 2022-27 is 5 (five) crore learners, with 1 crore learners per year by using "Online Teaching, Learning and Assessment System (OTLAS)".
 - OTLAS is a computer application embedded in the Web Portal/Mobile App under ULLAS developed by the National Informatics Centre (NIC).
- Implementation Duration: FYs 2022-2027
- Components
 - Foundational Literacy and Numeracy
 - Critical life skills
 - Vocational Skills
 - Basic Education
 - Continuing Education

AMRIT BHARAT STATION SCHEME

Why in News: Kandivali and Dahisar railway stations on Western Railway's Mumbai division in Maharashtra to get a makeover under Amrit Bharat Station Scheme.

About Amrit Bharat Station Development Plan

The Amrit Bharat Station Development Plan, a key initiative

of the Prime Minister of India, aims to enhance stations for better passenger movement and introduce facilities like retail outlets and commercial spaces to boost non-fare revenue.

- The scheme currently intends to upgrade and modernize a total of 1275 stations across the Indian Railway system.
- The Amrit Bharat Station scheme has a long-term vision for the ongoing development of stations. It involves creating Master Plans and executing them in phases to enhance various station facilities.
 - These enhancements encompass bettering station accessibility, waiting areas, toilet facilities, lift and escalator installations as needed, cleanliness, offering free Wi-Fi, setting up kiosks for local products through initiatives like 'One Station One Product', enhancing passenger information systems, establishing Executive Lounges, designating spaces for business meetings, incorporating landscaping, and catering to the unique requirements of each station.
- Furthermore, the scheme emphasizes upgrading station structures, integrating stations with the surrounding city areas on both sides, promoting multimodal connectivity, providing facilities for individuals with disabilities (Divyangjans), implementing sustainable and eco-friendly solutions, introducing ballastless tracks, incorporating 'Roof Plazas' when required, and considering the feasibility and phasing of improvements.
- The ultimate goal is to transform these stations into vibrant city centres and connect divided areas of the city over the long term.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following is not a requirement for a railway station to be eligible for the Amrit Bharat Station Scheme?

- The station must be at least 50 years old.
- The station must be located in a Tier-1 or Tier-2 city.
- The station must have a minimum footfall of 1 million passengers per year.
- The station must have a master plan in place.

Answer: b

LAKHPATI DIDI YOJANA

Why in News : The Prime Minister of India recently participated in Lakhpati Didi Sammelan in Jalgaon, Maharashtra.

Key Details

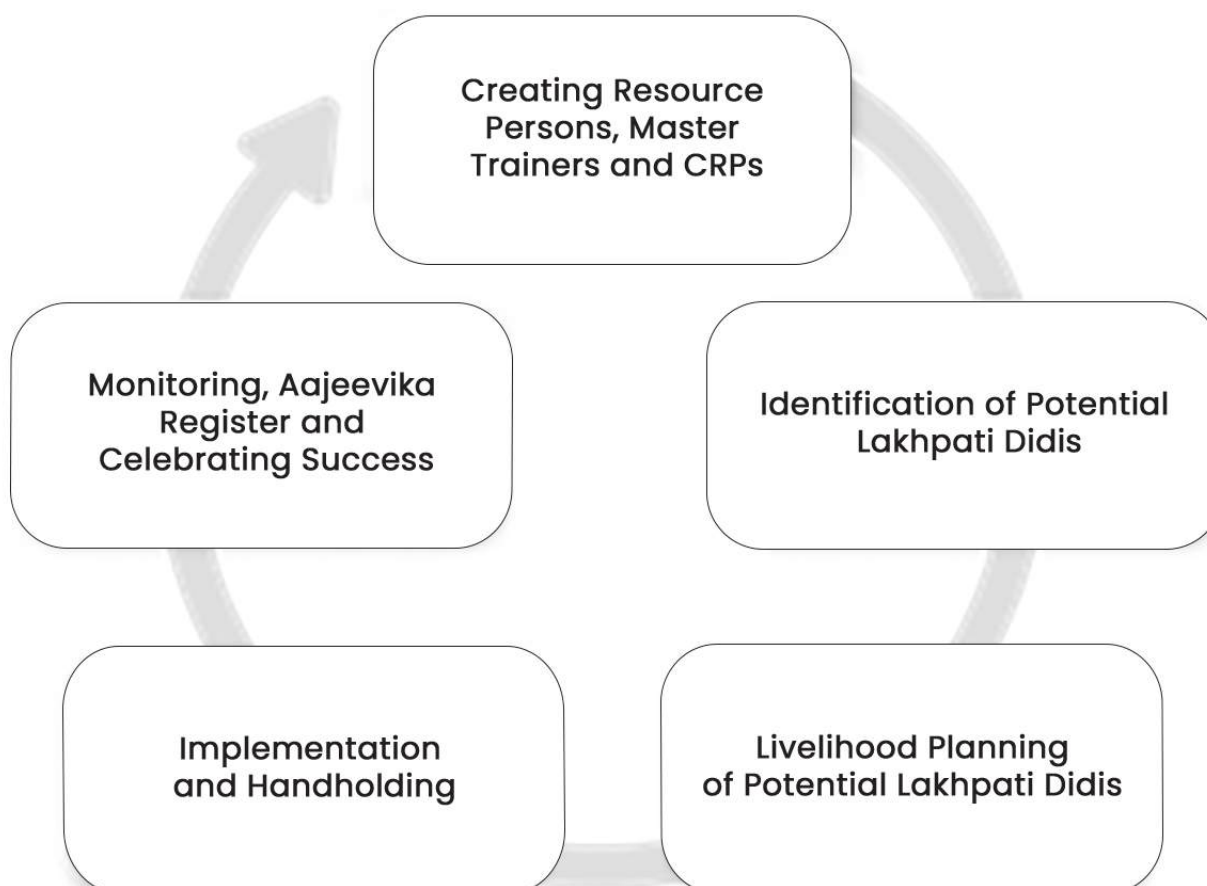
- The Prime Minister of India handed out certificates and felicitated 11 lakh new Lakhpati Didis who recently became Lakhpati.
- He released a Revolving Fund of Rs 2,500 crore, benefiting about 48 lakh members of 4.3 lakh Self-Help Groups (SHG).
- He also disbursed bank loans of Rs 5,000 crore which will benefit 25.8 lakh members of 2.35 lakh SHGs. Loan Facilities available are
 - Collateral-free bank loan up to Rs. 20 lakh for SHGs.
 - Interest Subvention: Interest subvention, to cover the difference between the Lending Rate of the banks/ financial institutions availed by women Self Help Groups, for a maximum of Rs. 3,00,000 per Self Help Group.
 - Overdraft Facility: Every Self Help Group women member having a Jan-Dhan Account is eligible for an Overdraft (OD) limit of Rs. 5,000.

- The government has set a target of three crore Lakhpati Didis.

About Lakhpati Didi Yojana

- A Lakhpati Didi is a Self-Help Group member who earns an annual household income of Rupees One Lakh (Rs. 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 (Rs. 10,000), so that it is sustainable.
- Lakhpati Didis serve as an inspiration to the community, not solely for their income, but for their transformation journey through adopting sustainable livelihood practices (farm or non-farm or service), effectively managing resources, and achieving a decent standard of life.
- The SHG groups have fostered collective action and mutual support, while also serving as conduits for crucial financial literacy, skill development, and livelihood assistance.
- Lakhpati initiative facilitates diversified livelihood activities, by ensuring convergence across all Government departments/ Ministries, Private sector and Market players.
 - The strategy includes focused planning, implementation and monitoring at all levels.

Steps taken to enable SHG members to become Lakhpati Didis



During the Financial Year (FY) 2024-25, Government of India (GoI) has proposed an increased budgetary outlay of Rs. 15047.00 Crore for the DAY-NRLM. This will facilitate in increased interventions for livelihoods of SHG members.

The DAY-NRLM has multiple interventions focusing on the livelihood augmentation of women Self Help Group Members.

Key interventions that can supplement the Lakhpati Didis:

Institution Strengthening	• Strengthening Cluster Level Federations, • Producer Collectives- PG/PE/FPO
Capitalization and Bank Linkage	• Revolving Fund (RF) and Community Investment Fund (CIF) • Bank Linkage • Women Enterprise Acceleration Fund and Interest Subvention
Farm Livelihood	• Farm and allied Sector, Livestock, NTFP interventions • Sub Sector intervention-Promising Commodities • Integrated Farming Cluster (IFC) • Producer Collectives-PG, PE, FPO: Members Mobilization, Formation, Business Plans, Business Enhancement, State Level Federation
Non-Farm Livelihood	• Start up Village Entrepreneurship Programme (SVEP) • One Stop Facility (OSF) • Micro Enterprise Development (MED) • Product and Service Cluster Promotion • Incubator

DIGITAL PUBLIC INFRASTRUCTURE

Why in News: The final 'Report of India's G20 Task Force on Digital Public Infrastructure' by 'India's G20 Task Force on Digital Public Infrastructure for Economic Transformation, Financial Inclusion and Development' was recently released.

What is Digital Public Infrastructure (DPI)?

- DPI is an infrastructure-based approach that uses technology to achieve societal goals through an ecosystem (comprising technology, markets and governance) built in the public interest that leverages competitive private innovation within regulatory guardrails.
- It is composed of multiple layers that contain consent systems, digital identification systems, and payment networks, and a physical layer that includes routers, servers, and other devices.

What Does Not Constitute DPI?

- The physical infrastructure required for improving access to mobile and internet services such as cell towers, broadband cables, underground internet cables etc do not form a part of the DPI.
 - However, the protocols and standards required to build the necessary physical infrastructure for connectivity may be considered DPI.
- Processes like digitising physical processes for a government portal or 'enterprise architecture' for limited use also cannot be defined as DPI.

DPI Approach is Constructed on Three Pillar

Technology Design:

- DPIs should be based on common protocols and standards so that there can be integration of services and allow multiple systems and institutions to interact with each other.
- DPI should be designed in a way that it can be modified and extended to new technologies and functionalities.
- DPIs allow diverse players to participate and develop varied digital services, unlike the platform-centric approach which does not offer much flexibility.
- DPIs should be built with privacy and security implemented through the design of the system.
- DPIs should follow the data minimization principle, collecting only the necessary data, and ensuring that all data is encrypted both during transmission and storage.

- To mitigate the risk of data breach, surveillance, and misuse, it is important to allow for the storage of data at multiple locations and to prevent the collection of data at a single centralised repository.

Governance

- For Digital Public Infrastructure (DPI), governance includes the protocols that define how the DPI operates and how market participants' systems will interact with it.
 - **For example,** all DPI based technology is bound by the digital personal data protection act 2023.
- To sustain Digital Public Infrastructure (DPI) long-term, it's crucial to identify or create institutions that promote DPI adoption, protect consumers, and ensure equal opportunities.
- Since Digital Public Infrastructure (DPI) interacts directly with citizens, it's essential to have clear and easy ways for people to report issues or complaints. The goal should be to ensure that any service problems are addressed promptly and transparently.

Market Participation

- The success of the DPI approach is the involvement of market participants in the development and deployment of solutions.
- DPIs depend on market participants to develop and deploy the systems and solution that ordinary users engage with.
- For example the Unified Payments Network brought in fintech apps like Phone Pe, Paytm, Bharat Pe in a safe manner as 'Payment Service Providers' into the regulated payments ecosystem - allowing them to innovate on payments user experiences and drive small merchant adoption of digital payments whilst keeping money flow within the regulated banking ecosystem.

How India is Leveraging from the DPI?

- The digitised biometric proof of identity (Aadhar) issued by the Unique Identification Authority of India.
 - Now, around 1.3 billion Indians possess this digital ID and on average 10 million eKYC requests per day are being received and facilitated through Aadhaar.
 - An eLocker for verifiable credentials, used by over 211 Million people to store over 6 Billion individual and business identity documents, educational credentials, vaccination certificates, and beyond.

- In the payments space, UPI facilitates 13 billion transactions monthly, serving about 350 million individuals and 50 million merchants.
 - DPI-enabled direct transfer of benefits has saved the government \$41 billion across central government schemes.
- Between 2015 and 2021, rural internet subscriptions increased by 200 percent, compared to a 158 percent increase in urban areas.
- There is an increase of bank penetration from 7 per cent to 80 per cent in just 7 years (which typically takes 47 years to achieve) leading to over 60% of all digital transactions globally.
- According to an analysis mature DPIs have generated a value of \$31.8 billion, equivalent to 0.9% of India's GDP. By 2030, this economic value is projected to increase to approximately 2.9% – 4.2% of GDP, considering both direct and indirect impacts.
- India also plans to increase export of its DPI and digital public goods by developing new platforms to help emerging economies with financial inclusion, innovation and economic growth.

Challenges

- **Exclusion from Social Service:** Unequal access to digital tools and literacy excluding millions from the social welfare system.
 - According to India Inequality Report 2022: Digital Divide', it was found that 8 per cent of people under the 'General' caste category had access to a computer or a laptop compared to 1 per cent of Scheduled Tribes (ST) or 2 per cent of Scheduled Castes (SC). Only 52% of India's population has access to internet service.
- **Disproportionate access to data:** Disproportionate access to people's data through rules mandating Aadhaar for almost everything.
- **Data Collection and Privacy:** Acute privacy risks to such data resulting from multiple instances of data breaches, whether it's Aadhaar, the Co-WIN platform or the DIKSHA app that collects children's data.
- **Unclear Policy and Regulations:** DPI application are governed by section 8 of companies act 2013 which deals organization whose objective are to promote social welfare, charity, environmental protection etc. By virtue of registering under section 8, they are out of purview of Right to information act.
- **Lack Interoperability:** There are many DPIs which work in different sector but there is lack of coordination among them and they are working in silos.

Conclusion

To achieve the dream of a \$5 trillion Indian economy, DPIs will act as the foundation for it. Also, if implemented carefully, it has the potential to eradicate inequality and poverty among different sections of society. If the government addresses the loopholes, it will surely help India to lead the world.

EXPECTED QUESTION FOR UPSC CSE

Descriptive Question

Q. Discuss the concept of Digital Public Infrastructure (DPI) in India, highlighting its components, significance, and the challenges associated with its implementation. How can DPI contribute to India's goal of becoming a \$5 trillion economy, and what measures can be taken to address the existing challenges? [15 marks] [250 words]

NATIONAL CLEAN AIR PROGRAMME

Why in News: The report by Centre for Science and Environment – titled National Clean Air Programme: An agenda for reform – was recently released.

Findings of the Report

- Nearly two-thirds of the funds allocated to 131 cities under the National Clean Air Programme (NCAP) have been used for dust management, while less than one per cent has been utilised to combat air pollution from the industrial sector and only 64% of the total funds given to the 131 cities have been spent so far.
- According to the report, only 0.61% of the total funds have been used to tackle industrial pollution, 12.63% for vehicular pollution and 14.51% for biomass burning.
- Among the cities covered under NCAP, 82 receive direct funding from the Union environment ministry, while 42 cities and seven urban agglomerations with populations over a million get funding from the 15th Finance Commission.
- A significant issue identified in the report is the focus on PM10 levels as the benchmark for assessing air quality improvement. This has diverted attention from the more harmful PM2.5 emissions, which are predominantly emitted from combustion sources.

Issues	Reform Actions / Recommendations
Dust control has become the focus	Make PM2.5 improvement the benchmark to drive action.
Mismatched aims and objectives	Real on-ground action must be incentivised
Key combustion sources neglected	Improve the metrics to prioritise sources of toxic emissions –focus on industry, transport, solid fuels
Non-transparent/unavailable data	Need transparency in reporting of action in cities to deepen the understanding of solutions implemented in cities
	Go beyond cities to take a regional approach

	National policies have to enable local action in cities and states
	NCAP needs long term policy visibility and funding strategy for sustained and scalable action
	Need sectoral targets and mandate
	Need protocol for data recording and reporting on indicators
	Need stronger institutional mechanism and capacity for planning and implementation in cities
	Performance-linked assessment needs to capture and promote best practices to build the learning curve for other cities
	Need sustainable funding strategy at Central and state levels for sustained and scalable action

About National Clean Air Programme (NCAP)

• Overview

- National Clean Air Programme has been launched by the Ministry of Environment, Forest and Climate Change as a comprehensive initiative in partnership with various Ministries and States to improve air quality at city, regional and national level.
- It is a focused and time bound scheme to implement various sectoral policies, strengthen monitoring and enhance public participation in more than 100 cities for effective air quality management.

- **Goal:** Meet prescribed annual average ambient air quality standards at all locations in the country in a stipulated time frame (long-term).

• Target

- Tentative national level target of 20%–30% reduction of Particulate Matter (PM10 and PM2.5) concentration by 2024 is proposed under NCAP.
- These interim targets are in line with global experiences which highlight that city specific actions led to 35%–40% PM2.5 reduction in five years for cities, such as Beijing and Seoul, whereas cities, such as Santiago and Mexico City have shown 73% and 61% reduction in 22 to 25 years with regard to PM2.5 and PM10 concentrations, respectively.

• Tenure

- NCAP is a mid-term, five-year action plan launched in 2019.
- However, international experiences and national studies indicate that significant outcomes in terms of air pollution initiatives are visible only in the long-term, and hence the programme may be further extended to 20–25 years in the long-term after a mid-term review of the outcomes.

- **Status of Air Quality:** Out of 131 identified cities, decrease in PM10 Concentration has been observed in 95 cities during 2023-24 as compared to levels during FY 2017-18.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. 'National Clean Air Programme: An agenda for reform' report is published by:

- (a) Ministry of Environment, Forest and Climate Change
- (b) The Energy and Resources Institute
- (c) Environmentalist Foundation of India
- (d) Centre for Science and Environment

Answer: d

IMPACT OF CLIMATE CHANGE ON MARGINAL FARMERS REPORT

Why in News: Recently, 'Impact of Climate Change on Marginal Farmers' Report was released.

Key Findings of the Report

- This report is a joint publication of the Forum of Enterprises for Equitable Development (FEED) in collaboration with the Development Intelligence Unit (DIU) covering 6,615 farmers across 21 states.
- Marginal farmer is someone with up to one hectare of agricultural land representing 68.5% of all farmers in India but owning only about 24% of the crop area.
- Around 80% of marginal farmers surveyed faced significant crop losses due to extreme weather events in the past five years, with more than half reporting severe impacts.
- The primary causes of crop damage were drought (41%), irregular rainfall including excessive or non-seasonal rains (32%), and early withdrawal or late arrival of the monsoons (24%).

The problem of marginal farmers

- **Livelihood issues:** Arised due to the lack of adequate use of quality inputs, poor irrigation facilities, absence of timely advisory, poor extension services leading to low yield, and crop failure, ets.
- **Unfavorable weather conditions,** including drought, flood, extended periods of high or low temperatures, etc.
- At various points of development (e.g. post-germination, reproduction), all crops show varying sensitivities to specific types of weather stresses leading to reduced agricultural production.

Impact of Climate Change on Marginal Farmers

Nearly 43% of the surveyed farmers lost at least half of their standing crops due to climate related issues.

Although 83% of these farmers are covered under the PM Kisan Samman Nidhi scheme, Only 30% of marginal farmers surveyed had access to crop insurance, and a mere 25% received timely financial credit.

Furthermore, rice, vegetables, and pulses are significantly affected by the uneven rainfall distribution. For example, in the northern states, paddy fields often remain submerged for more than a week, destroying newly planted seedlings.

Nearly two-thirds of the marginal farmers affected by extreme weather events have adopted climate-resilient agricultural practices, including changes in sowing time and methods, crop duration, and water and disease management strategies.

Although 48% of marginal farmers have a custom hiring centre within 10 km of their village, only 22% have hired equipment from these centres.

However, 76% of those who adopted these practices faced challenges such as lack of credit facilities, physical resources, limited knowledge, small land holdings, and high up-front costs.

Moreover, the report has not captured the impact of temperature variability on crops.

• Central Sector Schemes

- Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)
- Pradhan Mantri Kisan MaanDhan Yojana (PM-KMY)
- Pradhan Mantri Fasal Bima Yojana (PMFBY)
- Modified Interest Subvention Scheme (MISS)
- Agriculture Infrastructure Fund (AIF)
- Namo Drone Didi

• Centrally-sponsored Schemes

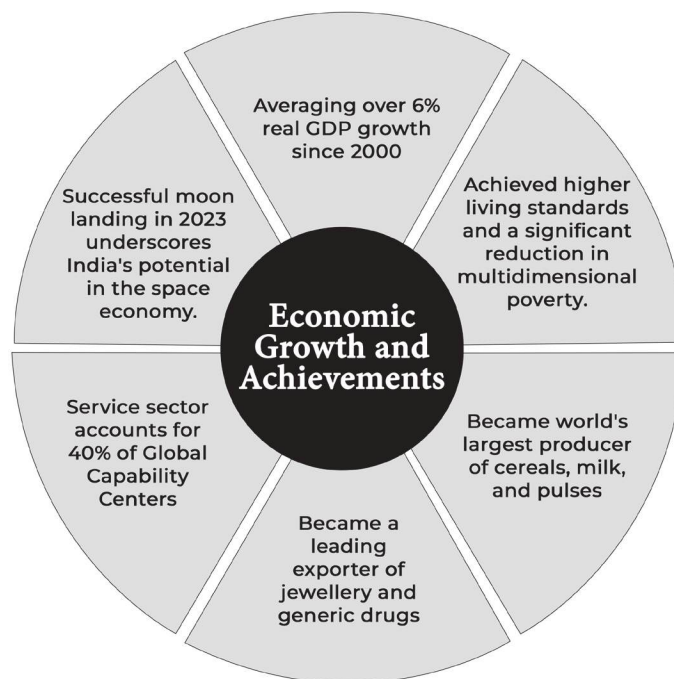
- Rashtriya Krishi Vikas Yojana - Detailed Project Report based schemes (RKVYDPR)
- Soil Health Card (SHC)
- Per Drop More Crop (PDMC)
- Micro Irrigation Fund (MIF)
- National Bamboo Mission (NBM)
- Digital Agriculture

IMF WORKING PAPER

Why in News: Working paper titled “Advancing India’s Structural Transformation and Catch-up to the Technology Frontier” was recently released by the International Monetary Fund (IMF).

Key Findings

India’s structural transformation still has some way to go. While the role of agriculture in terms of aggregate output has declined in India from over 40% in 1980 to 15% in 2019, it remains large in terms of employment, accounting for 42% of workers in 2019.



Structural Transformation Challenges

- Share of the agricultural sector in the GDP has been continuously declining due to reduced productivity, which is caused by the employment of a high number of workers (42%) in the sector.
- Similarly, the construction industry is also a significant employer with low productivity.

Technological Advancement

- Services sector outperformed the manufacturing sector and large firms in Information Technology (IT) services and jewelry manufacturing are at the technological frontier.
- Agriculture sector, construction industry, and trade lagged behind as compared to other sectors.
- Also, the average productivity of the Indian firms remained low.

Future Job Creation Needs

- Need to create 143-324 million jobs by 2050.

- Includes current job shortfall and population growth.
- Moving workers from agriculture to other sectors could boost GDP growth by 0.2-0.5 percentage points.

Required Structural Reforms for Employment Generation:

- Strengthening education and skilling
- Advancing labor market reforms
- Fostering trade integration
- Removing red tape and other obstacles to private sector growth
- Strengthening the social safety net
- Facilitating access to credit

Current Employment and Productivity Issue: Need to create productive, well-paying jobs in labor-intensive sectors such as the manufacturing sector because economic activity in India has shifted from agriculture to services over time.

Productivity-Enhancing Reforms

- **Strengthening education and skilling.** E.g., National Education Policy (NEP) 2020, Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and National Apprenticeship Promotion Scheme (NAPS).
- **Advancing labor market reforms.** E.g., Code on Wages, 2019, Industrial Relations Code, 2020, Social Security Code, 2020, and Occupational Safety, Health and Working Conditions Code, 2020.
- **Fostering trade integration.** E.g., Goods and Services Tax (GST) and various Trade agreements.
- **Sectoral Growth Drivers.** E.g., Make in India, Digital India, and Start-up India.
- **Continuing the public investment push.** E.g., National Infrastructure Pipeline (NIP), etc.
- Strengthening the social safety net. E.g., “One Nation, One Ration Card”, Pradhan Mantri Awas Yojana (PMAY), and Pradhan Mantri Garib Kalyan Yojana (PMGKY).
- **Facilitating access to credit.** E.g., Mudra Yojana, Pradhan Mantri Fasal Bima Yojana (PMFBY), Kisan Credit Card (KCC) and Stand-Up India.

INDIA'S ENERGY STORAGE LANDSCAPE' REPORT

Why in News: India's Energy Storage Landscape report was recently released by Mercom India Research.

Key Findings of the Report

- India has a cumulative installed battery energy storage system (BESS) capacity totalling 219.1 MWh as of March 2024.
- Chhattisgarh has the highest BESS capacity installed, accounting for 54.8% of cumulative installed capacity.
- According to the report, PhotoVoltaic systems combined with battery energy storage systems account for 90.6% of the total installed BESS capacity.

- Solar and wind accounted for 28.9% of the country's electricity capacity.

Significance

- The rapid addition of renewable energy sources like solar and wind has significantly impacted grid stability. So, BESS can help in improving grid stability.
- It will help to reduce green house gas emission.
- India plans to nearly double its power capacity to about 900 gigawatts (GW) by 2030, up from the current 427 GW, in response to a surge in demand.
 - The peak power demand in the country is projected to reach 366 GW by 2030, significantly up from the current 243 GW.
 - To achieve this feat India not only need renewable energy but also need how to store it so that it can be use judiciously.
- Given that India imports a significant amount of crude oil, it will assist India in controlling its trade deficit.

Challenges

- India lacks substantial reserves of key minerals such as lithium, cobalt, and nickel, essential for battery production.
- When it comes to research and development, India lags behind global powers like China, Japan, and South Korea. Significant R&D expenditures, the creation of a competent labour force, and cooperation between business and academic institutions are all necessary to close this gap.
- India is still developing the infrastructure required for large-scale battery manufacture, such as reliable power supplies, cutting-edge production facilities, and effective logistics networks.

About BESS

- Battery storage is a technology that enables storage of electricity for later use.
- A BESS is an electrochemical device that charges or collects energy from the solar energy, wind energy etc and then discharges the energy as per the requirement.
- The main types of batteries used in battery energy storage systems: Lithium-ion (Li-ion) batteries; Lead-acid batteries; Redox flow batteries; Sodium-sulfur batteries and Zinc-bromine flow batteries.

Conclusion

India is an emerging market for energy storage, still in the early stages of development. Despite rapid growth in renewable energy, energy storage has lagged, which could potentially lead to curtailment and a lack of grid flexibility and stability. To meet energy transition goals and manage the exponential increase in renewable energy, the government must prioritise energy storage to avoid issues faced by other countries with growing intermittent power but insufficient storage capacity.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements is correct according to the 'India's Energy Storage Landscape' report released by Mercom India Research?

- (a) As of March 2024, India has a cumulative installed BESS capacity of 500 MWh.
- (b) Chhattisgarh accounts for 54.8% of India's cumulative installed BESS capacity.
- (c) Solar and wind energy account for 90.6% of India's total electricity capacity.
- (d) BESS can help renewable energy to integrate with existing grid system.

Answer: b

REPORT ON CURRENCY & FINANCE

Why in News: The Reserve Bank of India (RBI) has recently released the "Report on Currency and Finance (RCF)" for the year 2023-24.

Key Details

- The RCF is an **annual publication** by the Reserve Bank of India (RBI).
- It covers various aspects of the **Indian economy and financial system**, providing insights and analysis on current economic conditions, financial stability, and policy issues.
- The theme for the 2023-24 report is "**India's Digital Revolution.**"
- **Focus:** The transformative impact of digitalization across various sectors in India, especially in the financial sector.

Key Highlights of the RCF

Digital Revolution

- The RCF emphasizes India's leading role in the global digital revolution.
- With robust **digital public infrastructure (DPI)**, evolving institutional frameworks, and a tech-savvy population, India has emerged as a frontrunner in this arena.
- Key initiatives such as **Aadhaar**, the world's largest biometric-based identification system, and the UPI, a real-time, low-cost transaction platform, have revolutionized service delivery and financial inclusion.

Digitalization in Finance

- The above-discussed initiatives have made **retail payments faster and more convenient**, while the RBI's **pilot runs of the E-Rupee** position India at the forefront of digital currency initiatives.
- The digital lending ecosystem is also vibrant, with

the **Open Credit Enablement Network** and the **Open Network for Digital Commerce (ONDC)** driving growth.

Remittance Inflows in India

- India continues to lead as the **highest remittance recipient globally**, with **US\$ 115.3 billion in 2023**, accounting for **13.5% of the world's** total remittances.
- The RCF highlights that **more than half** of India's inward remittances in 2021 **came from the Gulf countries**, with North America contributing 22%.
- The **remittance-to-GDP ratio** for India has risen from **2.8% in 2000 to 3.2% in 2023**, surpassing the gross FDI inflows to GDP ratio of 1.9% in 2023.
- Looking forward, India is poised to remain a **leading supplier of labor**, with its **working-age population expected to rise until 2048**, potentially propelling remittances to around \$160 billion by 2029.

Smartphones Penetration

- India's mobile penetration has seen remarkable growth, with **internet penetration reaching 55% in 2023** and an increase of **199 million internet users** over the past three years.
- The **cost per gigabyte** of data in India is the **lowest globally**, at an average of **Rs. 13.32 per GB**.
- India has one of the **highest mobile data consumption** rates worldwide, with an average per-user per-month consumption of **24.1 GB in 2023**.
- The number of **smartphone users** in India was about **750 million in 2023**, expected to reach **1 billion by 2026**.
- The RCF projects that India will become the **second-largest smartphone manufacturer** within the next **5 years**.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following is the most likely consequence of implementing the 'Unified Payments Interface (UPI)'?

- (a) Mobile wallets will not be necessary for online payments.
- (b) Digital currency will replace physical currency in about two decades.
- (c) FDI inflows will drastically increase.
- (d) Direct transfer of subsidies to poor people will become very effective.

Answer: a

STATE OF THE WORLD'S FOREST REPORT

Why in News: Recently the Food and Agriculture Organisation (FAO) of the United Nation has released a "State of the World's Forest Report".

Key Findings of the Report

Forest Area

- The Russian Federation, Brazil, Canada, the United States of America, and China account for 54 per cent of the global forest area, in descending order.
- Another 10 countries, including Australia, the Democratic Republic of Congo, Indonesia, Peru and India, contribute about two-thirds of the global forest area.
- The report estimated that between 1990 and 2020, approximately 420 million ha of forest were converted to land use. However, deforestation rates decline from 15.8 million ha per year between 1990 and 2002 to 10.2 million ha between 2015 and 2020.
- According to the report, net rate of change in forest area (the difference between forest expansion and deforestation) in 2010-2020 has significantly reduced as compare to previous two decades.

Mangroves

- South and Southeast Asia contributed almost 44 per cent of the total global mangroves area.
- The global rate of mangrove loss decreased by 23% between 2000-2010 and 2010-2020, but the increase in mangrove areas also slowed slightly, according to the report.
- The net change in mangrove area globally was negative between 2000 and 2020 the net change in mangrove area globally was negative between 2000 and 2020

Fire

- Satellite data estimated that about 383 million ha of land were affected by fire in 2023 alone.

Threats from the Pests

- There is a rising threat from pests, especially in Asia and North America.
 - For example, South Korea lost 12 million pine trees between 1988 and 2022 because of pine wood nematode pest

Conclusion

Key findings and insights from the newly published reports were presented at the Global Landscapes Forum (GLF) Digital Conference 2024. The findings noted that despite some progress in recent years, deforestation and forest degradation continue at alarming rates, highlighting agriculture as the main driver of deforestation and forest fragmentation.

REPORT ON ROSEWOOD TREE SPECIES

Why in News: Report on the “Conservation and Trade of CITES-listed Rosewood tree species” was recently released by the Convention on International Trade in Endangered Species (CITES).

Key Findings of the Report

- ‘Rosewood’ is a commercial/trade term for various tropical hardwoods prized for furniture making.
- Overexploitation of Rosewood in Asia has shifted the trade to Latin America and Africa.
- CITES has listed many Rosewood species due to trade impacts on their survival.
- A study on rosewood conservation and trade was commissioned.
- 57 CITES-listed species are commercially traded as rosewood.
- 13 species are categorized as high priority for conservation.
- Trade data analysis shows most Asian rosewood imports are from cultivated sources, while African imports are primarily wild-sourced.
- Large-scale plantations for most rosewood species are rare.
- Recommendations by CITES for improving rosewood trade management are proposed.
- CITES has issued guidelines for sustainable harvest and trade of rosewood specimens.

Rosewood Species in India: ‘*Dalbergia Latifolia*’

- It is indigenous to India and distributed in the sub-Himalayan tract of eastern U.P to Sikkim.
- It also occurs in central, western and southern India.
- It requires 8 C to 50 C temperature range with 750mm to 5000mm annual rainfall.

ROSEWOOD

Location:

Africa, Asia and Latin America
Critical to health of indigenous forests, our planet and people
Critical to survival of thousands of species that live in forests

The health of indigenous forests is critical to the survival of thousands of species that live in them and to the health of our planet and people

Rosewood accounts for 35% of the value of all seized wildlife products

Convention on International Trade in Endangered Species of Wild Fauna and Flora

- It is an international agreement between governments.
- It was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN (The World Conservation Union).
- Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.
- India has been a CITES Party since 1976.

ANNUAL SURVEY OF UNINCORPORATED ENTERPRISES IN INDIA

Why in News: “Annual Survey of Unincorporated Enterprises (ASUS) 2022-23” was recently released

Key Highlights of ASUS 2022-23

- **Survey conducted by:** National Sample Survey Office (NSSO), Ministry of Statistics and Programme Implementation (MoSPI).
- **Survey period:** October, 2022-September, 2023
- **Coverage:**
 - The rural and urban areas of India.
 - Unincorporated Non-agricultural establishments belonging to three sectors viz., Manufacturing, Trade and Other Services.
 - Total number of establishments belonging to this sector were 5.97 crore. Own Account Establishments (OAE) were 5.53 crore .

Findings:

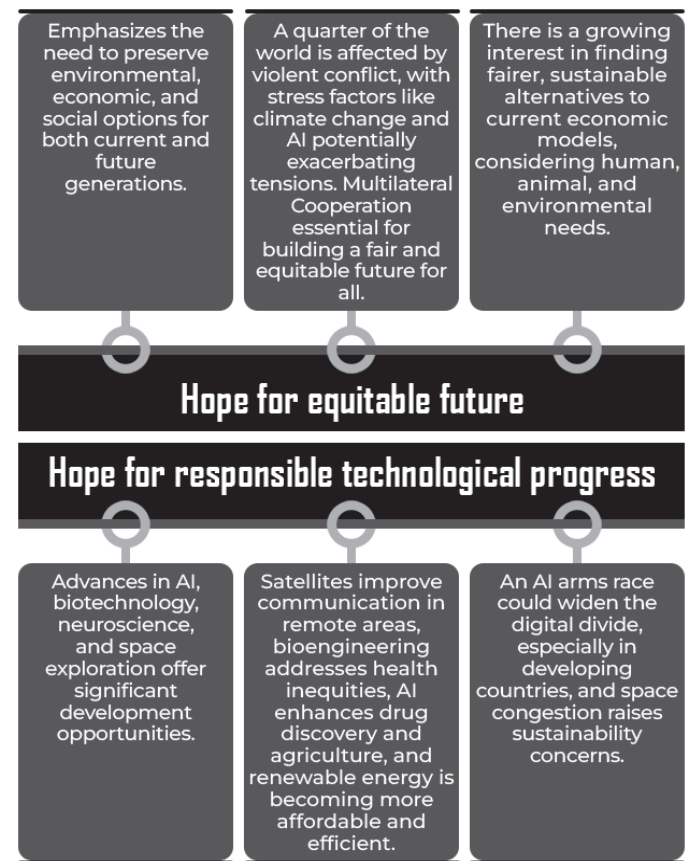
- **Uttar Pradesh (13.82%)**, West Bengal (12.03%) and Maharashtra (9.37%) had produced the most number of Hired Worker Establishments (HWE) establishments.
- Maximum number of HWEs had been observed in Maharashtra (13.29%).
- Leading state for OAE in the country was Uttar Pradesh (14.46%).
- Proprietary establishments run by women entrepreneurs: Telangana (43.32%), West Bengal (32.74%), and Karnataka (31.42%).
- Most of the owners of proprietary and partnership concerns belonged to Other Backward Classes (OBC) (51.9%).
- 99.5% of the estimated unincorporated non-agricultural establishments were non-NPIs (Non-profit Institutions).
- This sector employed 11 crore workers during 2022-2023 as compared to 9.8 crore workers during 2021-22, showing an increase of about 1.2 crore.
- Largest female employment generated in West Bengal (11.30%) followed by Uttar Pradesh (11.17%) and Maharashtra (10.37%).
- Maharashtra (12.20%), Uttar Pradesh (10.56%) and Tamil Nadu (8.57%) together contributed around one-third of overall Gross Value Added (GVA) (Market establishments).
- Maharashtra (Rs. 7,15,253), Gujarat (Rs. 5,58,063) and Jammu & Kashmir (Rs. 5,21,178) had been the top 3 states among the major states to have owned the most valued fixed assets per establishment.
- Kerala (Rs. 1,64,826), Andhra Pradesh (93,920) and Jammu & Kashmir (89,998) were the states which are having the most outstanding loan per establishment.

- **Own Account Establishment (OAE):** An establishment which is run without any hired worker employed on a fairly regular basis
- **Hired Worker Establishment (HWE):** An establishment which is employing at least one hired worker on a fairly regular basis is termed as hired worker establishment.

SIGNAL SPOTLIGHT REPORT

Why in News: Recently the United Nation Development Programme (UNDP) has released a **Signal Spotlight Report** emphasising the emerging signals and trends that can be considered significant for development in the next 3 to 10 years.

Key Highlights of the Reports



Hope for resilient and connected communities

- Building connected communities is crucial for fairer futures, addressing challenges like conflict trauma, pandemic-induced loneliness, and “waithood” among youth.
- The rise of generative AI fuels disinformation, eroding trust in institutions and shared realities.
- Increased appreciation for clean air, water, and social connections shows promise, earlier these things were taken for granted.
- Progress toward gender equality could enhance opportunities for all, contributing to more equitable futures.

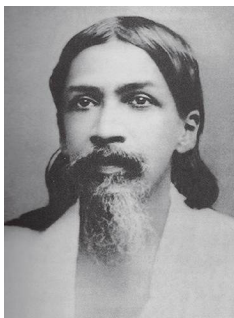
PERSONALITIES IN NEWS

SRI AUROBINDO GHOSE

Why in New: Prime Minister of India has recently paid homage to Sri Aurobindo on his Birth Anniversary.

About Aurobindo Ghose

- Sri Aurobindo was born in Calcutta on 15 August 1872.
- At the age of seven he was taken to England for education. There he studied at St. Paul's School, London, and at King's College, Cambridge.
- Despite receiving highly Westernized education, and strict instructions from his father, Aurobindo became a member of a secret society of Indian revolutionaries called 'Lotus and Daggers'. Over a period of time, Aurobindo became the chief exponent of militant nationalism.
- He was greatly impressed by the way the French established democracy through revolution that took just five short-years than the British who took more than 12 years.
- Returning to India in 1893, he worked for the next thirteen years in the Princely State of Baroda in the service of the Maharaja and as a professor in Baroda College.
- In 1906, soon after the Partition of Bengal, Sri Aurobindo quit his post in Baroda and went to Calcutta, where he soon became one of the leaders of the Nationalist movement.

**Contribution to the Indian Nationalism**

- In 1900, at Baroda college, Aurobindo was appointed as a professor. During this time, a Maratha newspaper, Induprakash, wrote a sensitive series of articles entitled "New Lamps for Old."
 - Through these articles, Aurobindo suggested people not to depend upon the charity of the British. He also said that our nation's actual enemy was our weakness and cowardness, not the external forces.
- He also criticized the Congress party. He said that the party had not trained the people to act or to work together but trained them to speak in one voice.
 - He describes the party as a Party of the Middle-class that depends on the blessings of the British.

- In 1904 and 1905, he attained the Congress Sessions and opined that the party members for being too timid and unmotivated. According to him, the Moderates could never rise out of their servitude, and their thinking creeps up.
- In 1905, Aurobindo considered the partition of Bengal as a blessing as it would raise the people's national sentiment.
- In 1906, through a Bengali newspaper, Yugantar, he called for open revolt and complete independence.
 - This article became widely popular and sparked a national sentiment. As a result, mass protests spread across the country.
- In 1906, at the request of Bipin Chandra Pal, he wrote some articles in the Vandemataram newspaper.
 - This article angered the British government because, through this article, he highlighted British dominance in Indian politics and talked about the whole process of westernization. Aurobindo described the Surat split of 1907 as God's will.
- In 1908 Aurobindo was arrested for his involvement in the Alipore conspiracy case.
 - The trial of the Alipore Bomb Case lasted for a year, but eventually, he was acquitted on 6th May 1909. His defence counsel was Chittaranjan Das.
- In 1910 he withdrew from politics and went to Pondicherry in order to devote himself entirely to his inner spiritual life and work.
 - In 1914, after four years of secluded yoga, he started a monthly philosophical magazine called Arya. This ceased publication in 1921.
- In 1926, with the help of his spiritual collaborator, the Mother, he founded the Sri Aurobindo Ashram. Among his many writings are The Life Divine, The Synthesis of Yoga and Savitri.
- Sri Aurobindo left his body on 5 December 1950.

LOKMANYA TILAK

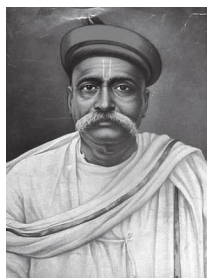
Why in News: The Prime Minister of India has recently paid tributes to Lokmanya Tilak on his birth anniversary.

Key Details

Prime Minister of India was conferred the Lokmanya Tilak National Award for his outstanding contributions towards the progress of the country at a function in Pune.

About Lokmanya Tilak and his Contribution

- Tilak was born on July 23, 1856. A lawyer, scholar, and journalist (he ran the newspaper Kesari in Marathi and Maratha in English), Tilak joined the Indian National Congress in 1890.
- Initially, his stance aligned with the Congress, advocating for reforms and more rights for Indians, without calling for a complete revolution. His articles in Kesari and Maratha generally supported Congress demands from 1885 to 1895.
- Tilak became frustrated with the Congress's moderate approach and, along with Lala Lajpat Rai and Bipin Chandra Pal, formed the Lal Bal Pal trio.
 - They advocated for complete freedom from British rule, endorsing the use of unconstitutional means, including violence, to achieve this goal.
- Tilak's main contribution to the freedom struggle was taking the movement to the common people and giving him the tag of 'Lokmanya' (beloved of the people).
- It was Tilak who advocated vociferously for swaraj (self-governance or freedom from foreign rule).
 - This the reason once Gnadhi Ji said "No man preached the gospel of Swaraj with the consistency and the insistence of Lokmanya"
- But Tilak has been criticised for giving the freedom struggle a communal shade — his mass mobilisation programmes like the celebration of Ganeshchaturthi and Shivaji Jayanti revolved around Hindu festivals and heroes — and for his conservative stand on women's emancipation and caste reforms.
- As a proponent of atma-nirbharata or self-reliance, he strongly supported Indian industrialists, especially small entrepreneurs.
 - He became the treasurer of what came to be called the "paisa fund" to finance local industries and village enterprises. The fund was also used to send bright Indian students abroad for technical study.
- In 1916 he concluded the Lucknow Pact with Mohammed Ali Jinnah, which provided for Hindu-Muslim unity in the nationalist struggle.
- Tilak valued education highly, viewing it as essential for the nation's progress.
 - In 1917, he emphasized that after achieving Swaraj, the priority should be educating everyone, warning that Swaraj would not endure without widespread education.



Literary Contributions of Bal Gangadhar Tilak

- He used to write articles about the Indian independence movement in a Marathi newspaper called "Kesari" and an English newspaper called "Maharatta".

- He authored two books called Shrimadh Bhagvad Gita Rahasya and Arctic Home of the Vedas.
- He claimed in his book "The Arctic Home in the Vedas" that the Vedas could only have been written in the Arctics, and that the Aryan bards carried them south after the last ice age. He suggested a new method for determining the Vedas' exact period.
- In prison at Mandalay, Tilak wrote: "Shrimad Bhagvad Gita Rahasya," which describes the study of "Karma Yoga" in the Bhagavad Gita, which is considered a gift of the Vedas and Upanishads.

Conclusion

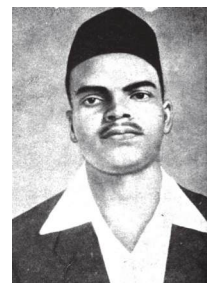
Tilak was one of the first to maintain that Indians should cease to cooperate with foreign rule, but he always denied that he had ever encouraged the use of violence. In tributes, Gandhi called him "the Maker of Modern India," and Jawaharlal Nehru, independent India's first prime minister, described him as "the Father of the Indian Revolution."

SHIVARAM RAJGURU

Why in News: Freedom Fighter Shivaram Rajguru was recently remembered on his 116th birth anniversary.

About Shivaram Rajguru

- His full name was Hari Shivaram Rajguru and was born into a Deshastha Brahmin family.
- Since his childhood days, he had witnessed the brutal atrocities that the Imperial British Raj inflicted on India and her people. This instilled within him a strong urge to join hands with the revolutionaries in a bid for India's freedom struggle.
- Shivaram Hari Rajguru was a prominent and active Indian revolutionary during the freedom struggle.
- In the days of the Indian Freedom Movement, the Hindustan Socialist Republican Army (HSRA) was an active force working against the British. Their main motive was to strike fear into the heart of the British regime. Shivaram Rajguru was a key member of the **Hindustan Socialist Republican Association (HSRA)**.
- On December 18, 1928, in Ferozepur, Lahore, a planned retaliation was enforced that led to the assassination of Deputy Superintendent of Police, J.P. Saunders. Shivaram Rajguru, along with Sukhdev Thapar, was accomplice of Bhagat Singh who spearheaded the attack.
 - Rajguru then went into hiding in Nagpur. Whilst taking shelter in the house of an RSS worker, he even met Dr. K. B. Hedgewar. On his travel to Pune, however, Shivaram was finally arrested.
 - Shivaram Rajguru was hanged on 23rd March 1931 along with Bhagat Singh and Sukhdev, after being



tried under the **Lahore Conspiracy Case** from 1929 to 1930, on the charges of murdering ASP John Saunders.

- Most of the inner circle members of the Hindustan Socialist Republican Association who were vigorously involved in the on-going political activities had their studio photographs taken well in advance.
 - These later became templates for eulogy prints of the dead. Rajguru Martyrdom Print is a part of it as well.
 - Rajguru's death was a crucial incident for the Indian political history. Thus, the Rajguru Martyrdom Print also occupies a key position as a Nationalist Artwork.

YAMINI KRISHNAMURTHY

Why in News: Veteran Bharatanatyam dancer Yamini Krishnamurthy died at the age of 83.

About Yamini Krishnamurthy

- Born in Madanapalli in Andhra Pradesh's Chittoor into a family of Sanskrit scholars, Krishnamurti grew up in Tamil Nadu after her family moved there. Yamini Krishnamurthy had always been awed by various postures of Nataraja and sculptures on temple walls.
- She learned Bharathanatyam at Kalakshetra (Madras) under Rukmini Devi Arundale. She had learnt Kuchipudi under great teachers like Vedantam Lakshmi Narayana Sastry, Pasumarthi Venu Gopal Sharma, Chinta Krishnamurthy and Vedantam Satyanarayana Sharma. Her training in Odissi was under teachers like Pankaj Charan Das and Kelucharan Mohapatra.
- Besides learning the various dance forms, Krishnamurthy was trained in Carnatic vocals and the veena.
- At the age of 17, Yamini Krishnamurthy gave her first solo performance in 1957.
- Krishnamurti was only 28 and dancing professionally for a decade when she was honoured with Padma Shri in 1968, followed by a Padma Bhushan in 2001 and a Padma Vibhushan in 2016.



Contribution

- Yamini Krishnamurti who set Bharatanatyam benchmark and torchbearer of Kuchipudi and Odissi. Her performances, marked by grace, precision and emotional depth, electrified audiences and earned her accolades, both nationally and internationally.
- Many considered Yamini Krishnamurthy a celestial nymph from the Gandharva Loka who descended on earth to captivate everyone with her dance. Such was the power of her dance that anyone who witnessed it was transformed.
- Yamini Krishnamurthy transformed the classical dance scene in India from the late 50s to the early 90s.

Towards the end of her life, she was living in New Delhi, running the institute Nriya Kaustubha.

Krishnamurti is also credited with a noteworthy contribution to the nation's soft power in post-independent India. She travelled globally and extensively, besides popularising Bharatanatyam and Kuchipudi in North India. The Tirumala-Tirupati Devasthanams Trust honoured her with the title 'Asthana Nartaki'.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following statements about Yamini Krishnamurthy is correct?

- Yamini Krishnamurthy was primarily trained in Bharatanatyam and was not trained in other classical dance forms.
- Krishnamurthy received the Padma Shri award in 1968, the Padma Bhushan in 2001, and the Padma Vibhushan in 2016.
- Yamini Krishnamurthy was known for her contributions solely in the field of Carnatic music and veena performance.
- She was honored with the title 'Asthana Nartaki' by the Sangeet Natak Akademi for her contributions to classical dance.

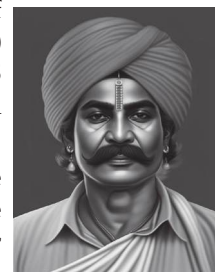
Answer: b

RAGHOJI BHANGRE

Why in News: Ministry of Culture has recently released the third Comic book on stories of Raghoji Bhangre along with other Tribal Freedom Fighters during Tiranga Utsav celebration in New Delhi.

Key Details

- Ministry of Culture as a part of Azadi Ka Amrit Mahotsav (AKM) has released pictorial books on 75 freedom fighters in collaboration with Amar Chitra Katha (ACK).
- Aim: To create awareness among the youth and children about the supreme sacrifice and patriotism of our lesser known heroes of freedom struggle.
- The first ACK Comic book on India's 20 Women Unsung Heroes and Second Comic book on stories of 15 Women elected to the Constituent Assembly has been released earlier.



About Raghoji Bhangre (1805-1848)

- He was an Indian Revolutionary who belonged to the Mahadeo Koli tribe.

- He challenged and defied the British power in **Maharashtra**.
- He was the son of Ramji Rao Bhangre a Koli who also resisted British rule and was subsequently hanged in Cellular Jail.
- He had killed a British Officer and 10 constables in an ambush in 1844.

Rebellion of Raghoji Bhangre (1845-1847)

- In the nineteenth century, the moneylenders, under the protection of the British regime, exploited the tribals and farmers by charging arbitrary interest rates on loans and seizing their lands in exchange for recovering the debt. Bhangre became infamous owing to his reckless campaign against such moneylenders.
- In 1845, some moneylenders complained to the police, and when the officials came to investigate, Bhangre's mother refused to disclose his whereabouts. The police officers tortured Bhangre's mother, which deeply enraged him.
- Bhangre collected a band of Kolis and wandered around Nasik and Ahmednagar, seeking revenge. He cut off the nose of every moneylender he could lay his hands on, causing great tension in the region.
- All the village moneylenders escaped to district towns fearing for their lives. Raghoji was pursued by the police and had to break off with his troops to disappear.
- Raghoji Bhangre was eventually captured in 1847 and later hanged on the charge of multiple murders.

RAM NARAIN AGARWAL

Why in News: 'Father of Agni missile', RN Agarwal, recently passed away at the age of 84 following mild old-age related ailments.

About Dr. Ram Narain Agarwal

- He was a distinguished Scientist of the Defence Research and Development Organisation (DRDO).
- Padma Bhushan awardee and outstanding aerospace scientist, Dr. Ram Narain Agarwal, was instrumental in the development of India's long-range missile, Agni.
- He worked with late President A.P.J Abdul Kalam, 'Missile Man', when the government launched Integrated Guided Missile Development Programme in the year 1983.



- He led the country's ambitious Agni missile programme for over two decades right from its beginning in 1983 as Project Director.
- He inspired the team to successfully test the Technology demonstrator missile in May 1989.
- He retired as the founder and director of the Advanced Systems Laboratory (ASL), Hyderabad in 2005.
- He played a key role in establishing the re-entry technology, all composite heat shield, onboard propulsion system, guidance and control etc for missiles during a distinguished tenure of 22 years.
- In 1995 he was appointed Programme Director of Agni for weaponisation and deployment of Agni 2.
- In recognition of his distinguished services, the Government of India conferred Agarwal with Padma Shri in the year 1990 and Padma Bhushan in 2000.
- After retiring from Defence Research and Development Organisation (DRDO) as a Distinguished Scientist, he settled in Hyderabad.

Integrated Guided Missile Development Programme (IGMDP)

- The Integrated Guided Missile Development Programme (IGMDP) was conceived by renowned scientist Dr. A P J Abdul Kalam to enable India attain self-sufficiency in the field of missile technology.
- The missiles developed under the programme:
 - Short-range surface-to-surface ballistic missile **Prithvi**
 - Intermediate-range surface-to-surface ballistic missile **Agni**
 - Short-range low-level surface-to-air missile **Trishul**
 - Medium-range surface-to-air missile **Akash**
 - Third generation anti-tank missile **Nag**
- The Agni was initially conceived as a technology demonstrator project in the form of a re-entry vehicle. It was later upgraded to a ballistic missile with different ranges.

Agni Missiles

- Agni-1 to 5 missiles are designed & developed by DRDO and inducted into Services to act as deterrence & meet the country's security requirements.
- These are medium to intercontinental range, surface-to-surface ballistic missiles.
- The first missile of the series, Agni-I was developed under the Integrated Guided Missile Development Programme (IGMDP) and tested in 1989. After its success, the Agni missile programme was separated from the GMDP upon realizing its strategic importance.

Name	Type	Range	Status
Agni-I	Medium Range Ballistic Missile	700-1200 km	Operational
Agni-II	Medium Range Ballistic Missile	2000-3500 km	Operational
Agni-III	Intermediate Range Ballistic Missile	3000-5000 km	Operational

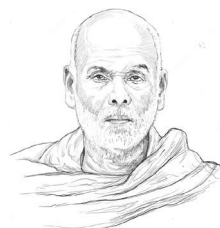
Agni-IV	Intermediate Range Ballistic Missile	3500-4000 km	Operational
Agni-V	Intercontinental Ballistic Missile	7000-8000 km	Operational
Agni-VI	Intercontinental Ballistic Missile	11000-12000 km	Under Development
Agni-P (Prime)	Medium Range Ballistic Missile	1000-2000 km	In trial

SREE NARAYANA GURU

Why in News: Recently Kerala Chief Minister paid obeisance to the saint-reformer Sree Narayana Guru on his 170th birth anniversary.

About Sree Narayana Guru

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



Teachings and Principles

Sree Narayana Guru's philosophies on openness and inclusivity are especially relevant in a world that is becoming increasingly diverse today.

- He propagated the message of 'One Caste, One Religion and One God for Mankind'.
- Whichever be the religion of a man, it suffices if it makes a better man.
- Acts that one performs for the sake of oneself should also aim for the good of others.

Social Reforms

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

ARTICLES FROM YOJANA (AUGUST 2024)

CELLULAR JAIL – THE SAGA OF RESISTANCE

- The Cellular Jail, also known as '*Kālā Pānī*' was a British colonial prison in the Andaman and Nicobar Islands. The prison was used by the colonial government of India for the purpose of exiling criminals and political prisoners.
- Many notable independence activists, including Sardar Singh Artillery, Diwan Singh Kalepani, Yogendra Shukla, Batukeshwar Dutt, Shadan Chandra Chatterjee, Sohan Singh, Vinayak Savarkar, Hare Krishna Konar, Shiv Verma, Allama Fazl-e-Haq Khairabadi, and Sudhanshu Dasgupta were imprisoned here during the struggle for India's independence.
- The construction of this infamous prison began in 1896 and was completed in 1906 under British colonial rule.
- The jail was built primarily to exile and punish political prisoners and revolutionaries who actively opposed British authority.
- The establishment of Cellular Jail was a direct consequence of the 1857 Sepoy Mutiny, a significant uprising against British rule, which prompted the British to adopt more stringent measures in dealing with dissent.
- Today, the complex serves as a national memorial monument.
- A proposal of the tentative list of the UNESCO World Heritage Convention, submitted in April 2014, mentions the Cellular Jail in the .

Key Facts About Cellular Jail

- **Location:** Cellular Jail is located in Port Blair, the capital of the Andaman and Nicobar Islands, an archipelago in the Bay of Bengal, which was strategically chosen for its remoteness, making escape nearly impossible.
- **Architecture:** The jail's design features seven wings radiating from a central watchtower, resembling a spider's web. This unique architectural layout was intended to ensure that no two prisoners could communicate with each other, thus preventing any form of rebellion or solidarity among them.
- **Construction Timeline:** The jail was officially inaugurated in 1906 and operated until India gained independence in 1947. During its operational years, it became a symbol of the inhumanity of colonial rule.
- **Closure:** Following India's independence in 1947, the jail was closed, and in 1969 it was declared a national

memorial, preserving its history and significance. The site has been developed to educate visitors about the atrocities committed during the colonial era and the heroism of those who suffered within its walls.

- **Architecture:** It was designed by British architect J. A. H. W. Macpherson based on the 'Pennsylvania System or Separate System' theory, which required separate confinement of each inmate for complete isolation from other inmates, with no communication possible between prisoners in the same or different wings.
- Each cell was designed for solitary confinement, measuring approximately 4.5 meters by 2.7 meters.
- They were equipped with thick walls and small windows, limiting light and air, creating a suffocating environment for inmates.
- The design aimed to prevent any form of communication or solidarity among prisoners.
- The central watchtower, which rises above the prison wings, was strategically placed to allow guards to monitor the movements of all prisoners. This architectural feature emphasized the oppressive nature of the jail, instilling fear among inmates.

Freedom Fighters Associated With Cellular Jail

- **Vinayak Damodar Savarkar:** A prominent revolutionary, poet, and politician, he was a key figure in the Indian independence movement. Known as 'Veer' for his bravery, he was sentenced in 1911 to two life terms (50 years) in the Cellular Jail of the Andamans for his involvement in anti-colonial activities, including opposition to the Morley-Minto Reforms (Indian Councils Act 1909). Savarkar is also credited with popularizing the concept of "Hindutva." He was eventually released in 1924, having played a crucial role in mobilizing support for India's independence.
- **Batukeshwar Dutt:** He was also known as B.K. Dutt, was a revolutionary freedom fighter who, alongside Bhagat Singh, participated in the Central Legislative Assembly bombing in 1929. He was sentenced to life imprisonment and exiled to the Cellular Jail in Port Blair. Dutt passed away on July 20, 1965, at the age of 54.
- **Fazl-E-Haq Khairabadi:** He was arrested on January 30, 1859, for inciting violence following the Indian Rebellion of 1857. He was found guilty of encouraging murder and leading a 'jihad' and was sentenced to life imprisonment in the Cellular Jail on the Andaman Islands. His property was also confiscated by the British authorities.

- **Barindra Kumar Ghose:** He was involved in the Alipore Bomb Case following an attempted assassination of Kingsford by revolutionaries Khudiram and Prafulla on April 30, 1908, was arrested alongside his brother Aurobindo Ghosh. Initially sentenced to death, Barin's sentence was reduced to life imprisonment, and he was deported to the Cellular Jail in Andaman in 1909.
- **Sushil Dasgupta:** He was a member of the revolutionary Yugantar Dal of Bengal, was involved in the Putiya Mail Robbery case of 1929. After escaping from Medinipur prison, he was eventually captured and sent to the Cellular Jail. His comrades, Sachin Kar Gupta and Dinesh Majumdar, also faced imprisonment, with Dinesh being executed.
- On December 29, 1943, political control of the Andaman Islands was transferred to Subhas Chandra Bose's Azad Hind government. Bose visited Port Blair and raised the tricolor flag of the Indian National Army.

End of Cellular Jail as a prison

- Bowing either to the general and popular demand of Indians or their constant agitation or because of its own political wisdom, the British government declared general amnesty for the political prisoners in the Andamans in 1920.
- Thereafter, the cellular jail was closed, and all the remaining political prisoners were taken back to the mainland

UNTOLD STORIES OF FREEDOM STRUGGLE FROM NORTHEAST INDIA

- **Gomdhar Konwar, Assam's First Martyr:** He was a prominent figure in the struggle for independence from Assam. Born in 1915, he became actively involved in the freedom movement during the 1940s. He was a member of the Indian National Congress and played a significant role in mobilizing the youth against British rule. Konwar is best remembered for his bravery during the Quit India Movement of 1942, where he led protests and faced severe repression. The Government of India posthumously honored him by naming various institutions after him, recognizing his contributions to the freedom struggle.
- **Moongri: The First Woman Martyr:** She is recognized as one of the first female martyrs in the Indian freedom movement. Her activism began in the early 20th century, where she participated in various protests against British oppression. Moongri's ultimate sacrifice came during a protest against oppressive policies, where she lost her life. The Government of India has acknowledged her contributions through various memorials and educational institutions named in her honor.
- **Dhekiajuli Massacre, India's Youngest Martyr:** The Dhekiajuli Massacre in 1942 marked a tragic chapter in Assam's history, where British forces opened fire on unarmed protesters. Among the martyrs was a young boy, who became known as India's youngest martyr. His name remains etched in history, symbolizing the innocence lost during the struggle for freedom. Commemorative events and memorials have been established to honor the victims, reflecting the government's recognition of their sacrifice.
- **Bom Singpho of Arunachal Pradesh:** He was a key figure in the freedom movement from Arunachal Pradesh. He was instrumental in organizing local tribes against British rule and played a significant role in the anti-colonial agitation. His efforts to unite various tribes for a common cause laid the foundation for future movements in the region. The Indian government has recognized his contributions through various initiatives aimed at preserving the history of tribal freedom fighters.
- **Thangal General of Manipur:** He is also known as **Thangal Sardar**, was a prominent leader in the Manipuri resistance against British rule during the **First Anglo-Manipur War (1891)**. He led guerrilla warfare tactics against colonial forces and became a symbol of resistance for the Manipuri people. His legacy is celebrated in Manipur, with several institutions and events commemorating his contributions to the freedom struggle.
- **Ka Phan Nonglait of Meghalaya:** She was a significant figure in Meghalaya's freedom movement. She led protests against British policies and was known for her fearless spirit. Her contributions to the struggle for independence have been recognized by the state government, with memorials and educational programs dedicated to her legacy.
- **Ropuiliani from Mizoram:** He was a notable freedom fighter from Mizoram, participating actively in the anti-colonial struggle. He was involved in organizing local communities against British rule and played a crucial role in raising awareness about the freedom movement. The government has honored him through various commemorations and educational initiatives, highlighting his contributions to the nation's history.
- **Bhogeswari Phukanani (1885-1942):** A courageous freedom fighter from Assam, she actively participated in the **Quit India Movement** despite being a mother of eight. She played a key role in liberating the Congress office in Berhampur, Assam, from British control. She was shot by British police and succumbed to her injuries after 20 days, making the ultimate sacrifice for India's freedom.
- **U. Tirot Singh:** A leader of the Khasi tribe, Tirot Singh led his people in a guerrilla war against the British when they attempted to build a road through Khasi Hills without fulfilling their promises. Despite being outmatched in terms of weaponry, he fought bravely for four years before being captured and imprisoned in Dhaka, where he died.
- **Shoorvir Pasaltha Khuangchera:** A legendary figure in

Mizoram, Pasaltha Khuangchera was the first Mizo leader to resist British invasion in 1890. He fought valiantly against the British forces in the Lushai Hills and died in battle. His bravery remains an inspiration, though he is less recognized nationally.

- **Rani Gaidinliu:** A prominent female leader from the Naga community, she initiated a movement against British rule at the age of 16. Captured and sentenced to life imprisonment, she was later released after India's independence. Rani Gaidinliu continued to work for the upliftment of her people and was awarded the Padma Bhushan for her contributions.
 - **Kanaklata Baruah (1924-1942):** A 17-year-old freedom fighter from Assam, Kanaklata was shot dead by British police while attempting to hoist the national flag at a police station during the Quit India Movement.
- Moje Riba:** A freedom fighter from Arunachal Pradesh, Riba was the first person to hoist the Indian tricolor in

Dipa village on August 15, 1947. He was arrested for his involvement in the Quit India Movement and for distributing pamphlets advocating independence.

- **Sachindra Lal Singh from Tripura:** He was an influential leader from Tripura who actively participated in the freedom struggle. He played a vital role in mobilizing the masses against British rule and was involved in various movements aimed at securing independence. The government of India has acknowledged his contributions through memorials and educational institutions, ensuring that his legacy is preserved.

EXPECTED QUESTIONS FOR UPSC CSE

Descriptive Question

- Q. Mention some of the freedom nationalists along with their contribution from North- East India ? [15 marks] [250 words]



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ARTICLE FROM KURUKSHETRA (AUGUST 2024)

e-LEARNING: FROM CLASSROOMS TO SCREENS: FUTURE OF LEARNING WITH DIGITAL EDUCATION

History of Technology in Education

- From the early use of audio-visual aids to the integration of computers and the internet, technology has played a significant role in transforming the educational landscape.
- Early 20th century:** Educational institutions began incorporating audio-visual aids such as film projectors, slide projectors and educational films to enhance classroom instruction.
- 1950s and 1960s:** Television sets became more accessible, leading to the emergence of educational television programs.
- 1970s:** Introduction of computers. They paved the way for computer-assisted instruction (CAI). Programs like PLATO (Programmed Logic for Automatic Teaching Operations) offered interactive learning experiences and personalised instruction.
- 1990s:** The advent of internet revolutionised education. It enabled the creation of online learning platforms, virtual classrooms and collaborative tools.

EdTech (Education Technology)

It includes a wide range of technologies, hardware, software, services and digital resources used to conduct, support or enhance teaching and learning, and facilitate education management and operations.

Digital Learning

It is the teaching and learning process that entails the use of digital technologies, including online or offline environments, using distance, hybrid or in-person modalities.

The Rise of Digital Education

- Rapid advancement of technology has led to the rise of digital education.
- Digital education refers to the use of digital tools, resources, and platforms to facilitate teaching and learning processes.

Benefits of Digital Education

- It enhances accessibility and inclusivity by breaking down geographical barriers and reaching learners who

may have limited access to traditional educational opportunities.

- It promotes personalised learning experiences.
- It fosters interactive and engaging learning environments.

Digital Divide

- Digital divide is a challenge in the implementation of digital education.
- Disparities in access to technology and internet connectivity hinder equal educational opportunities.
- Addressing the digital divide requires concerted efforts to ensure infrastructure development, affordability, and accessibility of digital tools and internet connectivity for all.

Transforming Learning Experiences

- Digital Education is reshaping learning experiences:
 - It promotes active and self-directed learning.
 - It enables personalised assessments and feedback.

Role of Educators in Digital Education

- Educators play a crucial role as facilitators, mentors and guides in digital education.
- They provide guidance, support, and expertise, ensuring that students navigate digital resources effectively, develop critical digital literacy skills, and understand ethical considerations in the digital realm.
- Their role extends beyond content delivery to fostering collaboration, critical thinking, and social-emotional skills in digital learning environments.

Future Directions and Implications

- Advancements in artificial intelligence (AI), virtual reality (VR) and augmented reality (AR) technologies will further revolutionise educational experiences.
- With the evolution of digital education, it is crucial to address ethical considerations, such as data privacy, digital citizenship, and the responsible use of technology.
- Microlearning and mobile learning have become increasingly popular trends in the learning space.
- Microlearning entails breaking down learning material into bite-sized, easily digestible segments, while mobile learning enables learners to access content on the move, using their smartphones or tablets.
- Gamification and game-based learning utilise game design principles to enhance the interactivity and enhancement of the learning process.

Challenge of making Digital Education offline or on low internet speed

- Approaches to overcome challenges in making digital education accessible offline or in low internet speed environments:
 - Offline Content Delivery: Providing downloadable content such as PDFs, e-books, videos that can be accessed without an internet connection.
 - Mobile Apps: Developing mobile applications that can store educational content locally on the device.
 - Learning Management Systems (LMS): Utilising LMS that support offline functionality.
 - USB/CD Distribution: Distributing educational content through USB drives or CDs.
 - Curriculum on storage devices: Storing educational content on portable storage devices like SD cards or external hard drives.
 - Interactive Offline Activities: Designing interactive offline activities, worksheets, or projects that do not require internet connectivity.
- Target audience, infrastructure limitations, and available technology should be considered in designing offline or low-internet education solutions.

Open Standards for Digital Education

- National Repository of Open Educational Resources (NROER)
 - NROER is an initiative by the Ministry of Education, aimed at creating a centralised repository of open educational resources.
- National Digital Library of India (NDLI)
 - NDLI is a digital library that offers free access to a vast collection of academic resources, including textbooks, scholarly articles, thesis and other educational materials.
- Study Webs of Active Learning for Young Aspiring Minds (SWAYAM)
 - SWAYAM is an online platform that hosts massive open online courses (MOOCs) and other digital learning resources.
- Digital Infrastructure for Knowledge Sharing (DIKSHA)
 - It is a groundbreaking digital platform developed by NCERT. It serves as a comprehensive hub of educational resources.

- National Digital Education Architecture (NDEAR)
 - It is envisaged as UPI for education.

National Digital Education Architecture (NDEAR)

- It aims to create a unified digital ecosystem that supports the diverse needs of the education sector by leveraging technology.
- **Key Features of NDEAR**
 - Unified Digital Infrastructure
 - Interoperability and Standards
 - Data-Driven Decision making
 - Personalised Learning
 - Inclusivity and Accessibility
- By creating a unified digital ecosystem, it aims to enhance the quality, accessibility, and equity of education across the country.
- NDEAR provide the following to cater to 5 key personas (Student, Parent, Teacher, Administrator, Community members) and 3 key ecosystems (Programs, Asset, Solution) across 2 core interactions (learning and administration).
 - Specifications and Standards
 - Microservices and APIs
 - Reference Solutions

From Classrooms to Screens

- Education is transitioning from traditional classrooms to digital screens, driven by advancements in technology and changing learning needs:
- **Key aspects of this transition:**
 - Online and Blended Learning
 - Personalised Learning Experiences
 - Collaboration and Global Connections
 - Data-Driven Insights
 - Lifelong Learning and Microlearning

Way Forward

For the transition, it is crucial to fully embrace the opportunities that technology offers while also preserving the human touch of educators. Doing so will foster creativity, critical thinking and support the growth of every learner.

ARTICLES FROM DOWN TO EARTH (AUGUST 2024)

MINIMUM SUPPORT PRICE

Context: There is an ongoing protest over legalising the Minimum Support Price (MSP)

About Minimum Support Price

- The Minimum Support Price (MSP) is a crucial mechanism through which the government supports farmers by purchasing their crops at a pre-determined price.
- Annually, the Government of India announces MSPs for 22 major agricultural commodities, including 14 Kharif crops, 6 Rabi crops, and 2 commercial crops.
- In addition, MSP for Toria and de husked coconut is also fixed based on MSPs of rapeseed & mustard, and copra, respectively.
- Government fixes Minimum Support Prices (MSPs) for 22 mandated agricultural crops based on the recommendations of the Commission for Agricultural Costs & Prices (CACP).
- While recommending MSP, CACP considers various factors viz. cost of production, overall demand-supply situations of various crops in domestic and world markets, domestic and international prices, inter-crop price parity, terms of trade between agriculture and non-agriculture sector, likely effect of price policy on rest of economy and a minimum of 50 per cent as the margin over the cost of production.

MSP is important

- In the recent years, central government has been expanding its procurement, encompassing newer states and crops. Both pulses and oilseeds are also emerging to be focus crops.
- MSP has been able to provide a floor price for the procured crops, at least in states where GOI procures.
- It nudges farmers' crop choices.
- When mandi prices fall below MSP, many policy actions get triggered.

Limitations of MSP

- Despite being in existence for nearly 58 years, the MSP regime appears to have benefited less than 10% Indian farmers.
- The remuneration is not enough to make farming profitable.

Issues with MSP calculations

- MSP is out of sync with market dynamics and there are three primary reasons for it.

- Lack of sufficient data
 - The absence of reliable and timely data complicates MSP estimation.
 - It is difficult to estimate demand and required supply if crop consumption estimates are unknown.
- Landed imports
 - The same metrics cannot be used to estimate MSP for rice (a net exported commodity) or soybeans (where we are a large importer of soybean oil and a residual exporter of soybean meal).

Way Forward

- The way forward involves aligning MSP with current and future market needs, balancing domestic and global markets and addressing the needs of both farmers and consumers.
- CACP would need a robust mechanism for developing an outlook; one can't just look back and predict the future.
- An MSP is technically a future price and, therefore, a credible assessment of the outlook is integral to the whole process of suggesting these prices.
- CACP needs to develop survey assessments to assess future demand in the country and/or globally, among other things.
- MSPs have to be set up to encourage the diversification of crops, especially towards pulses, oilseeds, and millets, which are crucial for the country's nutrition goals.
- Given climate change and varying resource-use efficiency, CACP could consider incentive packages, like a water-saving premium.

Conclusion

Establishing a state-specific decentralised MSP mechanism that guarantees a profit margin of at least 50% over cost, prioritising rainfed crops like millets, pulses, and oilseeds, is imperative. This approach would ensure food, fodder, and nutritional security for the country.

DIFFERENT CONSENSUS ON CLIMATE CHANGE

Context: At least 97 percent of scientists have agreed that humanity contributes to climate change, but the same cannot be said for society at large.

Key Details

While there is broad scientific consensus that human action has contributed decisively to warming the atmosphere, ocean and land, causing widespread change in a very short time, however public opinion is considerably less clear in this regard.

- **Public Perception:** Various studies and surveys show that social consensus on climate change is stronger in Europe than in the United States, where only 12 per cent of citizens are aware of the scientific community's near-total unanimity. This is a result of, among other things, disinformation, media portrayals, and cognitive bias.

Challenges in Global Climate Commitments

- **Lack of Enforcement and Accountability:** Despite increased awareness and commitment to climate change mitigation and adaptation, international agreements, such as the 2015 Paris Agreement, lack binding obligations, effective enforcement, and accountability measures.
- **Uneven Implementation:** Countries and companies have developed detailed carbon neutrality and net-zero strategies, but inconsistent implementation and confusion over objectives hinder progress. Some countries benefit from reduced emissions without bearing their fair share of the costs.
- **Emissions Trends:** Progress since the Paris Agreement shows a decrease in projected emissions increase from 16% to 3% by 2030. However, significant reductions are still needed to meet global temperature targets. For instance, China's energy sector emissions rose by 5.2% in 2023, highlighting the need for a substantial reduction in the near future to meet climate goals.

Complexities and Inconsistencies in Climate Change Efforts

- **Global Demand for Fossil Fuels:** Despite slower growth, global fossil fuel demand continues and is expected to peak by 2030 if electric vehicle adoption rises and China invests more in renewable energy.
- **Investment Trends:** Significant investments are still directed towards oil and gas, averaging \$0.75 trillion annually from 2016 to 2023. In 2023, global clean energy investments reached \$1.8 trillion, primarily in China, the EU, and the US. However, investments in renewables are not uniform, and rebound effects can mitigate reductions in fossil fuel use.
- **Local vs. Global Costs:** The benefits of carbon emission reductions are global and long-term, whereas the costs are often immediate and local. For instance, lithium mining for clean energy technologies impacts fragile ecosystems, and low-income countries like India continue to rely on coal despite the overall benefits of emission reductions.

Solutions Remain Elusive

- **Complex Solutions:** Addressing climate change involves both technological advancements and changes in lifestyle and values. Classical economics assumes individuals always act to maximize satisfaction, but this overlooks the

complexity of human motivations, including dreams and goals. Herbert Simon's concept suggests that decision-making is limited by cognitive capacity, information, and time, leading to simplified and adaptive choices.

- **Liquid Modernity:** Zygmunt Bauman's idea of "liquid modernity" describes a fluid, unstable society prone to rapid change, affecting long-term commitment and behaviour.
- **Individualism and Hedonism:** Gilles Lipovetsky's view highlights a culture focused on immediate gratification, contrasting with ethical commitments and sacrifices needed for climate action. Recognizing the complexity of human decision-making and biases may help in reconciling individual behavior with climate action goals.

How Climate Change is impacting India's Youth

- Youth vulnerability is a complex, intersectional concept that involves various factors, including biophysical, socio-economic, political, and ethical considerations but climate change is the new factor which make it even more complex.
 - For example, the Sundarbans region has seen significant youth displacement due to flooding and cyclones, illustrating the profound impact of climate change on young lives.
- Reports from the Intergovernmental Panel on Climate Change (IPCC) emphasize the increasingly severe impacts of climate change in vulnerable regions, including rising sea levels and more frequent extreme weather events, which can render certain areas uninhabitable. As a result, communities, and particularly young people, are compelled to seek refuge in safer regions.
- In regions heavily reliant on climate-sensitive sectors such as agriculture can lead to reduced job opportunities for youth, jeopardising their livelihoods and the intergenerational transmission of knowledge.
- These challenges become further exacerbated by the psychological and social impacts of mobility, as young people may experience feelings of isolation, anxiety, and emotional strain as they leave their communities, lose cultural ties, and struggle to establish connections in new environments.
- Within this context, gender and structural inequalities are exacerbated by the increasing risks posed by climate change and disasters caused by natural hazards.
 - For example, because of climate change, there is an increase in the incidence of child marriage in Rajasthan.
 - ◆ The aftermath of the 2004 Indian Ocean tsunami serves as a stark reminder of how many underage girls were compelled into marriages with "tsunami widowers" following a devastating environmental catastrophe.

VIOLENCE AGAINST WOMEN IN INDIA

Context: Understanding trends in the extent of violence against women can be helpful in challenging violence against women and gender inequality.

Key Details

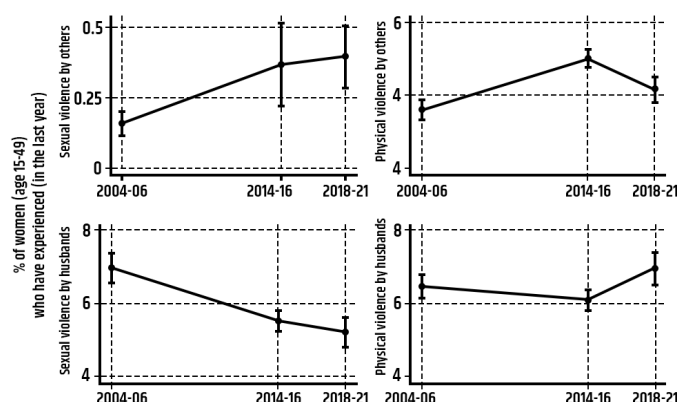
- Sexual and physical violence against women is one of the clearest and most detrimental manifestations of gender inequality. Violence against women remains one of the core concerns of movements against patriarchy in India and globally.
- Despite this recognition, public discussions on violence against women in India are constrained by the lack of reliable information on the magnitude of violence against women, the extent to which cases are reported to the police, or trends in incidence and reporting.
- The article helps to compare the incidence of violence, as measured in the National Family Health Surveys (NFHS) to the reporting of violence, as compiled by the National Crime Records Bureau (NCRB).

Data Used for Analysis

- **National Family Health Survey:** The NFHS are nationally representative and large-scale surveys that include questions on different forms of violence. For example, responses on the experience of physical and sexual violence by women in the previous year were recorded and used.
- **National Crime Records Bureau:** To calculate reporting of violence against women, NCRB's annual publication titled "Crime in India" from various years which categorises crime statistics based on statutes of the Indian Penal Code (IPC) and other acts were used. For example, offences were classified as sexual violence by others under "rape" (Section 376, IPC) and "attempt to rape" (Section 511, IPC). Similarly, those that involve physical violence by husbands cases registered under "cruelty by husband and relatives" (Section 498A, IPC), dowry deaths (Section 304B, IPC), and under the Dowry Prohibition Act, 1961 were used.
- Further to calculate the number of cases reported per capita, **national and statewise population projections** published by the National Commission on Population were used.

Key Findings

- **Incidence of violence against women:** Contrary to expectations, both sexual and physical violence by others were higher in the more recent NFHS than in NFHS-3, which was conducted in 2005–06. Moreover, Physical violence by husbands was also higher in the most recent NFHS than in NFHS-3 and NFHS-4. It was observed that over a period spanning one and a half decades, physical violence against women has increased, as has sexual violence by others whereas sexual violence by husbands has declined, but quite modestly.



Graphs are arranged in ascending order of level of violence against women. The y-axes on the figures are not consistent, to help understand trends. 95% CIs, shown as spikes, account for clustering of observations within primary sampling units.

- **Patterning of violence by women's education:** Patterns for the experience of violence by education are consistent across survey rounds contrary to expectation of disproportionately higher incidence of violence against women with lesser education. No substantial shift in the slope or increased reporting of violence by women with lesser education compared to women with more education was observed.
- **Reporting of violence:** After comparing the NCRB and the NFHS data it was found that there is under-reporting of violence against women in India.
 - Very little of the violence that women experience is reported to the police, and that violence by husbands is even less likely to be reported than violence by others.
 - Moreover, despite rising concern against violence against women, reporting of violence against women has not increased substantially for any form of violence.

- **Regional variation in reporting and incidence:** Violence against women is under-reported in most states in India.
 - Particularly, south Indian states, such as Tamil Nadu, Andhra Pradesh/Telangana, and Karnataka have high levels of physical violence and low reporting.
 - However, in states like Kerala and Himachal Pradesh, the prevalence of violence against women is lower than in other states, and reporting is better.

Conclusion

The findings highlight that the violence by husbands against women is more common than violence by others and is less likely to be reported. There is a urgent need for social and legal changes (including the criminalisation of sexual violence by husbands) to address violence against women in India.

JUDICIAL DISCIPLINE AND JUDICIAL AUTHORITY

Context: Recent instances of lower courts and tribunals outright ignoring the orders of the Supreme Court point to a worrying breakdown of judicial discipline across India.

Key Details

- A magistrate in Surat, Gujarat sent an accused to police custody even after the Supreme Court of India had granted anticipatory bail to the accused.
- Similarly, a bench of the National Company Law Appellate Tribunal (NCLAT) refused to take note of the Supreme Court's order of stay on proceedings and went on to deliver a judgment in a matter where it had been expressly ordered by the Supreme Court to refrain from doing so.
- In April 2023, the Supreme Court had directed the High Court of Manipur to grant a promotion to an employee of the high court in accordance with the rules. However, instead of granting the promotion, the high court constituted a fresh department promotion committee to include eight other candidates, in direct defiance of the Supreme Court's order.
- This phenomenon can be attributed to the Supreme Court's own loss of moral authority and credibility over the last few years.

Matter of Concern

- Above discussed matters are not only instances of the lower courts misapplying or misunderstanding judicial verdicts of the Supreme Court. The Supreme Court order in each case was short and straightforward. The response of the judges was open defiance or just casual disregard. It was as if the Supreme Court's orders were just pieces of paper which need not be acted on or taken into consideration.
- Moreover, the collegium system has frequently been criticised for its lack of accountability and transparency, and the prevalence of nepotism.

- Reversing the trend requires the Supreme Court to assert itself with the political executive on behalf of the judiciary as a whole.
 - **Note:** The process of selection of judges for the high courts and the Supreme Court is still governed by the Memorandum of Procedure drawn up by the union on the basis of the Second and Third Judges' cases.

Constitutional Provision

- The Supreme Court has held that its judicial pronouncements lay down the law. **Article 141 of the Indian Constitution** mandates that law declared by the Supreme Court is binding on all courts, including the Supreme Court itself.
- The Parliament is free to bring a new law on judicial appointments, possibly through a constitutional amendment, but that too would be subject to judicial review.
 - The Constitution of India does not use the phrase "judicial review" anywhere, but it does provide for judicial review implicitly through several article such as Articles 13, 32 and through 136, 142 and 226.

Extend of Judicial Discipline and Authority

- Assisting and aiding the implementation of the orders of the Supreme Court is not dependent on the goodwill of the judges and authorities but a constitutional mandate under Article 144.
- The breakdown of judicial discipline is, therefore, not just a matter of internal administration but a grave constitutional matter and worrisome for the rule of law.
- The very same Kesavananda Bharati verdict in past had made it clear that judicial review is not a means to usurp parliamentary sovereignty, but only part of a "system of checks and balances" to ensure constitutional functionaries do not exceed their limits.

Way Forward

- Upon reviewing the process of judicial nominations in other nations, we find that most of them are made by a committee established by the administrative and legislative branches of government. For example,
 - For instance, the Constitutional Reform Act, 2005, introduced by the U.K., established two Commissions for the purpose of choosing candidates: one for the courts in England and Wales, and the other for the Supreme Court.
- Many countries have switched to an appointments commission system.
 - For example, South Africa has a Judicial Service Commission (JSC) that advises the President to appoint judges.
- The NJAC can be reworked by taking into account the views of the judiciary, the executive, and civil society, and the need to strike a balance between judicial independence and accountability.

QUICK REVISION

IMPORTANT DAYS IN AUGUST

	Date	Day	Significance / Remark / Detail
1.	1 August	World Wide Web Day	"World Web Day" is observed to commemorate the World Wide Web and its impact on the world. - This year's theme emphasizes the transformative role of the web in revolutionising communication, collaboration, and access to knowledge, effectively bringing the world closer together.
2.	1 August - 7 August	World Breastfeeding Week	- World Breastfeeding Week is held in the first week of August every year, supported by WHO, UNICEF and many Ministries of Health and civil society partners. - The theme for 2024 is "Closing the gap: Breastfeeding support for all".
3.	7 August	National Handloom Day	- The Swadeshi Movement which was launched on 7th August, 1905 had encouraged indigenous industries and in particular handloom weavers. - In 2015, the Government of India decided to designate the 7th August every year, as the "National Handloom Day".
4.	8 August	August Kranti Day / Quit India Movement Day	Quit India Movement Day, observed on August 8th annually, commemorates the historic launch of the Quit India Movement on August 8, 1942 from Bombay's Gowalia Tank Maidan under the leadership of Mahatma Gandhi.
5.	9 August	International Day of the World's Indigenous Peoples	- In order to raise awareness of the needs of these population groups, every 9 August commemorates the International Day of the World's Indigenous People. - International Day of the World's Indigenous People 2024 is focusing on 'Protecting the Rights of Indigenous People in Voluntary Isolation and Initial Contact'.
6.	10 August	World Biofuel Day	- Every year on August 10, "World Biofuel Day" is observed to underline the significance of biofuels as a sustainable source of energy. - The Theme for World Biofuel Day 2024 is "Sustainable Biofuels: Fueling a Greener Future".
7.	10 August	World Lion Day	- World Lion Day was initiated by Big Cat Rescue, the world's largest accredited sanctuary dedicated to big cats. - Celebrated on August 10th, it is a day for people to come together from across the globe to pay tribute to the mighty lion.
8.	12 August	International Youth Day	- International Youth Day is commemorated every year on 12 August, bringing youth issues to the attention of the international community and celebrating the potential of youth as partners in today's global society. - The Theme for International Youth Day 2024 is "From Clicks to Progress: Youth Digital Pathways for Sustainable Development".
9.	12 August	World Elephant Day	- On August 12, 2012, the inaugural World Elephant Day was launched to bring attention to the urgent plight of Asian and African elephants. - Every Year, World Elephant Day is observed on August 12 to raise awareness about the challenges in elephant conservation and their protection worldwide.

10.	13 August	World Organ Donation Day	- World Organ Donation Day, observed annually on August 13, holds significant importance globally. - This dedicated day serves as a powerful platform to raise awareness about the critical need for organ donation and to inspire individuals to consider to be an organ donors.
11.	15 August	India's Independence Day	- The Independence Day of India, holds tremendous ground in the list of National days, since it reminds every Indian about the dawn of a new beginning, the beginning of an era of deliverance from the clutches of British colonialism of more than 200 years. - It was on 15th August 1947 that India was declared independent from British colonialism, and the reins of control were handed over to the leaders of the Country.
12.	19 August	World Humanitarian Day	- On 19 August 2003, a bomb attack on the Canal Hotel in Baghdad, Iraq, killed 22 Humanitarian Aid workers. - Five years later, the General Assembly adopted a resolution designating 19 August as World Humanitarian Day.
13.	21 August	International Day of Remembrance of and Tribute to Victims of Terrorism	- The General Assembly, in its resolution 72/165 (2017), proclaimed 21 August as the International Day of Remembrance of and Tribute to the Victims of Terrorism. - The main focus of the International Day is to honour, remember and pay tribute to the victims of terrorism by standing in solidarity with them and promoting and protecting their human rights and fundamental freedoms.
14.	22 August	International Day Commemorating the Victims of Acts of Violence Based on Religion or Belief	The General Assembly, in its resolution A/RES/73/296, designated 22 August as the "International Day Commemorating the Victims of Acts of Violence based on Religion or Belief" recognizing the importance of providing victims of acts of violence based on religion or belief and members of their families with appropriate support and assistance in accordance with applicable law.
15.	23 August	National Space Day	- India became the fourth country to land on the moon and the first to reach its southern polar region on August 23, 2023. To honour this landmark achievement, the government announced August 23 as "National Space Day". - India is celebrating its maiden National Space Day on August 23, 2024 with the theme "Touching Lives while Touching the Moon: India's Space Saga."
16.	23 August	International Day for the Remembrance of the Slave Trade and its Abolition	- On the night of 22 to 23 August 1791, in Saint Domingue, today the Republic of Haiti, saw the beginning of the uprising that would play a crucial role in the abolition of the transatlantic slave trade. - It is against this background that the "International Day for the Remembrance of the Slave Trade" and its Abolition is commemorated on 23 August each year.
17.	29 August	National Sports Day	- The National Sports Day in India is celebrated every year on August 29. - The National Sports Day is celebrated to commemorate the birth anniversary of hockey legend "Major Dhyan Chand". - National Sports Day was included in the list of celebratory days in India for the first time in 2012.
18.	29 August	International Day against Nuclear Tests	- On 2 December 2009, the 64th session of the United Nations General Assembly declared 29 August the "International Day against Nuclear Tests" by unanimously adopting resolution 64/35. 2010 marked the inaugural commemoration of the International Day against Nuclear Tests.
19.	30 August	International Day of the Victims of Enforced Disappearances	- On 21 December 2010, by its resolution 65/209 the UN General Assembly expressed its deep concern about the increase in enforced or involuntary disappearances in various regions of the world. - By the same resolution the Assembly welcomed the adoption of the "International Convention for the Protection of All Persons from Enforced Disappearance", and decided to declare 30 August the International Day of the Victims of Enforced Disappearances, to be observed beginning in 2011.

20.	31 August	International Day for People of African Descent	Every August 31st, the world comes together through the UN International Day for People of African Descent to honor the shared Heritage, Diverse Culture, and profound influence of Africans and the global African diaspora.
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OBITUARIES IN NEWS

	DATE	PERSON	IMPORTANT INFORMATION
1.	3 Aug 2024	Yamini Krisnamurthy	- She was an Indian classical dancer specializing in Bharatnatyam and Kuchipudi. - She received the Padma Shri in 1968, Padma Bhushan in 2001 and Padma Vibhushan in 2016. - She was also conferred the Sangeet Natak Akademi Award in 1977.
2.	4 Aug 2024	Shobhana Ranade	- She was a Veteran Gandhian and Social Worker. - She was honoured with the Padma Bhushan, India's third-highest civilian award, for her Social work in 2001 - She helped set up the Gandhi National Memorial Society at Aga Khan Palace, Pune, and a training institute for women.
3.	4 Aug 2024	Tsung-Dao Lee	He won The Nobel Prize in Physics 1957.
4.	8 Aug 2024	Buddhadeb Bhattacharjee	He was a veteran Communist leader and was Chief Minister of West Bengal from 2000 to 2011.
5.	10 Aug 2024	Natwar Singh	- He was the External Affairs Minister of India from 2004-2009. - He was an Indian Foreign Service Officer of 1953 batch.
6.	15 Aug 2024	Dr. Ram Narain Agarwal	- He was a noted Aerospace Engineer of India. - He has significantly contributed towards the Agni series of surface-to-surface missiles.
7.	18 Aug 2024	Rakesh Pal	At the time of his death he was serving as Director-General of Indian Coast Guard.
8.	19 Aug 2024	Maria Branyas Morera	She was the world's oldest verified living person until her death.

AWARDS AND PRIZES

	Award	Winner	Details
1.	Vigyan Ratna Puraskar	Dr. Govindarajan Padmanabhan	- It is the highest scientific award and is part of "Rashtriya Vigyan Puraskar". - Rashtriya Vigyan Puraskar were awarded for the first time in 2024.
2.	Gallantry Awards	-	4 Kirti Chakras (3 posthumous) 18 Shaurya Chakras (4 posthumous) - One Bar to Sena Medal (Gallantry) 63 Sena Medals (Gallantry) (2 posthumous) 11 Nao Sena Medals (Gallantry) 6 Vayu Sena Medals (Gallantry)
3.	National Film Award Best Actor	Rishab Shetty	For Kantara (Kannada film)
4.	National Film Award Best Actress	Nithya Menen and Manasi Parekh	For Thiruchitrambalam and The Kutch Express, respectively.

5.	National Film Award Best Director	Sooraj Barjatya	For Uunchai
6.	National Film Award Best Feature Film	Aattam: The Play	Malayalam film directed by Anand Ekarshi
7.	India Travel Awards - Best Airport	Rajiv Gandhi International Airport (RGIA) in Hyderabad	Rajiv Gandhi International Airport (RGIA) in Hyderabad won the award for the third consecutive time.
8.	National Geoscience Award for Lifetime Achievement	Professor Dhiraj Mohan Banerjee	National Geoscience Award for Lifetime Achievement is the highest recognition in the field of Geosciences in the country.
9.	Puthiya Thalaimurai Tamilan Awards	-	- Honors outstanding individuals across various fields - Tamil Literature: Achiever Award- Perumal Murugan - Arts: Achiever Award- Film Director K.S. Ravikumar - Sports: Achiever Award- Former Cricketer W. V. Raman - Business: Achiever Award- Founder of Thyrocare Arogyaswamy Velumani - Science and Technology: Achiever Award- P. Veeramuthuvel of ISRO - Social Work: Achiever Award- Retired Librarian Palam Kalyanasundaram - Each category presented two distinct honors - Achiever Award - Promising Talent Award
10.	PATA Gold Award	Kerala Tourism	- Pacific Asia Travel Association (PATA) Gold Award - The award recognizes Kerala's innovative online contest, 'Holiday Heist', in the Digital Marketing Campaign category.
11.	FICCI Young Leaders Youth Icon Award	Neeraj Chopra Ayushmann Khurrana	Federation of Indian Chambers of Commerce and Industry (FICCI)'s Young Leaders Awards bring together a diverse array of talented individuals from various fields.

IMPORTANT SUMMITS IN NEWS

	Summit/Conference	Details
1.	World Heritage Committee Meeting	For the first time, India hosted the 46th session of the World Heritage Committee Meeting, from 21st to 31st July, 2024, organized at Bharat Mandapam in New Delhi.
2.	International Conference of Agricultural Economists	32nd International Conference of Agricultural Economists (ICAE) inaugurated by PM Modi at National Agricultural Science Centre (NASC) Complex, New Delhi on August 3. - Theme - Transformation Towards Sustainable Agri-Food Systems
3.	BIMSTEC Business Summit	1st BIMSTEC Business Summit hosted by Ministry of External Affairs of the Government of India in association with Confederation of Indian Industries (CII) in New Delhi on August 6, 2024.
4.	Voice Of Global South Summit	- India hosted third Voice Of Global South Summit in virtual format on August 17, 2024. - Theme - An Empowered Global South for a Sustainable Future
5.	India-Japan 2+2 Ministerial Dialogue	Defence Minister Rajnath Singh and External Affairs Minister Dr S Jaishankar, Japanese Minister of Defense Kihara Minoru and Minister of Foreign Affairs Ms Yoko Kamikawa took part in the dialogue on August 20, 2024.

6.	India-EU Regional Conference	- European Union (EU) and the external affairs ministry organised regional conference in New Delhi to discuss emerging threats in online radicalisation and to jointly counter the exploitation of online spaces by terrorists. - The Track 1.5 conference, which will be held on August 21-22 in collaboration with organising partner Global Counter-Terrorism Council (GCTC).
7.	India-Singapore Ministerial Roundtable	2nd India-Singapore Ministerial Roundtable (ISMR), aimed at further strengthening trade and economic ties between the two countries was held in Singapore on August 26.
8.	Joint Russian-Indian Commission	Second Meeting of the Joint Russian- Indian Commission on the Cooperation in the Field of Emergency Management was held on 28th August 2024 in Moscow, Russia.
9.	INDUS-X Summit 2024	- US-India Strategic Partnership Forum revealed the third edition of the India-US Defense Acceleration Ecosystem (INDUS-X) Summit. - It is set to take place in collaboration with Stanford University's Gordian Knot Center for National Security Innovation and the Hoover Institution, on September 9-10, 2024.

IMPORTANT TERMS IN NEWS

	Term	Meaning and Details
1.	Axis of resistance	A Coalition of Iranian-backed groups is known as the 'axis of resistance'. Hezbollah, Hamas, the Palestinian Islamic Jihad (PIJ), and the Houthis are some of the major groups in the alliance.
2.	Wing Stall	A wing stall occurs when the airflow over an aircraft's wings becomes disrupted due to an excessive angle of attack, causing a loss of lift and potentially leading the aircraft to descend uncontrollably.
3.	Project PARI (Public Art of India)	- It is an initiative launched by the Ministry of Culture to celebrate and enhance the public art scene in India. - This project is executed by the Lalit Kala Akademi and the National Gallery of Modern Art in New Delhi from July 21-31, 2024. - PARI aims to stimulate dialogue and reflection through public art that blends India's rich cultural heritage with contemporary themes.
4.	Bailey bridge	- A Bailey bridge is a type of modular bridge whose parts are pre-built, so they can be put together quickly as needed. - An English civil engineer named Donald Coleman Bailey is credited with inventing it during World War II.
5.	Yen carry trade	- The yen carry trade involves borrowing in Japan, where interest rates are extremely low, and investing in countries with higher interest rates. - Investors profit from the difference, but unwinding this trade can impact global markets.
6.	Drug Captagon	- It is commonly known as "poor man's cocaine." - It was originally manufactured in Germany in the 1960s and 1970s where it was intended to treat attention deficit disorders.
7.	Rail Force One	Prime Minister Narendra Modi arrived in Ukraine's capital Kyiv from neighbouring Poland by train on August 23. This train is nicknamed as "Rail Force One."
8.	Long-pimple rubber	It is a defensive ploy used in Table tennis. It puts the opposite effect on the spin that the opponent plays.
9.	Fahrenheit 451	It is a book written by American writer Ray Bradbury which was published in 1953 at the height of the "McCarthy era" of political repression and persecution of left-wing individuals and ideas in the United States.
10.	Namdharis	- This sect was founded by Satguru Ram Singh on Baisakhi in 1857. - He challenged the status quo, advocated social reform, and resisted the Raj in various ways.
11.	Jiu-jitsu and aikido	- A family of martial arts originating in Japan, jujutsu translates to gentle art. - Aikido is an offshoot of jujutsu.

AUGUST - DAILY MCQs FROM THE HINDU & INDIAN EXPRESS

DAILY MCQs PRACTICE

August 1

Q1. Consider the following steps with reference to life cycle of retrovirus

1. The reverse-transcribed DNA is integrated into the host's DNA.
2. The enzyme called integrase, acts like glue to bind the two DNA genomes.
3. Once bound, the viral DNA is called a provirus, and is complete with all the ingredients it needs to be functional.
4. The virus practically hijacks human cells and turns them into virus-making factories.

Select the answer from the options below illustrating the correct steps:

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

Q2. What causes Cherenkov radiation to be emitted in a medium?

- (a) Acceleration of charged particles through the medium faster than the speed of light in that medium
- (b) Absorption of gamma rays by atomic nuclei
- (c) Reflection of electromagnetic waves off metallic surfaces
- (d) Ionization of atoms in a magnetic field

Q3. Which of the following developed countries is developing 'World's First' model to combat Peanut Allergy?

- (a) USA (b) UK
(c) Japan (d) Australia

Q4. Consider the following militia groups active in West Asia:

	Group Name	Country
1.	Hezbollah	Yemen
2.	Hamas	Palestine
3.	Houthi	Lebanon

Which of the above pair(s) is/are correctly matched?

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

August 2

Q5. Consider the following statements about Gouda:

1. It is a city situated in the Italian Alps.
2. It is famous for a creamy & yellow cow's milk cheese called Gouda cheese.
3. It was in news because of recent volcanic eruptions in its vicinity.

Which of the statements above is/are correct?

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

Q6. Consider the following pairs:

	Dominant Scheduled Caste Community	State
1.	Matang	Gujarat
2.	Meghwal	Rajasthan
3.	Pan	West Bengal

How many of the above pairs are correctly matched?

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

Q7. What is the primary objective of the Open Market Sale Scheme (Domestic) of the Food Corporation of India (FCI)?

- (a) To promote the export of agricultural products
- (b) To control inflation by releasing food grains into the domestic market
- (c) To provide subsidies for fertilizer purchase
- (d) To support the export of surplus food grains to foreign countries

Q8. Which of the following correctly differentiates La Niña from El Niño?

- (a) La Niña has warmer sea temperature and increases Atlantic hurricanes; El Niño has cooler sea temperature and reduces Atlantic hurricanes.
- (b) La Niña features cooler sea temperature and more Atlantic hurricanes; El Niño has warmer sea temperature and fewer Atlantic hurricanes.

- (c) La Niña causes warmer sea temperature and less rainfall in the eastern Pacific; El Niño results in cooler sea temperature and more rainfall in the eastern Pacific.
- (d) Both La Niña and El Niño cause warmer sea temperature in the central Pacific but differ in their effects on the Indian Ocean monsoon.

August 3

Q9. Consider the following statements

1. The power of declaring castes and tribes as the Scheduled Castes and Scheduled Tribes are vested in the President of India.
2. Indian Parliament can, by public notification of the President, remove any caste or community included in the Scheduled Castes or Tribes from this list.
3. Article 56 deals with the executive power of the President.

How many of the above statements is/are correct?

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

Q10. Which of the following countries is **NOT** a participant in the International North-South Transport Corridor (INSTC)?

- (a) India (b) Russia
- (c) Turkey (d) Iran

Q11. Consider the following statements:

1. The origin points of Kabini and Chaliyar rivers lies in Wayanad.
2. Tholpetty Wildlife Sanctuary is located in Wayanad.
3. The Western Ghats Ecology Expert Panel demarcated Wayanad region as an Ecologically Sensitive Area (ESA).

Which of the statements above is/are correct?

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

Q12. Consider the following countries:

1. Ecuador 2. Brazil
3. Colombia 4. Guyana
5. Suriname

How many of the above countries share their land border with Venezuela?

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

August 5

Q13. According to the Indian Constitution, which of the following best describes the primary objective of the 6th Schedule?

- (a) To define the powers of the Union and State Governments
- (b) To provide special provisions for the protection of Scheduled Castes and Scheduled Tribes
- (c) To ensure the establishment of municipal corporations
- (d) To provide for the administration of tribal areas in certain northeastern states

Q14. Consider the following statements regarding different sports in the Olympic Games:

1. There are 32 different sports at the ongoing 2024 Paris Olympics.
2. Plunge for the distance is introduced as a new sport at this year's Olympics.
3. Tug of war was the part of Olympic Games up until 1972 games in Munich.

How many of the above statements is/are correct?

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

Q15. Consider the following statements regarding CAT Bonds:

1. Catastrophe (CAT) bond is a security that pays the issuer when a predefined disaster risk is realised.
2. High interest rates in India provide a conducive environment to raise funds through CAT bonds.

Which of the statements above is/are correct?

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

Q16. Which of the following statements best describe the Exercise Pitch Black?

- (a) It is an annual bilateral exercise hosted by the US Navy.
- (b) It is a biennial, multi-national exercise hosted by the Royal Australian Air Force
- (c) It is a biennial space defence exercise jointly hosted by NASA and European Space Agency (ESA)
- (d) It is the Indian Air Force's biggest International air combat training activity.

August 6

Q17. Consider the following statements regarding International Conference of Agricultural Economists (ICAE):

1. It is an annual conference organized by International Association of Agricultural Economists.
2. The conference is being hosted by India for the first time this year.
3. The founding president of ICAE was Lord L. K. Elmhirst.

How many of the above statements are correct?

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

Q18. Consider the following statements

Statement-I: The Indian Rupee slumped to an all time low of 84.09 against the US Dollar.

Statement-II: There is a sharp downturn in the equity market and foreign capital inflow in the economy.

Which of the following is correct with respect to the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II does not explain Statement-I
(c) Statement-I is correct, but Statement-II is incorrect
(d) Statement-I is incorrect, but Statement-II is correct

Q19. Consider the following statements with reference to the 'Power sector' in India?

1. The country saw a two-fold decrease in installed renewable energy (RE) capacity.
2. The power distribution companies(discoms) saw a 40% decrease in its aggregate profits.

Which of the above statements is/are incorrect?

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

Q20. Which of the countries lies directly to the north of Israel?

- (a) Iran (b) Egypt
(c) Libya (d) Lebanon

August 7

Q21. Which organization is primarily responsible for measuring the 'Consumer Price Index (CPI) in India'?

- (a) Reserve Bank of India

(b) Central Statistics Office

(c) National Sample Survey Organization

(d) Ministry of Finance

Q22. Consider the following statements with reference to 'International Criminal Court'?

1. It can prosecute individuals accused of genocide, war crimes, crimes against humanity, and the crime of aggression
2. It is not a permanent judicial body

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

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

Q23. Consider the following statements regarding the Disaster Management Act, 2005

1. It was enacted in the aftermath of 2004 tsunami.
2. It established National Disaster Management Authority (NDMA) and National Disaster Response Force (NDRF).
3. It mandates the establishment of State Disaster Response Force (SDRF) by respective state governments.

How many of the above statements are correct?

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

Q24. What is 'carry trade' recently seen in news?

- (a) Borrowing money in developed country and investing it in developing country.
(b) Borrowing money in country with high interest rates and investing it in country with low interest rates.
(c) Borrowing money in stable currency and investing it in volatile currency.
(d) Borrowing money in country with low interest rates and investing it in country with high interest rates.

August 8

Q25. Consider the following statements regarding Pyrocumulonimbus clouds:

1. These are grey or brown clouds that have the potential to spit out thunder and cause fires.
2. They occur due to extremely hot wildfire or volcanic eruptions.
3. The development of these clouds has become less frequent in the last decade.

How many of the above statements are correct?

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

Q26. Consider the following statements regarding Bailey bridge:

1. It is a type of modular bridge with pre-built parts that can be put together quickly as needed.
2. They were invented during World War II.
3. They find applications in military and disaster relief operations.

Which of the statements above is/are correct?

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

Q27. Consider the following statements with reference to 'The operation Dhundi':

1. Operation Dudhi was undertaken in the general area of Chowkibal by central reserve police force (CRPF).
2. Hallmark of Operation Dudhi was that this was mainly conducted under the commanding officer of the battalion with his sub-units playing the major role.

How many of the above statements is/are correct?

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

Q28. Which is the primary function of 'Indexation'?

- (a) To determine the tax rates in a country
- (b) To calculate the inflation rates
- (c) To adjust the prices for seasonal variations
- (d) To adjust the value of an asset for inflation

August 9

Q29. Which of the following states are included in 'The Indian Himalayan Region'?

1. Jammu and Kashmir
2. Kerala
3. Himachal Pradesh
4. Uttarakhand
5. Eastern Ghats

Choose the correct option:

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

Q30. Consider the following statements with reference to RBI's 'Public Repository of Digital Lending Apps'?

1. The repository will be based on data submitted by Regulated Entities (RE)

2. It will help borrowers to verify the claims of digital lending apps' (DLAs) association with Regulated Entities (RE)

How many of the above statements is/are correct?

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

Q31. Consider the following statements regarding Indian Southern Ocean Research Programme:

1. The programme initiated in 2012, to send Scientific Expeditions to the Indian Ocean Sector of the Southern Ocean.
2. National Centre for Polar and Ocean Research (NCPOR), Goa is the nodal agency for the programme.

Which of the statements above is/are correct?

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

Q32. What is Lingshui 36-1 recently seen in news?

- (a) Largest Nuclear power plant developed by South Korea
- (b) China's first re-usable rocket
- (c) Volcano in the Yellow Sea
- (d) Gas field in South China Sea

August 10

Q33. Which of the following primarily reflects the term 'Headline Inflation'?

- (a) Inflation excluding food and energy prices
- (b) Inflation including all goods and services in the economy
- (c) Inflation measured only in urban areas
- (d) Inflation that focuses on only the core sectors of the economy

Q34. Consider the following statements with reference to 'Election Commission of India':

1. It is responsible for delimitation of constituencies.
2. Article 325 of the Indian Constitution deals with Election commission of India.

How many of the above statements is/are correct?

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

Q35. Consider the following countries:

1. Russia 2. China
3. Iran 4. Venezuela

How many of the above countries are members of OPEC+?

- (a) One only (b) Two only
(c) Three only (d) All four

Q36. Consider the following statements regarding High Courts in India:

1. Article 214 of the Constitution provides a High Court for each state.
2. According to the Constitution, the President after consultation with Governor and Chief Justice of India can provide for establishment of additional benches of the High Court.

Which of the statements above is/are correct?

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

August 12

Q37. Consider the following statements with reference to 'Election to the State Assembly'?

1. Article 174 deals with the duration of the state assemblies
2. Minimum age to contest an election in a state assembly is 30 years.
3. State election commission is primarily responsible for conducting elections for state assemblies.

How many of the above are correct?

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

Q38. Consider the following with recent reference by the Supreme court 'Bail Norms' w.r.t the denial of the bail:

1. The suspect is unlikely to appear before the court for trial.
2. The suspect is a flight risk.
3. The possibility of the trial not beginning anytime soon.
4. The suspect is in a position to influence witnesses.

How many of the above statements are correct?

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

Q39. Consider the following statements regarding Nankai Trough:

1. It is an underwater subduction zone where Australian Plate collides with Philippine Plate.
2. It is located in the South China Sea.

Which of the statements above is/are correct?

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

Q40. Consider the following regarding Indian medal winning athletes in Paris Olympics 2024:

	Athlete	Medal Winning Event
1.	Swapnil Kusale	Shooting - 25m Rifle Men
2.	Manu Bhaker	Shooting - 10m Air Pistol Women
3.	Aman	Wrestling – Men's freestyle 60kg
4.	Neeraj Chopra	Men's Javelin Throw

How many of the pairs above are correctly matched?

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

August 13

Q41. Consider the following statements regarding Tungabhadra River:

1. It is formed by confluence of two streams, Tunga and Bhadra that rise in the Western ghats.
2. It forms the boundary between the states of Karnataka and Maharashtra.

Which of the statements above is/are correct?

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

Q42. What is Gobekli Tepe recently seen in news?

- (a) A near Earth asteroid
(b) Ancient site in south of France
(c) Archeological site in Turkey
(d) Crater near lunar south pole

Q43. Which of the following best reflects the meaning of the term 'Microcephaly'?

- (a) A condition where the baby is born with a smaller than average head size
(b) A condition where the baby's head grows too rapidly
(c) A condition where the baby has excessive fluid in the brain
(d) A condition where the baby is born with a larger than average head size

Q44. Which of the following are included in the basket of goods and services used to calculate the Consumer Price Index (CPI)?

1. Defence expenditure
2. Housing

3. Food and beverage
4. Transportation
5. Domestic Electricity

Choose the correct option:

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

August 14

Q45. Consider the following statements with reference to the Border Security Force (BSF):

1. BSF is not a part of central armed police force (CAPF).
2. It primarily guards the borders of India with Pakistan and Bangladesh.
3. Ministry of Defence is responsible for the administration of BSF.

How many of the above is /are correct?

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

Q46. Which of the following is a condition of furlough?

- (a) The prisoner must attend daily parole meetings
- (b) The prisoner must return to prison by a specified date and time
- (c) The prisoner is allowed to leave the country
- (d) The prisoner's sentence is automatically reduced

Q47. Consider the following statements regarding Denial-of-Service (DoS) attacks:

1. It is a type of computer malware that disrupts the availability of services by flooding the system with traffic.
2. In a distributed denial-of-service (DDoS) attack, multiple sources work against one target making the culprit easy to locate.

Which of the statements above is /are correct?

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

Q48. Consider the following statements regarding Joint Parliamentary Committees (JPCs):

1. A Joint Parliamentary Committee (JPC) is an ad hoc body comprising members of both Houses of Parliament.
2. The proportion of representation in a JPC is 2:1 for Treasury and Opposition.
3. A motion to set up a JPC can only be introduced in Lok Sabha.

How many of the above statements are correct?

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

August 15

Q49. Which of following countries are a part of 'Horn of Africa'?

1. Ethiopia 2. Somalia
3. Sudan 4. Eritrea

Select the correct option from above:

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

Q50. Consider the following statements regarding nuclear-armed submarines in India:

1. INS Arighat is indigenously built diesel-electric powered, nuclear-armed submarine developed under Advanced Technology Vessel programme.
2. INS Arihant was commissioned into the Strategic Forces Command (SFC) in 2018 and is operated by Indian Navy.

Which of the statements above is /are correct?

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

Q51. Consider the following:

1. Food prices
2. Medical services
3. Energy Prices
4. Education and communication
5. Housing costs

Which of the above are typically considered when calculating Core Inflation?

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

Q52. Bacillus, Micrococcus and Staphylococcus are the types of...

- (a) Fungi (b) DNA Viruses
- (c) RNA Viruses (d) Bacteria

August 17

Q53. Consider the following statements regarding ISRO's Small Satellite Launch Vehicle (SSLV):

1. SSLV is a two-staged solid propellant launch vehicle.
2. ISRO has successfully launched the third developmental flight of the SSLV.
3. The SSLV can launch satellites weighing up to 1,200 kg and accommodate multiple satellites.

How many of the above statements are correct?

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

Q54. Consider the following statements regarding Krishi Decision Support System (K-DSS) portal:

1. It is a geospatial platform that will function as a repository of standardized data.
2. It is a part of the Digital Public Infrastructure for Agriculture.

Which of the statements above is/are correct?

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

Q55. Which of following is the purpose of 'EOS-08 Earth Observation Satellite'?

1. Surface-to-Air Defence
2. Ballistic Missile Delivery
3. Climate and Weather Monitoring
4. Anti-Submarine Warfare

Select the correct option from above:

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

Q56. Consider the following pairs:

	Country	Recently seen in news
1.	Croatia	Two-month compulsory military service
2.	Sudan	Referendum held
3.	Vietnam	Youngest leader in country's history elected

Which of the above pairs is/are correctly matched?

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

August 19

Q57. Which of the following bodies recently released the report 'Small Community, Big Contributions, Boundless Horizons: The Indian Diaspora in the United States'?

- (a) Ministry of External Affairs, Government of India
- (b) U.S. Department of State
- (c) Indiaspora
- (d) United Nations (UN) Population Division

Q58. Consider the following statements:

1. India's energy demand has been rising briskly, leading to higher oil imports and increasing dependence on imported crude.
2. Heavy dependence on imported crude oil makes Indian economy vulnerable to global oil price volatility, and have a bearing on the country's trade deficit, foreign exchange reserves, rupee's exchange rate, and inflation.

Which of the statements above is/are correct?

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

Q59. Which one of the following are *not* true about Baya Weavers?

- (a) They are solitary in nature and prefer isolated nest
- (b) Their nests are intricately woven and hang from tree branches
- (c) Only males contribute equally to nest-building
- (d) They are commonly found in open grasslands

Q60. Consider the following statements with reference to 'The Agnipath Scheme':

1. It is a short term military service.
2. A pension for life is to be provided to Agniveers after a 4-year tenure.
3. 25% of the Agniveers are expected to be retained in the armed forces after their initial tenure.

Select the correct option from above:

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

August 20

Q61. Consider the following statements regarding BPalm:

1. BPalm is a novel treatment regimen for drug-resistant tuberculosis.
2. It is a three-month intra-venous regimen for treating multi-drug-resistant tuberculosis.
3. It is in the final phases of trial under WHO supervision.

How many of the above statements are correct?

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

Answer: a (1 only)

Q62. Consider the following statements regarding dual-use goods:

1. Dual-use items are goods, software and technology that can be used for both civilian and military applications.
2. These include electronic components, machine tools, drones and software for drones.
3. The Australia Group is a multilateral export control regime related to the export of dual-use goods.

How many of the above statements are correct?

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

Q63. What was the primary focus of the recently tabled 'K. Hema Committee report'?

- (a) Investigating financial irregularities in the Malayalam film industry
- (b) Promoting regional cinema in Kerala

- (c) Addressing issues faced by women in the Malayalam film industry
- (d) Evaluating the quality of films produced in the Malayalam industry

Q64. Consider the following statements with reference to 'The Thomas Picketty measure of Income Inequality':

1. It is a measure of income inequality defined as the ratio of the share of top 1 % to that of the bottom 50% of the population in total income.
2. Rapid technological advancements are the one of the main drivers of rising income inequality in the 21st century.
3. Picketty's analysis primarily relies on National Income Tax records to study income and wealth inequality.

How many of the above is / are correct?

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

Answer: b (1 and 3 only)

August 21

Q65. Consider the following states in India:

1. Assam 2. Bihar
3. Sikkim 4. West Bengal

The Teesta River passes through which of the above states?

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

Q66. What is epinephrine sometimes seen in news?

- (a) A protein responsible for muscle contraction.
- (b) A polymer used in the production of plastics.
- (c) A hormone released by the adrenal glands during stress.
- (d) A type of fuel used in rocket propulsion systems.

Q67. Consider the following statements with reference to 'Union Public Service Commission'

1. Article 324 deals with Appointment of members of the commission.
2. Prime Minister of India appoints the chairman and the members of the commission.
3. Part IX of the Indian Constitution deals functioning of the Commission.

How many of the above is / are correct?

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

Q68. What is the primary purpose of the P5+1 group in international diplomacy?

- (a) To negotiate trade agreements between member countries

- (b) To oversee the global financial system and economic policies
- (c) To address issues related to nuclear non-proliferation and the Iranian nuclear program
- (d) To coordinate military strategies and defence policies among member states

August 22

Q69. Which of the following statements best describe 'Predatory Pricing'?

- (a) Offering discounts to loyal customers to maintain market share.
- (b) Setting prices based on the cost of production plus very high profit margin.
- (c) Setting prices above market value to maximize profits in the short term.
- (d) Setting prices below cost with the intention of driving competitors out of the market and later raising prices.

Q70. Consider the following statements regarding Panda Diplomacy:

1. Panda diplomacy is a diplomatic tool that involves the practice of sending giant pandas to other countries.
2. China and other East Asian countries send giant pandas as goodwill ambassadors to strengthen relations with other countries.

Which of the statements above is / are correct?

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

Q71. Consider the following statements with reference to 'The India – KLEMS database:'

1. KLEMS stand for Knowledge, Labour, Energy, Material, Services
2. The database is primarily designed to measure Total factor Productivity (TFP).
3. Annual Survey of Unincorporated Sector Enterprises (ASUSE) is used by SBI to validate the India-KLEMS employment data.

Select the correct option from above?

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

Q72. Which article of the Universal Declaration of Human Rights (UDHR) focuses on the right to life, liberty, and security of person?

- (a) Article 3 (b) Article 1
- (c) Article 10 (d) Article 5

August 23

Q73. What is the primary purpose of Alpha Particle X-ray Spectrometer (APXS) used in planetary exploration missions?

- To measure the temperature of planetary surfaces
- To capture high-resolution images of planetary landscapes
- To analyse the chemical composition of rocks and soil
- To detect magnetic fields on planets

Q74. Consider the following countries:

- Algeria
- Libya
- Israel
- Sudan

How many of the above countries share land border with Egypt?

- Only one
- Only two
- Only three
- All four

Q75. Consider the following statements with reference to 'The Gaganyaan TV-D1':

- It is a modified L-40 Vikas engine that was used to perform the first abort mission.
- The mission demonstrated the ability of the Crew Escape System (CES) to separate from the test vehicle.

Select the correct option from above?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Q76. What does a 'Purchasing Manufacturing Index (PMI)' value above 50 generally indicate?

- Economic contraction in the manufacturing sector
- Economic expansion in the manufacturing sector
- Decline in consumer spending
- No change in the manufacturing

August 24

Q77. Consider the following statements regarding Vijayanagara Empire:

- It was established in 1336 by Harihara-I and Bukka Raya-I of Tuluva dynasty.
- The empire fell after successive defeats in battles with the Bijapur Sultanate.

Which of the statements above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Q78. Which of the following statement regarding Comptroller and Auditor General (CAG) of India is incorrect:

- Reports of the CAG are subject to scrutiny by Parliament and the Government can always offer its views on the reports.

(b) Reports of the CAG are required to be submitted to the President, who shall cause them to be laid before each House of Parliament.

(c) Reports of the CAG for states are submitted to the Governor, who shall cause them to be laid before the legislature of the state.

(d) When reports are received in Parliament, the reports are scrutinised by the Estimates Committee of the Parliament.

Q79. Consider the following statements with reference to 'The SWAMITVA Scheme':

- Ministry of Panchayati Raj is responsible for implementing the SWAMITVA scheme
- The Ground-penetrating radar technology is used under the SWAMITVA scheme.
- The primary objective of the SWAMITVA scheme is to digitally map rural properties.
- Its implementation is managed under States and Centre has no role under the scheme.

How many of the above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 3 and 4 only

Q80. The G20 was established in response to which global event?

- World War II
- The 2008 Global Financial Crisis
- The Great Depression
- The 1997 Asian Financial Crisis

August 26

Q81. Consider the following statements with reference to 'The Justice Verma Committee':

- Criminalization of marital rape
- Strengthening laws against stalking and voyeurism
- Death penalty of rape
- Creation of fast-track courts for sexual assault cases

How many of the above is/are recommended by the committee?

- Only two
- Only three
- All four
- None

Q82. Consider the following statements with reference to 'The UPI-PayNow':

- The UPI-PayNow linkage enables real-time, cross-border fund transfers between India and Singapore.
- It allows users to send money using mobile numbers or virtual payment addresses.

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

Q83. Consider the following statements regarding Feroz Shah Kotla:

1. It is a 14th century monument built by Feroz Shah Tughlaq, ruler of the Tughlaq dynasty.
2. It introduced the concept of Diwan-e-Aam and Diwan-e-Khas for the first time in medieval India.

Which of the statements above is/are correct?

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

Q84. Consider the following statements regarding Atacama Desert:

1. It is located in the Sahel region of Africa.
2. It is the driest non-polar desert in the world.
3. The salt flat at Atacama is known for Lithium extraction.

How many of the above statements are correct?

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

August 27

Q85. Consider the following statements regarding Hollongapar Gibbon Wildlife Sanctuary:

1. The sanctuary is located in Arunachal Pradesh.
2. It is home to endangered Hoolock Gibbon and wild elephants.
3. It is the only place in India to have Hoolock Gibbon.

How many of the above statements are correct?

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

Q86. Consider the following agreements between India and USA:

1. Logistics Exchange Memorandum of Agreement (LEMOA)
2. Communications, Compatibility and Security Agreement (COMCASA)
3. Security of Supply Arrangement (SOSA)
4. Industrial Security Agreement (ISA)

Which of the agreements above is/are signed in 2024?

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

Q87. Consider the following statements with reference to 'The Periodic Labour Force Survey':

1. It assesses the level of inflation in the economy.
2. It covers both the urban and rural population.

3. The survey is conducted quarterly.
4. National Sample Survey Office is responsible for conducting the Periodic Labour Force Survey in India.

How many of the above is/are correct?

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

Q88. According to the What is the primary function of the diaphragm in a stethoscope?

- (a) To amplify sounds
(b) To transmit low-frequency sounds
(c) To create pressure waves in the air
(d) To acquire an electrocardiogram of the heart

August 28

Q89. Consider the following pairs:

	National Park	State to which they belong	Waterbodies present
1.	Kuno National Park	Madhya Pradesh	Kabini river
2.	Ranthambore National Park	Rajasthan	Chambal river
3.	Kanha National Park	Madhya Pradesh	Banjar river

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

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

Q90. The Modified Vaccinia Ankara-Bavarian Nordic (MVA-BN), also known as 'Jynneos' recently seen in news is...

- (a) Inactivated vaccine
(b) Live attenuated vaccine
(c) Subunit vaccine
(d) mRNA vaccine

Q91. Consider the following statements regarding fixed-dose combination (FDC) drugs:

1. Fixed dose combinations are medicines that have two or more active ingredients in a single pill, capsule or shot.
2. The combination makes them highly effective as the ingredients work together to provide relief to the patient.

Which of the statements above is/are correct?

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

Q92. Consider the following statements regarding Goods and Service Tax (GST):

1. At present, GST has four tax slabs.

2. Instead of GST, a compensation cess is levied on coal and petroleum products.
3. GST revenue collection has been rising consistently month-on-month in the past one year.

How many of the above statements are correct?

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

August 29

Q93. Consider the following statements regarding Paralympic Games:

1. The Paralympic Games are held every four years, following the Olympic Games, and feature athletes with disabilities.
2. India has never participated in the Winter Paralympic Games.
3. India's medal count and tally is higher in Paralympic games as compared to Olympic Games.

How many of the above statements are correct?

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

Q94. Consider the following countries:

1. Mauritius 2. Singapore
3. UAE 4. France

How many of the above countries allow payments from both UPI QR code and RuPay cards?

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

Q95. Consider the following statements with reference to 'The MCD Elections of Delhi':

1. The MCD elections are held every five years to elect members of the municipal corporation.
2. The MCD elections are conducted by the Election Commission of India.
3. The Mayor of Delhi is directly elected by the citizens through MCD elections.

How many of the above is/are correct?

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

Q96. Consider the following strategies recommended by the World Health Organization (WHO) to combat Tuberculosis?

1. Early diagnosis and treatment
2. Improving TB diagnostics and treatment regimens
3. Increasing access to vaccination for all age groups
4. Strengthening TB surveillance systems

How many of the above is/are correct?

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

August 30

Q97. Consider the following statements regarding International Convention for the Protection of All Persons from Enforced Disappearance:

1. Article 1 declares that no one shall be subjected to enforced disappearance.
2. War and public emergency are the two exceptions under Article 1 of the convention.
3. India has ratified to the convention in 2007.

How many of the above statements are correct?

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

Q98. What is Graded Response Action Plan (GRAP) frequently seen in news?

- (a) A nationwide scheme to promote renewable energy sources and reduce carbon emissions.
- (b) A set of guidelines to improve the quality of drinking water in rural areas.
- (c) A comprehensive framework designed to combat air pollution in Delhi-NCR by implementing specific actions based on the severity of air quality.
- (d) A government initiative to increase forest cover around metro cities by planting trees.

Q99. Consider the following verticals as envisaged by the BioE3 initiative:

1. Bio-based chemicals and enzymes
2. Space exploration technologies
3. Precision biotherapeutics
4. Climate-resilient agriculture
5. Marine and space research

How many of the above is/are correct?

- (a) Only three (b) Only four
(c) All five (d) None

Q100. Consider the following statements with reference to 'The State Elections Commission (SEC)':

1. It conducts elections to state legislative assembly.
2. Articles 324 of the Indian Constitution established the State Election Commissions.
3. Kishan Singh Tomar vs Municipal Corporation of Ahmedabad emphasized the need to empower State Election Commissions to be on par with the Election Commission of India.

How many of the above is/are correct?

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

August 31

Q101. Consider the following statements regarding Copyright Act 1957:

1. It provides the author with legal rights to reproduce, adapt or translate his/her work.
2. Ownership of the copyright lapses upon the death of the author.

Which of the statements above is/are correct?

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

Q102. Consider the following statements regarding NASA's Endurance Mission:

1. It was launched in 2022, with aim to measure Earth's global electric potential.
2. Observations of the mission are used to measure planet-wide electric field.

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 Key

Q1.	d	Q27.	b	Q53.	a	Q79.	c
Q2.	a	Q28.	d	Q54.	c	Q80.	d
Q3.	d	Q29.	b	Q55.	a	Q81.	b
Q4.	b	Q30.	c	Q56.	a	Q82.	c
Q5.	b	Q31.	b	Q57.	c	Q83.	c
Q6.	a	Q32.	d	Q58.	c	Q84.	b
Q7.	b	Q33.	b	Q59.	a	Q85.	a
Q8.	b	Q34.	d	Q60.	c	Q86.	c
Q9.	b	Q35.	c	Q61.	a	Q87.	d
Q10.	c	Q36.	a	Q62.	b	Q88.	c
Q11.	d	Q37.	d	Q63.	c	Q89.	b
Q12.	b	Q38.	c	Q64.	b	Q90.	b
Q13.	d	Q39.	d	Q65.	c	Q91.	a
Q14.	a	Q40.	b	Q66.	c	Q92.	d
Q15.	a	Q41.	a	Q67.	d	Q93.	a
Q16.	b	Q42.	c	Q68.	c	Q94.	d
Q17.	a	Q43.	a	Q69.	d	Q95.	a
Q18.	c	Q44.	c	Q70.	a	Q96.	d
Q19.	d	Q45.	a	Q71.	b	Q97.	a
Q20.	d	Q46.	b	Q72.	a	Q98.	c
Q21.	b	Q47.	a	Q73.	c	Q99.	b
Q22.	a	Q48.	a	Q74.	c	Q100.	a
Q23.	b	Q49.	c	Q75.	c	Q101.	a
Q24.	d	Q50.	b	Q76.	b	Q102.	c
Q25.	b	Q51.	b	Q77.	b	Q103.	d
Q26.	d	Q52.	d	Q78.	d	Q104.	a

Q103. Consider the following statements with reference to 'The National Company Law Tribunal (NCLT)':

1. It was established under the Insolvency and Bankruptcy Code, 2016.
2. Its primary aim is to issue licenses for new companies.
3. Appeals against the orders of the NCLT can be made to High Court of the respective state.

How many of the above is/are correct?

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

Q104. Consider the following with reference to the conditions that cause 'Cyclone'?

1. Coriolis Force
2. High Atmospheric Pressure
3. Low Humidity
4. Low Vertical Wind Shear

How many of the above is/are correct?

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

For Detailed Explanation

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DAILY ANSWER WRITING PRACTICE

Q1. Critically examine the environmental concerns associated with the adoption of Artificial Intelligence (AI) in present and in future.

[GS 3, 15 marks] [250 words]

Q2. What is Multiple Independently Targetable Re-entry Vehicle (MIRV) technology? Discuss its key features and significance in Indian missile programme.

[GS 3, 15 marks] [250 words]

Q3. Highlight the significance of agriculture research and development in enhancing agriculture productivity. What are the implications of reduced investment in agriculture research and development (R&D) on

India's food security and economic growth? [GS 3, 15 marks] [250 words]

Q4. What is CAR-T cell therapy? Describe the procedure and advantages of the CAR-T cell therapy in cancer treatment. [GS 3, 15 marks] [250 words]

Q5. What is a landslide? Discuss the susceptibility of India to landslides and the factors responsible for causing landslides. [GS 1, 15 marks] [250 words]

Q6. Examine the risk of lightning in eastern and central India. Discuss the significance of planting palm trees to combat lightning. [GS 1 & 3, 10 marks] [150 words]

Q7. In light of the recent political developments in Bangladesh, discuss the significance of India-Bangladesh relationship in the context of regional cooperation and development. [GS 2, 15 marks] [250 words]

Q8. Climate change induced rising sea levels are pushing countries to relocate their cities and capitals. Comment. [GS 1, 10 marks] [150 words]

Q9. With government planning to roll out India AI Mission, how can the goals of AI be realised without a digital divide. Discuss. [GS 3, 15 marks] [250 words]

Q10. What are biofuels? Discuss the significance of adopting biofuels in present time and the challenges associated with biofuels. [GS 3, 15 marks] [250 words]

Q11. Discuss the recent judgment of the Supreme Court on the classification of Scheduled Castes and Scheduled Tribes, highlighting the key questions or issues before the bench. [GS 2, 15 marks] [250 words]

Q12. What is Clean Plant Program? Examine its objectives and components. What are the potential benefits of the program. [GS3, 15 marks] [250 words]

Q13. Discuss the events of 1940s leading up to India's independence and partition in 1947. [GS 1, 15 marks] [250 words]

Q14. The Indian subcontinent was subject to various foreign invasions. Discuss how did these invasions changed the Indian culture in due course of time. [GS 1, 15 marks] [250 words]

Q15. What is the difference between structural and frictional unemployment? Discuss the challenges of structural unemployment in India and the strategies to address structural unemployment. [GS 3, 15 marks] [250 words]

Q16. What are polymetallic nodules? Critically analyse the economic viability and potential environmental implications of deep-sea mining. [GS 1 & 3, 15 marks] [250 words]

Q17. Discuss the key schemes and initiatives implemented by the Government of India to achieve its renewable energy targets. Highlight the progress made by India in adoption renewable energy. [GS 3, 15 marks] [250 words]

Q18. Discuss the various methods of sustainable agriculture. What are the challenges associated with sustainable agriculture? [GS3, 15 marks] [250 words]

Q19. What is denial-of-service (DoS) attack? How is it different from a distributed denial of service (DDoS) attack? Discuss the ways in which DoS attacks are carried and ways to deal with such attacks. [GS 3, 15 marks] [250 words]

Q20. What are pyrocumulonimbus clouds? Discuss the formation and occurrence of pyrocumulonimbus clouds. [GS 1, 10 marks] [150 words]

Q21. Discuss the constitutional provisions and composition of the Election Commission of India. What are its jurisdictions and functions? [GS 2, 15 marks] [250 words]

Q22. What is mpox disease? What are the different clades (types) of mpox pathogen? Discuss the transmission and history of mpox outbreaks. [GS 3, 15 marks] [250 words]

Q23. Discuss the arguments against excessive regulatory intervention by RBI to manage Rupee volatility. What are the different regulatory measures and the problems associated with such measures? [GS3, 15 marks] [250 words]

Q24. What is Financial Inclusion index and its broad parameters? Discuss the benefits and significance of the Pradhan Mantri Jan Dhan Yojana (PMJDY). [GS 3, 15 marks] [250 words]

Q25. What is the different colour-coded warnings by India Meteorological Department (IMD)? Discuss the need for upgrade in India Meteorological Department (IMD). [GS 1, 15 marks] [250 words]

Q26. What is the policy of lateral entry? Examine the need and criticism of lateral entry in bureaucracy. [GS 2, 15 marks] [250 words]

For Detailed Explanation

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