

CURRENT AFFAIRS

For Integrated Preparation of CSE Prelims + Mains + Interview



INCLUDES

Practice Questions (Prelims* & Mains) After each Topic

YOJANA
(June 2024)

THEME
Role of Forts in Indian History

**MCQs on Prelims 2023 Pattern*

- 18th Lok Sabha
- Public Examinations (Prevention of Unfair Means) Act – 2024
- IBC – Insolvency and Bankruptcy Code
- Internationalisation of Indian Rupee
- QUAD (Quadrilateral Security Dialogue)
- Annual Ambubachi Mela – Kamakhya Temple
- High Seas Biodiversity Treaty
- UNESCO 'City of Literature'

- BRICS+
- Nagastra – 1
- Quantum Science and Supercomputers
- Nanotechnology
- Mahatma Gandhi and Satyagraha
- Poori Padhai Desh Ki Bhalai Campaign
- Global Debt Report – 2024
- Human Trafficking in India

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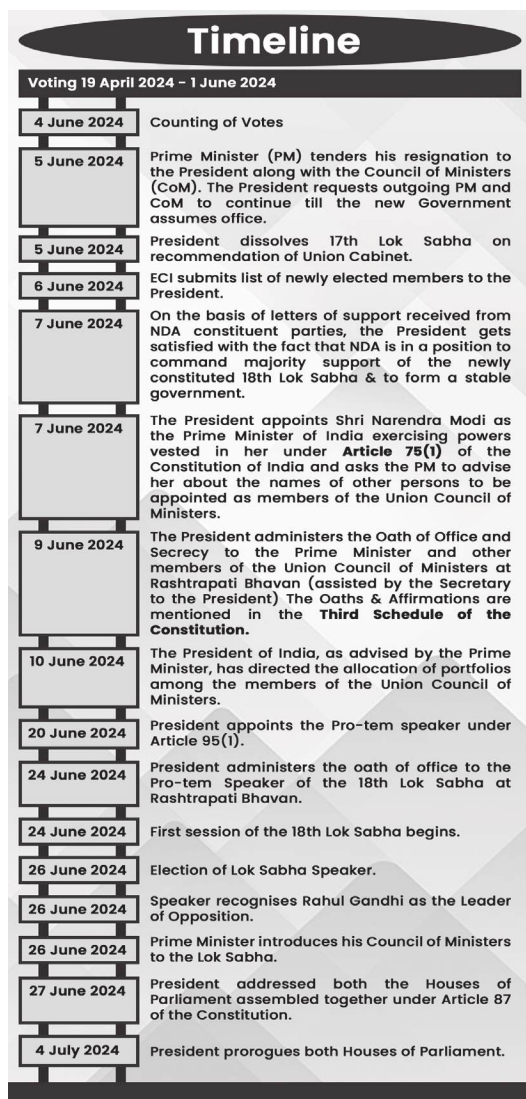
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18TH LOK SABHA

Why in News: The 18th Lok Sabha was constituted on the basis of **General Election 2024** conducted by the Election Commission of India (ECI).

Lok Sabha

As per the provision of **Article 79** of the Indian Constitution, the House of the People, the Lok Sabha is the lower House of the parliament. Lok Sabha is composed of **representatives of the people chosen by direct election on the basis of the adult suffrage**. The maximum strength of the House envisaged by the Constitution is 550.



Pro-tem Speaker of Lok Sabha

- Pro-tem (Latin phrase) 'means for the time being' or 'temporary'. So, a pro-tem speaker can be described as a temporary speaker who presides over the first meeting of Lok Sabha until the house elects the Speaker.
- The Constitution of India does not mention the post of pro-tem speaker.
- The official '**Handbook on the Working of Ministry of Parliamentary Affairs**' speaks about the 'Appointment and Swearing in of Speaker pro-tem'.
- Appointed by the President of India. Oath is administered by the President.
- Generally, the senior most member of the house is appointed as Speaker pro-tem.

Role

- Until a new speaker is elected, the pro-tem Speaker is chosen to administer some important duties.
- Speaker pro-tem administers the oath/affirmation to the newly elected members of the house.
- Pro-tem speaker enables the house to elect a new speaker.
- **Bhartruhari Mahtab** was the Pro-tem Speaker of **18th Lok Sabha**.
- Ganesh Vasudeo Mavalankar was the first pro-tem speaker.

Speaker of the Lok Sabha (Article 93-97)

- The Speaker is the constitutional & ceremonial head of the Lok Sabha and presides over the sittings of Lok Sabha.
- **Qualification**
 - Speaker has to be a member of the house (Lok Sabha)
 - No other specific requirements
- **Election**
 - The President of India decides the date of election for the post of Speaker.
 - Elected by a (simple) majority of members present & voting.
 - Sitting members (after taking oath) are eligible for voting in the election of the Speaker.
- **Removal (Article 94)**
 - The Speaker vacates the office if he/she ceases to be a member of the Lok Sabha.
 - Resigns by writing to the Deputy Speaker.
 - Removed from office by a resolution of the Lok Sabha passed by a majority of all the then members of the House (Effective majority).

• **Role of the Speaker**

➤ **Primary Role**

- ◆ Maintaining order in the House for conduct of business and regulating its proceedings.

➤ **Legislative Role**

- ◆ Putting bills to vote and declaring the results of the vote.
- ◆ Exercising the casting vote in case of a tie.
- ◆ Certification of bills (e.g. Money Bill)
- ◆ Constituting the committees (e.g. Rules Committee, Business Advisory Committee)

➤ **Executive Role**

- ◆ Administrative control over the Lok Sabha Secretariat.

➤ **Quasi-Judicial Role**

- ◆ Disqualification of members on the ground of defection.
- ◆ Adjudicating on matters related to breach of privilege of the house or members.
- ◆ Interpreting parliamentary rules.

- On dissolution of Lok Sabha the Speaker shall not vacate his/her office until immediately before the first meeting of the Lok Sabha after the dissolution.

- Order of precedence - 6th

- Speaker of **18th Lok Sabha - Om Birla** (elected by voice vote)

- Ganesh Vasudeo Mavalankar was the first Speaker of the Lok Sabha.

- Longest serving Lok Sabha Speaker - Balram Jakhar

- Until now except in 1952, 1967 and 1976, the Speakers of Lok Sabha have been elected unopposed.

Leader of Opposition (LoP)

- Neither mention nor defined in the Constitution of India

- Determination and Recognition

- **Direction 121 of the Speaker (1950s):** In order to get recognition as a party in the House, the political party should have a minimum of 10% members in that House. It does not deal with the recognition of the LoP.

- **Salary and Allowances of the Leaders of Opposition in Parliament Act, 1977:** Defined Leader of Opposition for the first time. According to the Act there are two conditions that need to be fulfilled:

- ◆ The party should be numerically the biggest one in opposition to the government.
- ◆ Party should be recognised by the Speaker/Chairman as a party.

- Thus, only a party which has 10% of the strength of the House can put forth its claim to the post of LoP.

- **Position in Lok Sabha**

- Leader of Opposition sits in the front row to the left of the Chair

- Entitled to a seat in the front row during the Address by the President to both Houses of Parliament.

- **Order of precedence** - 7th, along with Cabinet Ministers of the Union.

- **Responsibility**

- LoP serves as the voice of the opposition in the House.

- Leader of Opposition in Lok Sabha is considered as a shadow Prime Minister with a shadow Cabinet, ready to take over the administration if the Government resigns or is defeated on the floor of the House

- Opposition's representative in the high-powered committees headed by the Prime Minister for appointment to key posts such as:

- ◆ Lokpal
- ◆ Director of CBI
- ◆ Central Vigilance Commissioner
- ◆ Chief Information Commissioner
- ◆ Chairperson and Members of the National Human Rights Commission

- LoP is also a member of important committees such as Estimates Committee, Public Accounts Committee, Committee on Public Undertakings and other Joint Parliamentary Committees.

- Leader of Opposition in **18th Lok Sabha - Rahul Gandhi**

- Ram Subhag Singh was the first LoP in Lok Sabha.

Special address by the President of India

- **Article 87(1):** At the commencement of the first session after each general election to the House of the People and at the commencement of the first session of each year the President shall address both Houses of Parliament assembled together and inform Parliament of the causes of its summons.

- **Article 87(2):** Provision shall be made by the rules regulating the procedure of either House for the allotment of time for discussion of the matters referred to in the Presidential address.

- In the case of the first session after each general election to Lok Sabha, the President addresses both Houses of Parliament assembled together after the members have made and subscribed the oath or affirmation and the Speaker has been elected.

- The President's Address is the statement of policy of the Government and, as such, is drafted by the Government which is responsible for its contents.

- The assembly of members of the two Houses to hear the President's Address is not treated as a sitting of either House.

- The copy of address in both Hindi & English duly authenticated by the President is laid on the table by the Secretaries-General of the respective houses.

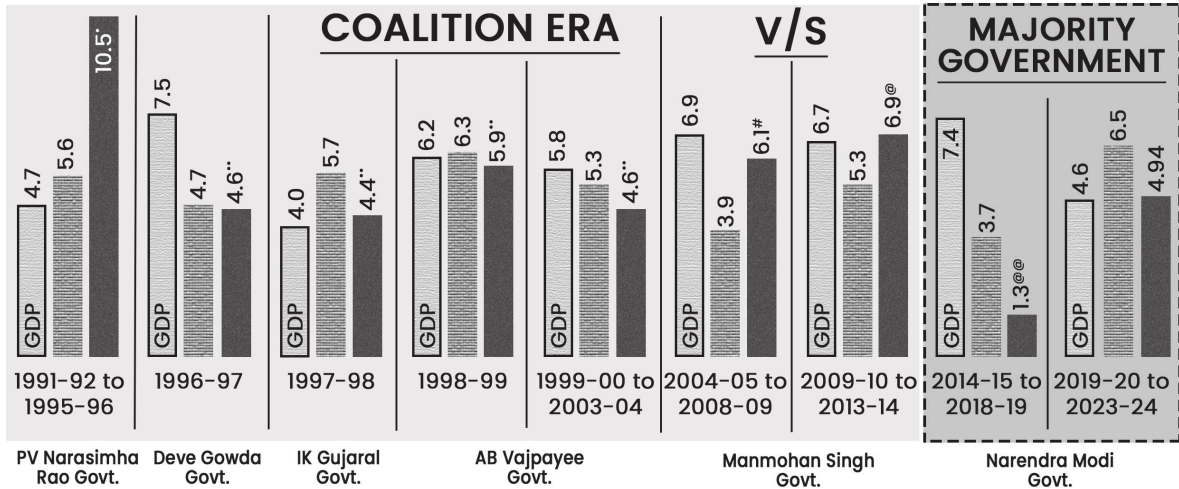
Motion of Thanks

- The Motion of Thanks is a formal motion made in Parliament to thank the President for the address to both Houses. It initiates a debate that precedes a vote, reflecting Parliament's response to the President's Address.

- It is introduced in both the houses of the Parliament.

INDIAN ECONOMIC GROWTH

Annual Average: GDP Growth Rate in % (Base Year 2011-12) (Entre's Fiscal Deficit as % of GDP) WPI-Based Inflation



Note: Base years are 1981-82 and 1993-94, **Base year is 1993-94, #Base years are 1993-94 and 2004-05, @Base years are 2004-05 @@Base year 2011-12.

Disadvantages of the Coalition Government

- 01 Unstable or prone to instability.
- 02 Compromised Leadership of the Prime Minister.
- 03 Coordination Committee of the coalition act as he super cabinet.
- 04 Smaller constituents demand more than their strength.
- 05 Regional bias in national decision-making.
- 06 Lacking responsibility for the administrative failures and lapses.

- **Priority of ongoing Economic reforms:** To attain the macroeconomic growth and stability needed to carry out the government's "Viksit Bharat Sankalp" action plan, which intends to make India a developed nation by 2047.
- **Deciding Major Infrastructure projects:** The long-term objectives of the Government are to raise India's share of manufacturing in the world from the 5 per cent now and in 2030 to 10 per cent in 2047, which is the independence year of the country. In the near term, India would still surpass Germany and Japan to finish third in the world economy by 2027-2028.
- **India's recent foreign-policy priorities:** All seven heads of states from India's neighbouring countries were present, which reflects its commitment to its policy of "Neighbourhood First."

Challenges and priorities before the recently formed coalition government in India

- **Restrain on the ambitious policies:** Implementation of Uniform Civil Code, controversial Agnipath Scheme, pledge to implement simultaneous state and national elections under 'One Nation One Election' may not be appreciated by coalition partners.
- **Political stability:** Both the TDP and the JD (U), who were once part of the opposition alliance, have a history of being unreliable partners.
- **Greater scrutiny by the opposition:** With 232 seats won, the Indian National Congress (INC)-led Indian National Developmental Inclusive Alliance is feeling more confident. May pose parliamentary scrutiny on various issues.
- **Security:** China and Pakistan will continue to be India's primary security concerns.

HUNG PARLIAMENT:

In parliamentary systems, a Hung Parliament is a crucial concept when no single party obtains an absolute majority of seats in the legislature. A nation's political dynamics, stability of government, and policy-making procedures can all be significantly impacted by this circumstance. Example. 1990- V.P. Singh government, 1996- Vajpayee government, 1996-1998 United Front government.

President's discretionary power in Hung parliament (It is Convention and not mentioned in Constitution):

- President calls upon the head of the largest coalition, or the leader of the largest single party to form the government.
- The President may use his discretion to choose a candidate who, in his judgement, will be able to establish a stable government if he is confident that the leader of the single largest party will not be able to win the support of the majority in the House.
- The most competent leader as per his view is invited by him to establish the government.

Punchhi Commission on hung legislature

- The Punchhi Commission made a clear recommendation about the procedure that governors should follow when choosing chief ministers in hung legislature, which are applicable for President in the case of parliament:
 - If there is a pre-poll alliance or coalition, it should be treated as a single political party, and if such coalition obtains a majority, the leader of such coalition shall be called upon by the Governor to form the Government.
 - The party or group of parties commanding broad support in the Legislative Assembly should be invited to form the Government.
 - Where no clear majority of any party or pre-poll coalition exists, the Chief Minister shall be appointed by the Governor in the following order. The pre-poll coalition of parties that held the majority of strength after the election.
- With the backing of others, the largest single party stakes a claim to form the government.
- A coalition formed after the election in which all members join the government
- A coalition formed after elections, with certain parties joining the administration and the remainder, including independents, providing outside support for the government.

Conclusion.

“In the intricate tapestry of coalition governments, unity in diversity emerges, proving that ‘political plurality fosters consensus and resilience’—a testament to India’s democratic ethos and governance evolution.”

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. With reference to the Indian Polity, which of the following statements is NOT correct?
- Anti-defection law does not apply to the coalition partners if they withdraw support of the government.
 - The ‘Tenth Schedule’ only deals with inter-party defections and individual members joining any political party.
 - When no single party obtains a majority in the Lok Sabha election, the President of India is authorized by the Constitution to invite the head of the largest coalition to form the government.
 - Indian economy has witnessed higher GDP growth during coalition governments era compared to majority party governments over the last two decades.

Answer: (c)

Descriptive question

- Q. Analysing the dynamics of coalition governments in India, what are the key factors influencing their stability, effectiveness in governance, and impact on policy formulation compared to single-party governments? [15 Marks] [250 Words]

THE NOTA BUTTON ON THE EVM

Why in News: NOTA was the third choice of voters in 24 of the 25 Lok Sabha constituencies that went to vote in Gujarat during Lok Sabha Election 2024. In another instance, Indore registered the highest-ever NOTA votes in the country at 2,18,674, overtaking the record posted by Bihar’s Gopalganj in 2019.

Key Details

- The None of the Above (NOTA) option was introduced by the Election Commission of India (ECI) on the direction of the Supreme Court in the People’s Union for Civil Liberties (PUCL) v. Union of India judgement 2013).
- It was first used in **2013 legislative assembly elections** held in Mizoram, Chhattisgarh, Madhya Pradesh, Rajasthan and Delhi.
- It was introduced to **protect the secrecy of voter’s choice** who intend not to vote for either of the candidates.
- As per the Election Commission of India, in the 2024 Lok Sabha elections, NOTA’s vote share is 0.99% or 6,372,220 votes. This is 0.07% less than the 1.06% recorded in 2019.

Key Judgements related to NOTA

- **People’s Union for Civil Liberties vs. Union of India (2013)**
The Supreme Court directed the Election Commission to provide for NOTA options in EVMs & ballots.
- **Shailesh Manubhai Parmar vs. Election Commission of India (2017)**
The Supreme Court scraps the use of NOTA in Rajya Sabha elections.

NOTA like provisions in other countries

Spain - Blank Ballot	Ukraine - Against All
France - Blank & Null Votes	Russia - Against All
Greece - White Vote	Canada - Rejection of All Candidates
Belgium - Blank & Null Votes	Colombia - Voto en Blanco (blank vote)

Significance of NOTA in Indian elections

- **Voter Empowerment:** NOTA empowers the voters to express their disapproval of all the contesting candidates.
- It enhances electoral transparency as it gives a clear indication of the voter disapproval.
- It puts a **moral pressure** on political parties to field better candidates i.e. candidates with higher ethical standards and without criminal background.
- It carries a high **symbolic value**; it reflects the voter’s willingness to be a part of the electoral process even if he/she is dissatisfied with the choice of candidates.

Effectiveness of NOTA in Indian elections

- NOTA has **no legal consequence** attached to it – even if the highest number of votes in a seat are polled for NOTA, the second most successful candidate wins. This limits the deterrence on political parties.
- Without the legal consequences NOTA remains a **toothless tiger** i.e. largely a symbolic gesture rather than an instrument of substantial electoral change.
- NOTA in its present form has not fulfilled its purpose as it has not led to increased voter participation (65.79% in Lok Sabha 2024) or political parties fielding good candidates.
- The record number of NOTA votes (> 2 lakh) in Indore (Lok Sabha 2024) highlight both the significant voter dissatisfaction and ineffectiveness of NOTA as a tool.

Ways to enhance the effectiveness of NOTA

- Introduce legal consequences - election should be declared null and void if NOTA receives the highest number of votes in a constituency. Fresh elections should be held in such constituencies without repetition of candidates.
- ECI should establish clear guidelines regarding uniform implementation and consequences of NOTA in all the elections – general, bye, parliamentary, state assembly, local body.

Conclusion

Since its introduction in 2013, NOTA has gained increasing popularity amongst the Indian electorate. It is a potent weapon in the hands of the voter, but it requires teeth to become significantly effective. It has remained largely symbolic due to lack of legal consequences. Legal reforms and uniform implementation will help transform NOTA into a powerful instrument which will go a long way in strengthening the electoral process and overall democracy in India.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about None of the Above (NOTA) option in Indian elections:

1. NOTA option was introduced by Election Commission of India on the direction of Supreme Court in PUCL vs UOI case (2013).
2. It is used in the elections for Lok Sabha, Rajya Sabha and State Legislative Assemblies.
3. It provides for no legal consequence in an election result.

How many of the above statements are correct?

(a) Only one (b) Only two

(c) All three (d) None

Answer: (b) 1 and 3 only

Descriptive Question

Q. Critically examine the significance and effectiveness of NOTA (None of the Above) option in Indian elections. [10 Marks] [150 Words]

POLITICAL REPRESENTATION OF WOMEN IN INDIA

Why in News: India has elected 74 women MPs to Lok Sabha this year, four fewer than in 2019 and 52 more than in India’s first elections in 1952. These 74 women make just 13.63% of the elected strength of the Lower House, much less than the 33% that will be reserved for women after the next delimitation exercise.

Status of women in Indian polity

Women as Voters

Following Independence, women’s participation as voters was not immediately enthusiastic. It increased gradually, however; in the last Lok Sabha election of 2024, almost as many women voted as men—a watershed in India’s progress towards gender equality in politics which has been called a “silent revolution of self-empowerment”.

Lok Sabha Election	Female Turnout (%)	Total Voter Turnout (%)
2004	53.3	58.8
2009	55.8	58.2
2014	65.6	66.4
2019	66.9	67.1
2024	65.7	65.8

The increased participation, especially since the 1990s, is attributed to a number of factors.

- **Higher levels of literacy** among women and their greater participation in the workforce have contributed to increasing their political awareness and confidence to cast their vote.
- **Growth of the electronic media** and the digital revolution have expanded the reach of awareness campaigns about voting rights, conducted both by Election Commission of India and other organisations.
- The Election Commission has adopted **institutional measures** to encourage women to vote, such as ensuring safety by guarding against intimidation, providing separate queues for women at polling booths and women friendly pink booths.
- **Reservations for women** in panchayats and municipalities have helped in enhancing female inclusion in the structures of power at the local level.

- **Political reforms**, technological transformation, and notions of women’s rights are gaining momentum and encouraging more women to vote

Women as Candidates

- The number of women candidates fielded by major political parties in both the parliamentary and state assembly elections remained fairly low till the early 1990s, before rising in the mid-1990s.
- Overall, while women candidates in parliamentary elections have increased over time, their proportion compared to male candidates remains low.

Lok Sabha Election	Women Candidates (%)
2004	8.2
2009	7.3
2014	8.1
2019	9.3
2024	9.5

Women Representation in Parliament

- Parliaments and state legislatures not only make laws and hold the executive accountable but also make a representative claim to represent different constituencies, identity groups, and interests.
- Although women’s participation as voters in elections has increased significantly, the data on women’s representation in both the Lok Sabha and Rajya Sabha suggests that the proportion of women representatives has remained low in comparison to their male counterparts.
- The highest proportion of women representatives elected to the Lok Sabha so far was in the 2019 elections (17th Lok Sabha), and it was less than 15 percent of total membership.
- The proportion of women MPs in the Rajya Sabha is slightly lesser, 14.05% as of 2022.
- In state legislative assemblies or Vidhan Sabhas, the average representation is abysmally low, mostly below 10 percent.

Lok Sabha	% of Women MP in Lok Sabha
Fourteenth (2004-2009)	8.29
Fifteenth (2009-2014)	10.68
Sixteenth (2014-2019)	11.42
Seventeenth (2019-2024)	14.36
Eighteenth (2024-)	13.63

Challenges in Women’s Representation in National and State Legislatures

- **Inaccessibility of Institutions**
 - **Male dominated political party structure:** Most political parties, though pledging in their

constitutions to provide adequate representation to women, in practice give far too few party tickets to women candidates.

• Non-Congenital Structural Conditions

- **Internalised patriarchy:** Many women consider it their duty to prioritise family and household over political ambitions.
- **Family Obligations:** Election campaigns in India are extremely demanding and time-consuming. Women politicians, with family commitments and the responsibilities of child care, often find it difficult to fully participate.
- **Societal prejudices:** The political arena in India is also a rough terrain that is marred by calumny, violence, and mudslinging. Women politicians have been constantly subjected to humiliation, inappropriate comments, abuse and threats of abuse, making participation and contesting elections extremely challenging.
- **Resource Scarcity:** Many women are financially dependent on their families. Fighting parliamentary elections can be extremely expensive, and massive financial resources are required to be able to put up a formidable contest.
- Threat of **criminalised politics**, where the role of muscle power becomes paramount. Women are therefore more likely to contest reserved seats which are known to be less competitive and hence less under the sway of money and muscle power.

Measures taken to improve women representation in Lok Sabha

- **The Constitution (106th) Amendment Act:** Popularly known as Women’s Reservation Act, 2023, it provides 33% reservation for women in Lok Sabha and State Legislative Assemblies.
- **Parliamentary Committee on Empowerment of Women (1997)**
- **Gender neutral rules of Lok Sabha:** Lok Sabha rules were made completely gender neutral in 2014 under the leadership of Meira Kumar. Now all the documents mention the head of a Lok Sabha committee as Chairperson.

Constitutional Provisions

- ★ Fundamental Rights - Article 14 & 15
- ★ Article 326 - Elections to the House of the People and to the Legislative Assemblies of States to be on the basis of adult suffrage

International Covenants

- ★ Beijing Declaration (1995)
- ★ Convention on the Elimination of All Forms of Discrimination Against Women (1979)
- ★ Sustainable Development Goal 5.5

Way Forward - Institutional Reforms

- It should be made legally obligatory for every registered political party to give one-third of the total number of party tickets it distributes at every election to women.
 - The Representation of People Act, 1950, will have to be amended to enable this strategy.
- Promoting girl’s participation in college & university elections. This will increase their political prowess for the future and will improve their political acumen.
- Women’s organisations and networks within political parties and civil society must continue to help them assert their presence within the larger political and social landscape.
- Check the criminalisation of politics: This will enable women to freely contest elections without undue pressure of money & muscle power.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. What was the primary focus of the Beijing Declaration adopted at the Fourth World Conference on Women in 1995?

- Promoting global free trade agreements.
- Addressing climate change and environmental sustainability.
- Achieving gender equality and empowering all women and girls.
- Advancing nuclear disarmament and international security.

Answer: (c)

Descriptive Question

Q. Discuss the various contributing factors to the low percentage of women representatives in Lok Sabha? How can women achieve parity representation in Lok Sabha? [15 Marks] [250 Words]

SEXUAL HARASSMENT AT WORKPLACE

Why in News: Recently, the Supreme Court of India has reconstituted Gender Sensitisation and Internal Complaints Committee under Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

Key Details

Members: The 12 member Gender Sensitisation and Internal Complaints Committee headed by Supreme Court judge Hima Kohli as chairperson.

Objective: To provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment. It gave legislative backing to the Vishaka Guidelines.

Vishaka Guidelines

- These guidelines were instituted by the Supreme Court of India in Vishaka & Others vs State Of Rajasthan, 1997 to protect women at the workplace.
- These are procedural in nature and state the method that is to be followed while dealing with cases related to the sexual harassment of women at the workplace.

Key Provisions of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.

- The act defines sexual harassment and lists what constitute sexual harassment. It includes unwelcome acts such as:
 - physical contact and sexual advances; or
 - a demand or request for sexual favours; or
 - making sexually coloured remarks; or
 - showing pornography; or
 - any other unwelcome physical, verbal or non-verbal conduct of sexual nature;
- It lists down 5 circumstances that would constitute sexual harassment if they are connected with the above mentioned acts.
 - Implied or explicit promise of preferential treatment in employment;
 - Implied or explicit threat of detrimental treatment in employment;
 - Implied or explicit threat about present or future employment status;
 - Interference with work or creating an intimidating or offensive or hostile work environment and;
 - Humiliating treatment likely to affect health or safety.
- The Act defines an **employee** and expands the definition of **workplace**.
- All women employees, whether employed regularly, temporarily, contractually, on an ad hoc or daily wage basis, as apprentices or interns, can seek redressal to sexual harassment in the workplace.
- **Duties of Employers:** According to the Act, the employers must undertake awareness programs, provide a safe working environment, and display information about the PoSH Act at the workplace.
- The law requires any employer with more than 10 employees to form an **Internal Complaints Committee (ICC)**, where a formal sexual harassment complaint can be filed by a woman. It also lists the composition of ICC.

- The Act mandates every district in the country to create a **Local Committee (LC)** to receive complaints from women working in firms with less than 10 employees and from the informal sector, including domestic workers, etc.
- ICC and LC have to conduct inquiries in line with the PoSH Act and comply with the principles of natural justice.

Significance of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

- Ensures a sense of safety and emotional well-being of women. Thus, improving both mental and physical health of women.
- Improves women participation in the workforce. The productivity of a female worker increases in a secured workplace. Thus ensuring financial security to the women.
- Increased women participation in the workforce leads to higher overall economic growth of the country.

How effective is the Act?

- **Non Compliance** by companies and organisations: Many organisations have failed to constitute an ICC and many have constituted ICC with improper composition.
- Huge **underreporting** of cases mainly due to fear of victimisation.
- Lack of accessibility to women workers in the informal sector.
- **Lack of Expertise** of internal complaints committee (ICC) members in handling sensitive and quasi-judicial investigations of this nature.
- **Exclusion** of certain male-dominated sectors such as agriculture and armed forces.
- **Lack of gender neutrality**: The act does not take into account sexual harassment faced by men & transgenders.

Recommendations of Justice Verma Committee on Sexual Harassment at Workplace

- Setting up an employment tribunal instead of internal complaints committee.
- Widening the definition of rape. An act of rape or sexual assault should be viewed as an expression of power.
- Creation of Gender equity company index to create a healthy gender sensitive competition among the companies.
- Establishment of a committee to ensure implementation and compliance by the companies. Defaulters need to be penalised financially and should be named & shamed.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following acts gave legislative backing to Vishakha guidelines?

- (a) The Prohibition of Child Marriage Act, 2006

- (b) The Protection of Women from Domestic Violence Act, 2005
- (c) The Indecent Representation of Women (Prohibition) Act, 1986
- (d) The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

(p) Answer

Descriptive Question

Q. Discuss the need for a safer workplace for women. Critically examine the efficiency of the PoSH Act in ensuring a healthy workplace environment for women. [15 Marks] [250 words]

REVIEW OF VILLAGE GOVERNMENT IN INDIA

Why in News: Recently published, the World Bank Working Paper advocates increased devolution of the funds to panchayats in India.

Key Details

- **Funding Dependency:** State and Central grants are Panchayati Raj in India's (PRIs) main source of funding.
- **Lack of Functionaries:** On average, nearly 0.67 Panchayat Secretaries per Gram Panchayat are available across Indian states, with the number falling to 0.33 in states like Uttar Pradesh.
- **Recentralization Trends:** Digital tracking and beneficiary selection based on MIS are undermining local government sovereignty.
- **Revenue Composition:** Grants account for the majority of revenue, with local body taxes accounting for just 1%.
- **Revenue Per Panchayat:** The average panchayat receives Rs 21,000 in tax revenue, while state and federal grants amount to Rs 3.25 lakh and Rs 17 lakh, respectively.
- **Inter-State Differences:** In terms of revenue per panchayat, Kerala and West Bengal are in the lead, while Andhra Pradesh, Haryana, Mizoram, Punjab, and Uttarakhand are in the last place.
- **Recentralisation:** Adoption of online payment systems, MIS-based beneficiary selection, and digital beneficiary tracking is eroding the Autonomy of Panchayats.

Role of PRIs in democracy

- **Women Lead (1.4 Million Elected):** Districts with female leaders see 20% more investment in water (critical for women) and increased focus on women's issues. Female representation also leads to a significant rise in women reporting crimes.
- **People Participate (Increased Voter Turnout):** enable greater citizen participation, with studies showing an

average 10% rise in voter turnout in villages with active PRIs.

- **Voice for Vulnerable (Empowering Marginalised Groups):** PRI facilitates platform to these group to represent their issues while policy formulation at local level. Various studies have reported shown that 25% increase in participation by underprivileged communities in local decision-making.
- **Stronger Democracy (Improved Governance):** Improved legislative debates and higher-level institutions' functioning. There's a 15% reduction in time spent on bureaucratic hurdles due to more efficient local governance by PRIs.
- **Improved Amenities (Enhanced Service Delivery):** PRIs manage essential services (lighting, health, sanitation, water, education, roads). Studies indicate a 10-15% improvement in service delivery in villages with well-functioning PRIs.
- **Accountability (Community Ownership and Transparency):** PRIs promote community ownership and strengthen accountability mechanisms, leading to a 20% decrease in corruption complaints in areas with active PRIs.

Challenges with respect to PRIs in India

- **Limited Gram Sabha Reach (33% Attendance):** Centralised locations for Gram Sabhas in headquarters villages lead to low citizen participation hindering their ability to voice local needs and concerns.
- **Restricted Devolution (60% Bureaucratic Control):** Most states haven't effectively devolved power or strengthened the functionalities of different PRI tiers. Bureaucratic control remains strong.
- **Fragmented Communication (20% Inefficiency):** Functional connections between state governments, PRIs, and different PRI levels are often missing. This creates communication gaps and hinders coordinated action.
- **Uneven Electoral Processes (10-15% Turnout Variation):** Power disparity between state election commissions leads to inconsistent election rules and practices across states.
- **Staffing Shortfalls (30% Vacancy Rate):** This hinders effective implementation of programs and initiatives at the local level.
- **Unenforced Legislation (50% Non-Implemented Functions):** Failure to implement state-level PRI Acts weakens the legal framework and undermines the effectiveness of PRIs.

Ways to strengthen local Self Government in India

- **Decentralised Planning:** Reduce state-level constraints on sectoral allocations to allow PRIs greater flexibility in resource allocation.
- **Social Audit & Grievance Redress (Review by Central Govt):** Regular review by the Central Government can:

➤ Ensure effective implementation of delegated functions and powers.

- **Capacity Building:** Dedicated, trained personnel to cater to complex local governance needs. Revenue devolution and empowering PRIs to levy taxes for local spending.
- **Improved Functioning:** Regular local body elections with reserved seats for vulnerable groups.
- **Increased Participation:** Encourage greater public participation, especially women, SCs, STs in Gram Sabha meetings.
- **Enhanced Accountability:** Hold Gram Panchayat members and higher-tier representatives accountable for their actions.
- **Clean Politics:** Decriminalise the political system at the local level.

Tax Devolution Mechanism in India

- **Constitutional Basis:** Article 270 of the Indian Constitution mandates sharing net tax proceeds collected by the central government with states.
- **Divisible Pool:** 41% of centrally collected taxes (excluding cess and surcharge) form the pool for devolution.
 - ★ This percentage is determined by the Finance Commission (FC).
- **Vertical Devolution:** Distribution of the divisible pool among states. Currently, states receive 41% (as per 15th FC recommendation).
- **Horizontal Devolution:** Allocation of the state's share among individual states based on various criteria:
 - ★ **Income Distance (45%)** - Focuses on reducing income disparity between states.
 - ★ **Area (15%)** - Accounts for geographical size and resource distribution.
 - ★ **Population (15%)** - Considers population size for resource allocation.
 - ★ **Demographic Performance (12.5%)** - Rewards states with positive demographic trends.
 - ★ **Forest and Ecology (10%)** - Incentivizes states for environmental conservation.
 - ★ **Tax and Fiscal Efforts (2.5%)** - Encourages states to improve tax collection and fiscal discipline.
- In 1992, the 73rd Amendment to the Indian Constitution created 250,000 village democracies (called Gram Panchayats) covering 800 million citizens.

At local level

- **Total Revenue:** Panchayats recorded a total revenue of Rs 35,354 crore in the fiscal year 2022-23.
- **Own Tax Revenue:** Revenue generated through panchayats' own tax sources amounted to Rs 737 crore.
- **Taxes:** These taxes include those on professions and trades, land revenue, stamps and registration fees, property taxes, and service tax.
- **Non-Tax Revenue:** Non-tax revenue for panchayats totaled Rs 1,494 crore. This revenue primarily came from interest payments and Panchayati Raj programs.
- **Central Government Grants:** Panchayats received grants amounting to Rs 24,699 crore from the Central government.
- **State Government Grants:** Grants from State governments to panchayats totaled Rs 8,148 crore.

Conclusion

Village development requires united stakeholder support, strengthened PRIs, empowered representatives, and transparent governance to achieve UN SDGs goals through evidence-based strategies like the Panchayat Development Index.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following criteria used in the horizontal devolution of the state's share among individual states:

1. Income distance is given a weightage of 45%
2. Area is given a weightage of 15%
3. Forest and ecology is given a weightage of 15%
4. Population is given a weightage of 10%

How many of the above statements are correct?

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

Answer: (b) (1 and 2)

Descriptive Question

Q. What are the major challenges faced by Panchayati Raj Institutions (PRI) in India. Suggest measures to overcome the same. [10 Marks] [150 words]

PROMOTION IS NOT A FUNDAMENTAL RIGHT IN GOVERNMENT JOBS

Why in News: Recently, the Supreme Court of India has observed that government employees cannot demand promotion as a matter of right.

Key Details

- Bench of the Supreme Court in the case of **Ravikumar Dhansukhlal Maheta v. High Court of Gujarat**, held that no government servant can claim that promotion as right.
 - **Recent Judgement (Three-Judge Bench):**
 - **Right to Promotion Not Absolute:** Government servants cannot claim promotion as a fundamental right.
 - **Seniority as Selection Criteria Upheld:** The court validated using seniority as a basis for promotion, subject to legal challenge only in cases of extreme violation of equal opportunity.
 - **The Supreme Court's Reasoning:**
 - **Constitutional Silence:** The Constitution does not prescribe specific criteria for promotional posts, leaving the method to the government.
 - **Overruling Ajit Singh Case (1999):** The court reversed its previous stance where an eligible candidate not considered for promotion violated their fundamental right.
 - **Government's Discretion in Promotion Selection Method:** The legislature and executive have the discretion to determine promotion methods and the number of promotional positions based on government needs.
 - **Judiciary's Limited Intervention:** The court emphasised judicial restraint in promotion matters, only intervening when violations of Article 16's equality principle occur.
- ### Constitutional Provisions and evolution of Reservation and Promotion in the Public Sector.
- **Equality and Reservations:**
 - **Article 15(6):** Enables reservation in educational institutions for **Economically Weaker Sections (EWS)**.
 - ◆ Applies to all institutions (aided/unaided private) except minority institutions (protected under Article 30(1)).
 - **Reservations in Public Services:**
 - **Article 16(4):** Allows reservations for **backward classes** deemed inadequately represented in government services.
 - **Indra Sawhney Judgement (1992)**
 - **Reservations Limited to Appointments:** Article 16(4) allowing reservations applies only to initial appointments, not promotions.
 - **Reservation Cap:** Reservation quotas cannot exceed 50% of total positions, except in rare circumstances. This ensures equality under Article 14.
 - **Carry Forward Rule with Limit:** The carry-forward rule for unfilled reserved positions is valid, but subject to the 50% cap.
 - **Article 16 Explained:** The court clarified that Article 16(4) (allowing reservations for backward classes) doesn't override the fundamental right to equality (Article 16(1)). It's an enabling provision.
 - **77th Amendment Act (1995):** Introduced Article 16(4A), allowing states to grant reservations in promotions for SC/STs if deemed underrepresented.
 - **Promotions with Reservation:**
 - **Article 16(4A):** Permits reservation in promotions for **Scheduled Castes (SC)** and **Scheduled Tribes (ST)** if underrepresented.
 - **Carry-Forward of Unfilled SC/ST Quota:**
 - **Article 16(4B):** Enables carrying forward unfilled SC/ST quotas from one year to the next. (Introduced by 77th Amendment Act, 1995)
 - **Ajit Singh Case (1999):** The court held that eligible candidates not considered for promotion violated their fundamental right.

- **85th Amendment Act (2001):**
 - Established “consequential seniority” for SC/ST candidates promoted through reservations (retroactive to June 1995).
 - This grants seniority benefits to SC/ST promoters, impacting promotions of general category candidates.
- **M. Nagaraj Judgment (2006):** Set three conditions for states to provide reservations in promotions for SC/STs:
 - **Inadequacy of Representation:** Demonstrated underrepresentation of SC/STs in promotions.
 - **Creamy Layer Exclusion:** Reservation benefits shouldn’t extend to the “creamy layer” within SC/STs.
 - **Maintain Efficiency:** Ensure reservations don’t adversely affect overall administrative efficiency.
- **Jarnail Singh vs Union of India (2018):** Reversed the stance on data collection for reservations.
 - States no longer need quantifiable data to prove SC/ST backwardness for implementing reservation quotas in promotions.
 - This simplifies “accelerated promotion with consequential seniority” for SC/ST members.
- **Mukesh Kumar vs State of Uttarakhand (2020):** Clarified that Articles 16(4) and 16(4A) don’t grant individuals a fundamental right to claim reservations in promotions.
- **Reservation Limits:**
 - **Article 16(6):** Sets a **10% ceiling** on reservations beyond existing quotas for SC/ST/OBC.
- **Special Consideration for SC/ST:**
 - **Article 335:** Mandates special measures to consider claims of SC/ST in government services and appointments to achieve equal representation.
- **Relaxation in Qualifying Marks**
 - **82nd Amendment Act, 2000:** Empowers states to relax qualifying marks in exams for SC/ST candidates (inserted as a proviso to Article 335).

Significance of reservation in India

- **Righting wrongs:** Targets historically marginalised communities (SC/ST/OBC) facing social and economic disadvantages. (Literacy rate for General Category: 78.1% (PLFS 2018-19) vs. SC: 69.4% & ST: 67.7%).
- **Educational equity:** Provides access to education, a key factor for social mobility. (All India Survey on Higher Education (AISHE) 2020-21: General Category - 44.2%, SC - 14.2%, ST - 5.8%, OBC - 35.8%).
- **Job opportunities:** Creates pathways to government jobs, traditionally inaccessible to these groups. (Representation

in Central Government Services (as of 2018): SC - 16.6%, ST - 7.1%, OBC - 24.9%).

- **Representation matters:** Increases presence of disadvantaged communities in positions of power and influence. (Lok Sabha 2019: General Category - 43.2%, SC - 8.4%, ST - 4.7%, OBC - 43.7%).
- **Breaking social barriers:** Fosters inclusion and participation across various sectors, promoting a more equitable society.
- **Breaking the cycle:** Provides educational and professional opportunities, leading to improved socio-economic conditions for reserved communities. (Monthly per capita expenditure.

Conclusion

The Court upheld separation of powers and allowed for promotions to be undertaken based on the needs of the government. However, the judgement ensured that no one should be unfairly treated and Courts should protect the right to equality, if it is being violated, in matters of promotion.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following judicial cases:

1. Indra Sawhney Case
2. M. Nagaraj Case
3. Jarnail Singh Case

How many of the above cases dealt with the issues of reservations in government appointments?

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

Answer: (c)

DOCTRINE OF MERGER AND THE RULE OF STARE DECISIS

Why in News: The Supreme Court, recently, observed that the extraordinary powers under Article 142 of the Constitution of India is an exception to the doctrine of merger and the rule of stare decisis to do complete justice between the parties.

Doctrine of Merger

- It is a **legal doctrine** founded on the principle of maintenance of decorum and propriety in the judicial system. It is applied to maintain order and avoid confusion in rulings.
- According to this doctrine when an appellate court (higher) passes an order, then order passed by lower court is **merged** (gets subsumed) with the order passed by appellate court.

- This is done to ensure that there are not more than one decree or operative order governing the same subject matter at a given point of time.
- It provides that the orders passed by a superior court would prevail over the orders of all its subordinate courts on the same legal matter and the orders of subordinate courts will get merged with orders passed by the superior court.
- It is a statement of judicial propriety and is not recognised statutorily. It seeks to instil discipline in the functioning of subordinate adjudicating authorities (judicial, quasi-judicial, administrative).
- **Significance in Indian Context:** It ensures **finality** in judicial orders and establishes a **judicial hierarchy** in the country as envisioned in the Constitution. **Example:** Sital Singh vs State of Punjab (2005) - Punjab & Haryana High Court's decision gets merged into the Supreme Court's decision.

Rule of Stare Decisis

- According to the rule of Stare Decisis, courts must follow **previously made judicial decisions** in cases where the same legal issues and questions are brought before them in subsequent matters. These previously made decisions are known as 'precedents'.
- The precedents become an authority or examples for the judges to decide similar legal issues in the future. The rule of Stare Decisis creates an **obligation** on courts to refer to precedents before making certain decisions.

Significance in Indian Context

- It ensures **legal stability** and provides for **evolution of law** in changing societal norms and values. For example, in Keshavananda Bharati vs State of Kerala (1973) - Supreme Court established a landmark precedent in the form of basic structure doctrine which has been followed in numerous subsequent cases.

Article 142(1) of the Indian Constitution

The Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it, and any decree so passed or order so made shall be enforceable throughout the territory of India in such manner as may be prescribed by or under any law made by Parliament and, until provision in that behalf is so made, in such manner as the President may by order prescribe.

Recent Example

SC overturned the election result in Chandigarh mayoral election by invoking Article 142

- (a) Article 32
- (b) Article 124
- (c) Article 142
- (d) Article 226

Answer: (c)

Descriptive Question

- Q. The doctrine of Merger and rule of Stare Decisis ensure necessary judicial discipline and hierarchy in Indian judiciary. Comment. [10 Marks] [150 words]

THE ANDHRA PRADESH REORGANISATION ACT 2014

Why in News: The Andhra Pradesh Reorganisation Act, 2014, which bifurcated unified Andhra Pradesh into two States, was notified on March 1, 2014 and had come into force from June 2, 2014.

Creation of Telangana

The state of Telangana was carved out of the state of Andhra Pradesh by Andhra Pradesh Reorganisation Act, 2014 on 2 June 2014.

2 June - Telangana Day

Brief history of Telangana (Timeline)

- **Telangana rebellion:** It was started by a group of peasants in late 1945, against the prevalent jagirdari system. Represented by the Comrades Association, who were affiliated with the Communist Party of India, the rebellion turned violent and clashed with the Razakars, a militia headed by Kasim Rizvi. In 1948, Indian Army annexed the princely state of Hyderabad, which comprised different regions including Telangana following Operation Polo.
- **Linguistic Reorganisation (1956)** - Telugu speaking areas of Hyderabad State were merged with Andhra State to form the state of **Andhra Pradesh**. Since then, the people of Telangana had been fighting for the demerger of the region to form a separate state again.
- **Call for Telangana statehood: Srikrishna Committee (2010)** was constituted by the Government of India to look into the demand for separate statehood for Telangana or keep the state united.
- **Andhra Pradesh Reorganisation Act, 2014** carved out the state of Telangana from united Andhra Pradesh.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

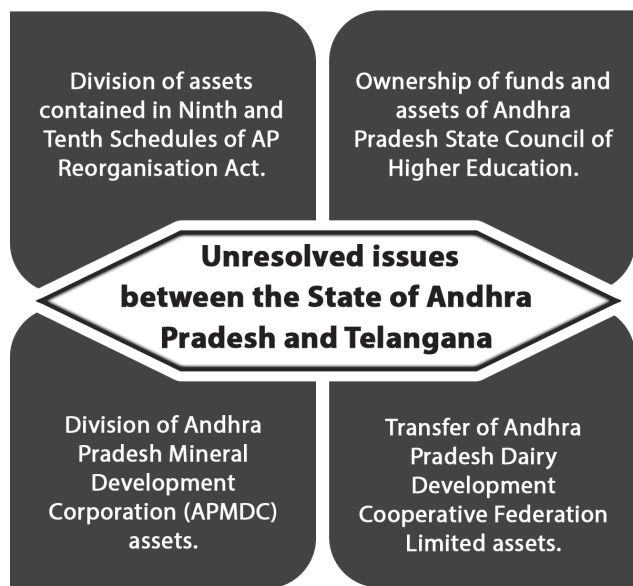
- Q. Which article of the Indian Constitution allows the Supreme Court to bypass technical legal doctrines like doctrine of Merger and Stare Decisis for doing complete justice in some cases?

Creation of New States - Constitutional Provisions

Article 2: Admission or establishment of new States—Parliament may by law admit into the Union, or establish, new States on such terms and conditions as it thinks fit

Article 3: Formation of new States and alteration of areas, boundaries or names of existing States—Parliament may by law—

- (a) form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State;
 - (b) increase the area of any State;
 - (c) diminish the area of any State;
 - (d) alter the boundaries of any State;
 - (e) alter the name of any State;
- A bill to form a new state can be introduced in either house of the Parliament only after the recommendation from the President of India.
 - Before giving the recommendation to Parliament, the President first refers the bill to the state legislatures whose area or boundary will be affected by the bill.
 - The recommendations or views of the state legislature are not binding on the Parliament.
 - Such a bill has to be passed by a simple majority (majority of members present & voting) in both the houses of Parliament.
 - Laws made under Articles 2 and 3 provide for the amendment of First and Fourth Schedules of the Indian Constitution.
 - No such law is deemed to be an amendment of the Constitution for the purpose of Article 368.



Reasons for the demand of newer states in India

- **History & nature of society:** The region of Chhattisgarh and Jharkhand had historically been populated by tribals with their distinct nature of society.
- **Political:** Jat dominated western UP region is demanding Harit Pradesh for more political clout which currently rests with Yadavs in UP.
- **Administrative & Governance:** To bring the power centres closer to people and improve the participation in

mainstream politics from a particular region. Example - Vidarbha in Maharashtra, Bundelkhand in UP.

- **Socio-cultural & Ethnic:** Minority groups in states carry the fear that the influence of majority culture might sweep away their culture. Example - Gorkhaland in West Bengal, Bodoland in Assam.
- **Economic:** Sentiments of being deprived and lack of economic development as compared to other regions in the state. Example - Telangana in united Andhra Pradesh.
- **Greater local autonomy:** The acceptance of demands for separate states provide space for strengthening 'self-rule', 'shared-rule' principle of federal governance.
- **Physiographic:** People living in the same physiography have similar cultures. Example - Uttarakhand is a mountainous region while the rest of UP is plain.

Arguments against the demand for smaller states in India

- **Possibility of Increased Regionalism:** This could further give rise to more son of the soil movements.
- **Economic Viability & Administrative Challenges:** Increased bureaucratic & administrative expenses. Smaller states may struggle to generate adequate revenue to sustain themselves.
- **Hegemony of Dominant Caste/Tribe:** There is a greater possibility of the dominance of a particular caste over the power structures of the state.
- **Increased Inter-State Disputes:** Disputes over borders, water resources etc.
- **Threat of Political Fragmentation:** Division of states can lead to political instability and fragmented governance. This might weaken the **national unity**.

Performance of newly formed states

- The three new states created in 2000 have experienced improvement in economic growth measured in terms of GSDP and per capita income.
- Uttarakhand witnessed an average growth rate of 18.9% between 2005-06 and 2014-15 as compared to 14.1% growth of UP.
- The new states witnessed an improvement in parameters related to social conditions such as poverty reduction, literacy rate, infant mortality rate.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to formation of new states in India, which of the following statements is/are incorrect?

1. Formation of new states in India is done by a constitutional amendment under Article 368 of the Constitution.

2. A bill regarding the formation of a new state can only be introduced in the House of People.

Select the answer using the code given below:

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

(c) :Answer

Descriptive Question

Q. New states in India are often seen more as the outcome of political compulsion and less as drivers of institutional change. Comment. [10 Marks] [150 words]

SPECIAL CATEGORY STATUS

Why in News: Bihar Chief Minister Nitish Kumar has reiterated the state’s long-standing demand to be granted the special category status by the Union Government of India.

What is Special Category Status (SCS) for a State?

- Special category status is a classification of regions or states by the central government to provide special assistance in the form of tax benefits and financial support for development of the region.
- The special category status was introduced in 1969 based on the recommendations of the Fifth Finance Commission. The intent was to help States that are disadvantaged in terms of their geographic, social or economic status to improve their position on par with other, more developed Indian States.
- The Constitution of India does not have any such provision to bestow a state with the special category status.

Criteria to provide special category status (Based on Gadgil formula)

- Hilly and difficult terrain
- Low population density and / or sizeable share of tribal population
- Strategic location along the borders with neighbouring countries
- Economic and infrastructural backwardness
- Non-viable nature of state finances

States with Special Category Status in India

- In 1969, three states — Jammu & Kashmir (now a Union Territory after revocation of Article 370), Assam and Nagaland — were granted the special category status.
- Currently, 11 states have the SCS in the country including Assam, Nagaland, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Tripura, Arunachal Pradesh, Mizoram, Uttarakhand, and Telangana.

- Andhra Pradesh, Bihar and Odisha are demanding special category status.

Recommendation of Finance Commission and Special Category Status

Special category status had been done away with the 14th Finance Commission for the states, except for three hill states and the Northeastern states. This was done in order to accommodate the resource gap in these states via tax devolution. It was enhanced from 32% to 42%.

Benefits that come with Special Category Status

- States that come under special category status get preferential treatment in getting central assistance and tax breaks.
- For the implementation of the **centrally-sponsored scheme**, the special category status states are required to contribute just 10% while the central government provides 90% of the fund.
 - Regular states get 60% to 75% of the fund from the Centre under the same schemes
- **Non-lapsable fund:** In case of unspent money, the states with SCS have the provision to carry it forward.
- **Tax Concessions:** These states also enjoy special industrial incentives such as Income-tax exemptions, custom duty waivers, reduced excise duty, corporate tax exemption for a certain period, concessions and exemptions relating to GST, and lower state and central taxes.

Concerns related to Special Category Status

- Increased burden on central finances.
- Increased dependency on central assistance.
- Reduced accountability on behalf of the state government to mobilise its own resources.
- No constitutional basis
- Lack of periodic assessment - states continue to remain in the SCS list for an indefinite time period.

Union Government of India stand on demands of special category status by states

- The central government has made it clear multiple times that it will not consider the demands for special category status by any new state.
- The 14th Finance Commission recommended increasing the devolution of money to states from the divisible pool of central taxes to 42% from the earlier 32%. The 15th Finance Commission has also kept the tax devolution nearly at the same level. The Centre argues that higher tax devolution provides the states with more resources.
- Moreover, the concept of plan assistance is no more there as the Planning Commission has been scrapped.

Way Forward

- Higher Tax Devolution to states with a focus on poverty alleviation and attracting investments.

- Exploring new and alternative funding methods.
- Incentivising states to be more financially prudent by allotting certain grants and packages (Competitive Federalism)
- Periodic review of the criteria and performance of SCS states.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following states does NOT have Special Category Status in India?

Select the correct option:

- (a) Uttarakhand (b) Telangana
- (c) Andhra Pradesh (d) Sikkim

(c) Answer

Descriptive Question

Q. Discuss the concept of special category status (SCS) for states in India. What are the criteria for granting SCS? Critically analyze the current relevance of SCS in cooperative federalism. [15 Marks] [250 words]

SECTION 436-A OF THE CODE OF CRIMINAL PROCEDURE (CRPC)

Why in News: The Delhi High Court recently granted statutory bail under Section 436A CrPC to former JNU student Sharjeel Imam in connection with a **2020 communal riots case** involving allegations of sedition and unlawful activities.

About Section 436A of Code of Criminal Procedure, 1973

- As per Section 436A CrPC, a person who has spent half of the maximum period of the prescribed sentence as an undertrial shall be released on bail.
- **Purpose:** To address prolonged detention of undertrial prisoners.
- **Applicability:** Applies to persons accused of offences punishable with imprisonment up to 7 years.
- **Eligibility Criteria to avail section 436A:** Undertrials who have completed half of the maximum period of imprisonment specified for their offence.
- **Conditions:** Release on personal bond with or without sureties.
- **Discretionary Power:** Concerned Court in which trial is going on may release based on the nature of the offence and conduct of the accused.
- **Exceptions:** Not applicable to certain offences such as those punishable with death or life imprisonment.

- According to the Supreme Court of India, it can be invoked in cases under the Prevention of Money Laundering Act also.
 - Section 45 of the PMLA deals with the 'twin conditions' of bail.
 - The first condition is that the person has to prove in court that he or she prima facie is innocent of the offence.
 - Secondly, the accused should be able to convince the judge he would not commit any offence while on bail.

Type of bails in India

- The CrPC does not define the word bail but under Section 2(a) of Criminal Procedure Code, 1973 offences are categorised into two Bailable offence (it is the type of offence in which the accused person is granted bail and Non Bailable offence (it is the type of offence in which accused is difficult to get bail).
- **Section 437 of CrPC (Regular Bail):** Allows a person accused of a non-bailable offence to seek bail.
 - **Exceptions:** Not granted if the offence is punishable with death or life imprisonment, or if the accused has prior convictions for serious offences.
 - **Special considerations:** Bail may be allowed for minors, women, or those who are sick or infirm.
- **Section 439 of CrPC (Special Powers for Bail):** Empowers the High Court and Sessions Court to grant bail to a person in custody.
 - **Notice to Public Prosecutor:** Required before granting bail for certain offences.
- **Section 167(2) of CrPC (Default/Statutory Bail):** If an accused is in custody for more than the specified period (e.g., 60 days) without trial completion, they must be released on bail.
- **Interim Bail:** Temporary bail granted during ongoing legal proceedings. Typically used when regular bail cannot be immediately decided.
- **Medical Bail:** Granted when an accused's health condition requires medical treatment.

Important judgements regarding bail in India

- **Amar Chand Aggarwal vs. Shanti Bose & Another (1973):** Emphasised the discretion of courts in granting bail and factors to be considered.
- **Hussainara Khatoon & Ors. Vs. Home Secretary, State of Bihar (1979):** This landmark case highlighted the right to speedy trial and release of undertrial prisoners, laying the foundation for subsequent reforms including Section 436A.
- **Akhil Kumar vs. State of U.P. (2001):** The Allahabad High Court emphasised that the right to speedy trial and release under Section 436A is a fundamental right guaranteed under Article 21 of the Constitution.
- **Jayendra Saraswathi Swamigal vs. State of Tamil Nadu (2005):** Addressed the issue of denial of bail under Section 437 of the CrPC (grant of bail in non-bailable offences).

- **Dataram Singh vs. State of U.P. & Another (2018):** Emphasised that bail is the rule and jail is the exception, urging courts to grant bail unless there are compelling reasons not to.
- **Bail Provisions:** Under the CrPC, a person who is arrested has the right to apply for bail, and bail should generally be granted except in specific circumstances.

What is Bail Law in the United Kingdom?

- **General Right to Bail:** The Bail Act 1976 affirms a general right to be granted bail for individuals accused of offences, unless specific grounds for refusal are present.
- **Grounds for Refusal of Bail:** Bail may be refused if there are substantial grounds for believing that,
 - the defendant would fail to surrender to custody.
 - the defendant would commit an offence while on bail.
 - the defendant would interfere with witnesses or otherwise obstruct the course of justice.
 - Detention is necessary for the defendant's own welfare or protection.
 - Other exceptional circumstances justify detention.

Protections against Indiscriminate Arrest in India

Constitutional protections

- **Article 21 - Right to Life and Personal Liberty.** The Supreme Court has interpreted this to include the right against arbitrary or unlawful arrest.
- **Article 22 - Protection against Arrest and Detention in Certain Cases:**
 - **Clause (1):** It specifies that a person who is arrested must be informed of the reasons for their arrest and entitled to consult with a legal practitioner.
 - **Clause (2):** It specifies the duration for which a person can be detained without being produced before a magistrate.
 - **Clause (3):** It provides grounds for preventive detention and safeguards against abuse of such powers.
- **Article 39:** free legal aid to socially and economically weaker sections of undertrials.

Judicial Interpretations by the Supreme Court of India in protections against Indiscriminate Arrest

- **D.K. Basu vs. State of West Bengal (1997):** Guidelines to prevent custodial violence and ensure that arrest and detention are in accordance with the law and with respect for human dignity.
- **A.R. Antulay vs. R.S. Nayak (1988):** Emphasised the importance of following procedural safeguards during arrest and detention.

Procedural Safeguards against Indiscriminate Arrest in India

- **Section 41 to 60 of the Code of Criminal Procedure (CrPC):** Specifies the procedures for arrest, including when and how a person may be arrested, and the rights of the arrested person.

New provisions introduced in the Bharatiya Sanhita Suraksha Act, 2023 related to offence endangering sovereignty, unity and integrity of India

- **Section 150**
Addresses actions related to endangering India's sovereignty, unity, and integrity. **Imprisonment:** For life, to which a fine may be added.
- **Section 152**
Addresses actions that intentionally or knowingly promote secession, armed rebellion, subversive activities, or sentiments of separatism, endangering India's sovereignty, unity, or integrity. **Imprisonment:** 7 years to life imprisonment.
- **Section 156**
Covers actions that disturb public tranquillity. This section penalises those who engage in rioting, violent assemblies, or other disruptive activities. **Imprisonment:** Up to 03 years.

Status of Undertrials in India

- **Data:** As per National Crime Records Bureau (NCRB), in 2022 there were 4,34,302 undertrials across jails in India, comprising 76% of the total jail population of 5,73,220.
- **Marginalised Communities:** Undertrials disproportionately (53% of total) come from marginalised communities.
- **Education Levels:** Around 29% of undertrials are illiterate, and 42% have not completed secondary education.
- **Inadequate Legal Aid:** At least 23 prisons reported having no legal aid lawyers.
- **Apathy of lawyers:** Number of prison visits by each lawyer per month is strikingly low, averaging 0.22 times.
- In 2022, 37,220 prisoners were released from jails across the country following the campaign 'Release UTRC@75.'

Issues Faced by Undertrials in india

- **Overcrowding in Prisons:** Leading to poor living conditions and inadequate facilities for undertrials.
- **Prolonged Detention:** Due to delays in the judicial process, lack of legal representation, or inability to meet bail conditions.
- **Limited Legal Aid and Access to Justice:** Hinder undertrials' ability to navigate the legal system effectively and undermine human rights.
- **Poor Healthcare and Sanitation:** Often inadequate, posing health risks to undertrials.
- **Psychological Impact:** Prolonged detention and uncertainty about legal proceedings can lead to psychological distress and mental health issues among undertrials.

- **Unlawful Arrest:** Some undertrials are held under preventive detention laws, which can lead to indefinite incarceration without trial.
- **Lack of Family Support:** Separation from families and communities affect their social and emotional well-being.
- **Vulnerability to Exploitation:** Undertrials may be vulnerable to exploitation and abuse within the prison system, including from fellow inmates and authorities.
- **Impact on Rehabilitation:** Prolonged detention can hinder opportunities for rehabilitation and reintegration into society even if acquitted or released.

Recommendations to improve the situation of undertrials in India

- **Legal Reforms:** Setting up of Fast-tracking Trials and ensuring universal access to legal aid especially those from marginalised backgrounds.
- **Prison Reforms:** Enhancing infrastructure, healthcare, and nutrition facilities in prisons to ensure humane treatment and measures to reduce overcrowding.
- **Judicial Oversight:** Regular review of undertrials' cases to prevent prolonged detention without trial. And mechanism to ensure compliance with human rights standards.
- **Family and Community Engagement:** Facilitate regular communication between undertrials and their families to maintain social ties and support networks.
- **Rehabilitation Programs:** Provide vocational training, education, and counselling programs to prepare undertrials for reintegration into society upon release.
- **Policy and Legislative Changes:** Consider reforms to bail laws to facilitate easier access to bail for eligible undertrials.
- **Pre-Trial Diversion Programs:** Develop community-based alternatives to pre-trial detention for non-violent offenders, such as supervised release programs.

UNDERTRIALS IN INDIAN JAIL - STATE WISE

States/UTs	Number	Share
Delhi	14,506	91%
J&K	3,717	91%
Bihar	44,187	85%
Punjab	15,643	85%
Odisha	15,619	83%
All India	3,71,848	76%

Need of Bail Reforms in India

- **Overcrowded Prisons:** As of 2019, the occupancy rate was 117.6%, exacerbating living conditions and violating human rights.
- **Economic Impact:** A study estimated that each undertrial's detention in India costs the state around ₹75,000 per year.
- **Bail as a Right:** The Universal Declaration of Human Rights recognizes bail as a fundamental right. India must align its legal framework with international standards.

- **Marginalised Communities:** 53% of undertrials in India are from Muslim, Dalit, and Adivasi backgrounds, communities together constitute only 39% of India's population.
- **Inadequate Legal Aid:** At least 23 prisons reported having no legal aid lawyers, and the remuneration for legal aid lawyers is often low.
- **Unawareness about Section 436A of C.R.P.C.:** Amnesty India has found that prison officials are frequently unaware of this section and unwilling to apply it.

Conclusion

In an endeavour related to the justice reform in India, equitable bail policies empower undertrials, balancing rights with public safety and fostering a fair and efficient legal system.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements with reference to the Laws related to bail in India:
1. The Right to statutory bail is available to accused persons when the police fail to complete its investigation within the stipulated time.
 2. Right to bail is guaranteed under Article 19 of the Indian Constitution.

Which of the statements given above is/are incorrect?

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

Answer: (b)

Descriptive Question

Q. "Discuss the challenges and constitutional safeguards concerning the bail system in India. Evaluate recent judicial interpretations and legislative reforms aimed at balancing individual rights with public safety." [15 Marks] [250 words]

POST OFFICE ACT 2023

Why in News: The Post Office Act came into force on June 18. Repealing the 125-year-old Indian Post Office Act of 1898.

Key Points of the Post Office Act, 2023:

- **Interception and Detention of Items:** Section 9 empowers the Centre to intercept, open, or detain any postal article for state security, public order, or law enforcement purposes, akin to the old 1898 Act.
- **Exemption from Liability:** Section 10 exempts the Post Office from liability for loss, misdelivery, or damage during postal services, similar to provisions in the 1898

PUBLIC EXAMINATIONS (PREVENTION OF UNFAIR MEANS) ACT - 2024

Why in News: The Government of India, on June 24, has notified the Rules required to operationalise the Public Examinations (Prevention of Unfair Means) Act, 2024.

Key Details

Objective of the Public Examinations (Prevention of Unfair Means) Act 2024

- ★ To deter and penalise the use of unfair means in public examinations.
- ★ To bring greater transparency, fairness and credibility to the public examination systems.
- ★ To reassure the youth that their sincere and genuine efforts will be fairly rewarded and their future is safe.

Definitions under the Act

1. **Candidate:** A person granted permission by the public examination authority to appear in public examination. It also includes persons authorised as scribes.
2. **Public Examination:** Any examination conducted by a public examination authority (listed in schedule).
3. **Public Examination Authority:** An authority specified by the Central Government by notification for conducting public examinations.
4. **Service Provider:** Any agency, organisation, body, company etc. which is engaged by the public examination authority for conduct of public examination.
5. **Public Examination Centre:** Premises selected by the service provider or by the public examination authority, to be used for conduct of public examination.
6. **Unfair Means:** It includes one or more of the following acts:
 - Leakage of question paper or answer key or part thereof;
 - Directly or indirectly assisting the candidate in any manner unauthorisedly in a public examination;
 - Tampering with answer sheets including Optical Mark Recognition response sheets;
 - Tampering with the computer network or a computer system;
 - Tampering with any document necessary for short-listing of candidates or finalising the merit or rank of a candidate in a public examination;
 - Altering the assessment except to correct a bona fide error without any authority;
 - Manipulation in seating arrangements, allocation of dates and shifts to facilitate adopting unfair means in examinations;
 - Threatening the life, liberty or wrongfully restraining

persons associated with public examination authority or service provider;

- Obstructing the conduct of a public examination;
- Creation of fake website to cheat or for monetary gain;
- Conduct of fake examination, issuance of fake admit cards or offer letters to cheat or for monetary gain

Schedule List:

Any Examination Conducted By:-

1. Union Public Service Commission
2. Staff Selection Commission
3. Railway Recruitment Boards
4. Institute of Banking Personnel Selection
5. Ministries or Departments of the Central Government and their attached and subordinate offices for recruitment of staff.
6. National Testing Agency
7. All "Ministries or Departments of the Central Government and their attached and subordinate offices for recruitment of staff.
8. Such other authority as may be notified by the Central Government.

- **Institution:** It refers to any agency, organisation, body, association of persons, business entity, company, partnership, or single proprietorship firm, by whatever name it may be called, excluding the public examination authority and the service provider engaged by such authority.
- **Centre Coordinator**
 - Rules provide for the appointment of a Centre Coordinator for Public Examinations, who may be "serving or retired employees of the Central Government, State Government, Public Sector Undertakings, Public Sector Banks, Government Universities, autonomous bodies and other Government Organisations".
 - He/she shall be the representative of the public examination authority for coordination of activities of the various service providers and the examination authority, and for overseeing the compliance of all norms, standards, and guidelines for the exam.
- **Venue in-charge:** A person nominated by the examination conducting service provider to supervise, coordinate and manage the activities of different service providers and to ensure that the norms or standards and the guidelines notified for conduct of public examination are complied with.

Preventive Measures

- **Examination Security**
 - **Secure Printing & Distribution:** Using state-of-the-art printing and secure transportation system to prevent unauthorised access to examination materials.
 - **Digital Surveillance:** Using advanced surveillance systems at public examination centres to monitor and prevent unfair practices.
- **Regulatory Framework:** Establishment of a regulatory body for overseeing the implementation of the provisions of the Act. The regulatory body is to be responsible for:
 - Compliance Monitoring to ensure that involved agencies adhere to the prescribed protocols.
 - Conducting Audits of examination processes and centres.
 - **Model Act:** It would serve as a model act for States to adopt at their discretion, aiding them in preventing criminal elements from disrupting State-level public examinations.
 - **Investigation:** Any offence under the Act shall not be investigated by an officer below the rank of DSP or ACP.

Provisions and Punishment for Offences under the Act

- All offences under the Act shall be cognizable, non-bailable and non-compoundable.
- The person resorting to unfair means & offences under the Act shall be punished under Section 10(1) with imprisonment for a term not less than three years, which may extend to five years, and with a fine up to Rs.10 lakh.
- In case of default in payment of the fine, additional imprisonment shall be imposed, as per the provisions of the Bharatiya Nyaya Sanhita, 2023 (BNS).
- There is a provision for up to five years' imprisonment and a fine of up to ₹1 crore for malpractices and organised cheating in government recruitment exams.
- Section 10(2) holds the service provider liable for a fine up to Rs.1 crore, and the proportionate cost of the examination shall also be recovered from the service provider;
- Such service providers shall also be barred from being assigned with any responsibility for the conduct of any public examination for a period of four years.
- Moreover, the Act permits the confiscation of properties belonging to institutions involved, which must incur the expenses of the compromised exams.
- The Act also prohibits disclosing exam-related confidential information prematurely and unauthorised entry into exam centres to create disruptions.
- "Candidates" would not be liable for action within its purview and would continue to be covered under existing administrative provisions of the concerned public examination authority.

Concerns related to the Act

- The Act is perceived as harsh due to its stringent punitive clauses, For example, section 9 of the act states that all offences under this Act shall be cognizable, non-bailable, and non-compoundable.
- The Act shifts the burden of proving innocence to the accused. For example, under Section 10(4), a person shall not be liable for punishment if they can prove the offence was committed without their knowledge.
- Section 14 of the Act protects the chairperson, members, officers, and other employees of the public examination authority by designating them as 'public servants' within the meaning of the Bharatiya Nyaya Sanhit.
- Absence of fixed timelines for agencies to probe malpractices, and the lack of interim measures during investigations.
- Effectiveness of the Act is questionable, as existing State laws against cheating in public examinations in Uttarakhand, Gujarat, Rajasthan, Chhattisgarh, Uttar Pradesh, and Andhra Pradesh have not proved to be effective deterrents.

Way Forward - Legislation alone is not enough

- The Public Examinations (Prevention of Unfair Means) Act, 2024, is a significant step towards combating the malpractices plaguing our examination system. Strict implementation of the Act is crucial to ensure that its objectives are met.
- The Act must be part of a **broader strategy** that includes technological advancements, increased surveillance, and robust administrative procedures.
- There must be a **robust mechanism** for monitoring and evaluating the implementation of the Act. Regular audits, feedback from stakeholders, and independent evaluations can help identify gaps and areas for improvement, ensuring that the Act remains effective and relevant over time.
- **Collaboration between central and state governments** is essential to create a uniform framework that addresses the unique challenges faced by different regions.
- There needs to be a **cultural shift in how exams are perceived**. The pressure to succeed in exams often drives students and other stakeholders to resort to unfair means. Promoting a culture of integrity and ethical behaviour, starting from school education, can help address the root causes of cheating and malpractices.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQs

Q. Consider the following statements regarding the Public Examinations (Prevention of Unfair Means) Act, 2024:

1. The Act lays provisions for imprisonment for a minimum of three years and fine equivalent to up to Rs. 10 lakhs for people who employ unfair means.

2. The possible punishments for the service providers that are convicted under the Act include fines of up to Rs 1 crore.
3. According to the Act, belongings of the institutions operating unfair means can be seized.

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. Discuss the key objectives outlined in Public examinations (Prevention of Unfair Means) Act, 2024. How will these measures help to enhance the credibility of public examinations in India? Also suggest further measures to enhance the examination system in India. [10 Marks] [150 words]

POST-GRADUATE MEDICAL EDUCATION REGULATIONS 2023

Why in News: Doctors have expressed disapproval of the recently announced Post-Graduate Medical Education Regulations, 2023.

Features of Post-Graduate Medical Education Regulations, 2023

- **Eligibility and Course Structure:** Defines qualifications and durations for various postgraduate medical programs.
- **Establishing Institutions:** Requires National Medical Commission (NMC) permission to start any postgraduate medical course.
- **Faculty and Infrastructure:** Sets minimum faculty requirements for each department, emphasising growth in specialist areas.
- **Student Requirements and Leave:**
 - Clarifies student leave entitlements:
 - ◆ 52 weekly offs per year. 20 days of paid casual leave.
 - ◆ Maternity/paternity leave as per government rules.
 - ◆ Requires students to maintain logbooks of their learning experiences.
- **Recognition and Evaluation:** Eliminates the separate application process for PG course recognition.

- **Self-declaration:** Requires annual Self-Declaration submissions from colleges/institutions.

The National Institute of Indian Medical Heritage (NIIMH)

Established : 1956 (as the Upgraded Department of History of Medicine under the Govt. of Andhra Pradesh).
Handed over to Govt. of India : 1969
Functioning under : Ministry of AYUSH
Location : Hyderabad
Aim : To provide resource materials for historians, scientists, and other workers who are interested in studying and documenting the historical aspects of Ayurveda, Yoga & Naturopathy, Unani, Siddha, Homoeopathy and Sowa Rigpa (AYUSH) along with Modern Medicine.
It is the only institute of its kind in Southeast Asia.

Criticism Of Post-Graduate Medical Education Regulations

- **Long Working Hours:** The regulations lack specific limits on working hours, offering only a vague mention of “reasonable time for rest.” This raises concerns about potential burnout and fatigue among students.
- **Mental Health Neglect:** There’s no mention of measures to address mental health or provide support for student well-being.
- **Stipends and Parity:** The issue of irregular stipends for students remains unaddressed.
- **Integration of Artificial Intelligence (AI):** The regulations lack clear guidelines for integrating AI into the curriculum.
- **Inclusivity Issues:** While offering a 5% reservation for doctors with disabilities, the regulations haven’t incorporated recommendations from disability rights groups.
- **Data on Faculty and Infrastructure:** Critics argue that achieving the stipulated faculty-student ratios and infrastructure standards might be challenging, especially for smaller institutions.
- **Focus on Documentation:** The emphasis on annual Self-Declaration submissions and logbook maintenance by students might create an administrative burden, potentially diverting focus from practical learning experiences.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements about Post-Graduate Medical Education Regulations, 2023:
1. It requires National Medical Commission (NMC)

permission to start any postgraduate medical course.

2. It defines qualifications and durations for various postgraduate medical programs.
3. It requires students to maintain logbooks of their learning experiences.

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. Discuss the provisions of the Post-Graduate Medical Education Regulations, 2023. Also analyze the measures required to address the challenges identified in the regulations for enhancing the overall standards of postgraduate medical training. [10 Marks] [150 words]

DIGITAL COMPETITION BILL 2024

Why in News: In a letter to the Ministry of Corporate Affairs (MCA), four Internet and Mobile Association of India (IAMAI) members disagree with the proposed Digital Competition Bill (DCB) and call for immediate enforcement of regulations that forbid anti-competitive practices.

Concerns raised regarding the Digital Competition Bill

- **Stringent rules:** Strict rules might discourage companies from launching new features.
- **Homegrown Hurdles:** Regulations could hinder Indian tech companies' growth.
- **Compliance Overload:** Significant Digital Enterprises (SSDEs) and Associate Digital Enterprises (ADEs) might face a heavy compliance burden.
- **CCI's Big Stick:** Broad powers granted to the Competition Commission raise concerns.
- **Data Sharing Dilemma:** Regulating ADEs might raise data privacy questions.
- **Unclear Criteria:** Vague guidelines for designating SSDEs and ADEs could lead to confusion.
- **Global Mismatch:** Compatibility with international trade agreements needs consideration.

Existing Laws Regulating India's Digital Sector

- **Information Technology Act, 2000 (IT Act) & Amendments: Core Framework:** Defines legal framework for electronic transactions, data security, and cybercrime.
- **Consumer Protection Act, 2019 & E-commerce Rules:** Protect consumers from unfair trade practices and misleading advertisements in online transactions.

- **Data Protection & Privacy:** Personal Data Protection Bill, 2021 (PDP Bill) aims to establish a comprehensive data protection framework, but is still under discussion.
- **Reserve Bank of India (RBI) Regulations:** Apply to online payments and digital wallets.
- **Telecom Regulatory Authority of India (TRAI) Regulations:** Govern various aspects of the telecommunications sector, including internet access and content.
- **Advertising Standards Council of India (ASCI):** Self-regulatory body promoting ethical advertising practices (applies to all ads targeting Indian consumers, regardless of origin).

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following institutions/Bodies:

1. Reserve Bank of India
2. Telecom Regulatory Authority of India
3. Advertising Standards Council of India

How many of the above play a crucial role in regulating various aspects of India's digital sector ?

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

Answer: (c)

SELF-DECLARATION CERTIFICATE FOR ADVERTISEMENTS

Why in News: The Information and Broadcasting Ministry has relaxed the rules for Self-Declaration Certificates (SDCs) required by advertisers.

Key Details

- **Limited Scope:** Only advertisements for **food and health products** now require an SDC. Previously, all sectors needed it.
- **Annual Filing:** Uploading the SDC on the Broadcast Seva Portal and Press Council of India portal needs to be done only **once a year**, not for each ad.
- **Proof of Upload:** Advertisers must provide proof of SDC upload to media outlets (TV channels, newspapers, etc.) for their records.

- **Overall Responsibility:** Advertisers remain responsible for ensuring their ads comply with all applicable laws and regulations.

Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022

- **CCPA Guidelines and Penalties**
CCPA's June 2022 guidelines enforce fines up to ₹10 lakh for endorsers and ₹50 lakh for subsequent violations, with possible endorsement bans up to three years.
- **Purpose and Impact of Endorsements**
Celebrities endorse products to leverage credibility and influence consumer decisions, enhancing brand trust.
- **New Obligations on Endorsers**
Endorsers must verify claims and disclose affiliations, aiming to enhance transparency and accountability in ads.
- **Enforcement Challenges**
Effectiveness of penalties in deterring misleading ads is debated due to verification ambiguities and subjective claims.
- **Public Complaints and Regulatory Response**
Over 12,000 complaints about misleading ads from 2017-2020 highlight heightened scrutiny and COVID-19 impacts.
- **Debates on Endorser Responsibility**
Discussions continue on endorsers' accountability for false claims, with contractual protections emphasising the need for clearer standards.

- **Addresses industry concern:** This move addresses concerns raised by the advertising and media industry and simplifies the SDC process.
- These guidelines came in force because The Supreme Court banned Patanjali Ayurved from endorsing medicines that promise to treat chronic illnesses and from conducting its attempt to disparage allopathy.
- The Bench noted, citing sections of the Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 (DMR&OA) and its Rules, that Patanjali's advertisements portray its products to consumers as a "permanent relief," which is "misleading" and "a violation of the law."

Advertising Standards in India

Legislation:

- The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954.

Primarily aims to regulate advertisements that promote drugs and remedies with dubious or miraculous claims.

- **Regulation:** Prohibits advertisements that claim to cure certain diseases or conditions listed in the Act.
- **Scope:** Covers drugs, remedies, and treatments for human use that are advertised in a misleading or false manner.
- **Penalties:** Imposes fines and imprisonment for violations, ensuring stringent measures against misleading advertisements.
- **Exceptions:** Allows advertisements for drugs approved by regulatory authorities under specific conditions.

- **Enforcement:** Governed by the Central Government and State Governments, with authorities empowered to take legal action against offenders.
- **Purpose:** Protects public health by curbing false claims in advertising related to drugs and remedies, ensuring consumer safety.
- **Cable Television Networks (Regulation) Act, 1995** (likely a typo for 1995): Regulates cable television networks, potentially including advertising practices within that medium.
- **Press Council of India Act, 1978:** Maintains ethical standards in print media, likely including advertising.
- **Cable Television Networks (Amendment) Rules, 2006:** Updates regulations for cable TV networks, possibly including advertising content.

Self-Regulation:

- **Advertising Standards Council of India (ASCI) (1985):**
 - **ASCI (1985):** Non-statutory body promoting ethical advertising in India.
 - **ASCI Code:** Sets high standards for truthfulness, decency, fair competition, and social responsibility in advertising.
 - **Protects Consumers:** Focuses on preventing misleading or harmful ads, especially for vulnerable audiences like children.
 - **Global Reach:** Applies to all ads targeting Indian consumers, regardless of their origin.
 - **Self-Regulation & Education:** Encourages ethical practices through industry collaboration and consumer awareness initiatives.

Consumer Protection:

- **Central Consumer Protection Authority (CCPA) Guidelines (2022):** Issued by the Department of Consumer Affairs, these guidelines specifically target misleading advertisements and endorsements. Their objective is to protect consumers from being deceived or exploited by such advertising.

Conclusion

Self-declaration in food and health advertising can bolster transparency if strictly enforced. Clear guidelines and vigilant monitoring are crucial to uphold truthful claims, fostering consumer trust and safety in these sectors.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding guidelines for prevention of misleading advertisements and endorsements for Misleading Advertisements, 2022:

1. Central Consumer Protection Authority (CCPA) can enforce fines up to 10 lakh rupees for endorsers for their first violation of guidelines

2. Endorsers must verify claims and disclose affiliation before endorsing products
3. Endorsers can face possible endorsement ban of 3 years for violation of guidelines

How many of the above statements are correct?

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

Answer: (c)

Descriptive Question

Q. Fake advertisements have become a prevalent issue in today's society, leading to misinformation and deception among consumers. Write in brief about advertising standards in India and suggest measures to improve the same. [10 Marks] [150 words]

LOK ADALATS

Why in News: The special Lok Adalat will be organised in the 75th year of the establishment of the Supreme Court, which came into existence on January 26, 1950, with the coming into force of the Constitution.

Key details: Lok Adalats

- **People's Court:** Popularly known as People's court.
- **History:** The first Lok Adalat was held in Junagadh, Gujarat, in 1982.
- **Legal Status:** Statutory body established under the Legal Services Authorities Act, 1987.
- **Amendment:** Act amended in 2002 to create permanent Lok Adalats for public utility services, following principles of natural justice.
- **Procedures:** Not bound by the Code of Civil Procedure (1908) or the Indian Evidence Act (1872).
- **Powers:** Holds the same powers as a civil court under the Code of Civil Procedure (1908).
- **Decisions:** Rulings are final and binding with no appeals allowed.

Cases Handled

- Pending cases in any court.
- Disputes not yet filed in court but likely to be.
- **Examples of Cases:** Matrimonial disputes, property disputes, motor accident claims, land acquisition disputes, etc.

Other Dispute Settlement Mechanisms available in India

- **Arbitration:** Binding decision by a neutral third party

(arbitrator) chosen by the disputing parties. The arbitrator's decision is final and enforceable by court.

- **Conciliation:** A third-party conciliator facilitates discussion and helps parties reach a mutually agreeable solution. Conciliator has no decision-making power.
- **Mediation:** Guides communication and negotiation to find a solution acceptable to both. The mediator doesn't impose a solution.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to Lok Adalats, which one of the following statements is correct?

- (a) Lok Adalats have the jurisdiction to settle the matters at pre-litigate stage and not those matters pending before any court.
 (b) Lok Adalats can deal with matters which are civil and not criminal in nature.
 (c) Every Lok Adalat consists of either serving or retired judicial officers only or not any other person
 (d) None of the statement given above is correct.

Answer: (d)

COMMITTEE OF PRIVILEGE

Why in News: The Privileges Committee of the Rajya Sabha on Thursday held 12 opposition MPs, guilty of misconduct for disrupting House proceedings last August and cautioned them to desist from such behaviour in future.

Parliamentary Privilege

Parliamentary privilege is the sum of the peculiar rights enjoyed by each House collectively as a constituent part of Parliament and by members of each House individually, without which they could not discharge their functions, efficiently and effectively, and which exceed those possessed by other bodies or individuals.

Breach of Privilege

When any of these rights and immunities, both of the members, individually, and of the assembly in its collective capacity which are known by the general name of privileges, are disregarded or denied by any individual or authority, the offence is called a breach of privilege, and is punishable under the law of Parliament.

Constitutional Provisions

Articles 105 and 194 of the Constitution deal with the powers, privileges and immunities of Members of Parliament/State Legislatures and their House, Members and Committees.

Committee of Privilege

The Committee examines every question of privilege referred to it either by the House or by the Speaker/Chairman and determines with reference to the facts of each case whether a breach of privilege is involved and, if so, the nature of the breach, the circumstances leading to it and makes such recommendations as it deems fit.

There is a separate Committee of Privilege for both the Lok Sabha and the Rajya Sabha.

Rajya Sabha	Lok Sabha
10 Members	15 Members
Members nominated by the Chairman of Rajya Sabha	Members nominated by the Speaker of Lok Sabha
Chairman of the committee is appointed by the Chairman (RS) from amongst the members.	Chairman of the committee is appointed by the Speaker from amongst the members.
No fixed tenure. Continue in office till reconstituted.	No fixed tenure. Can continue in office till reconstituted.
Quorum - 5	

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding to committee of privilege:

1. It consists of members from both the houses of parliament.
2. Its membership includes 5 members from Rajya Sabha and 10 members from Lok Sabha.
3. The members of committee of privilege are nominated by President of India.

How many of the above statements are correct?

(a) Only one (b) Only two

(c) All three (d) None

(d) Answer

Descriptive Question

Q. Explain the composition and functions of the Committee of Privileges in the Indian Parliament. How does it ensure the protection of parliamentary privileges [10 Marks] [150 words]

MERCY PETITION

Why in News: President has turned down the mercy petition of Mohammed Arif, a Pakistani national and a member of the Lashkar-e-Taiba who was sentenced to death in the December 2000 Red Fort attack.

Key details

- The President of India can receive a mercy petition under Article 72 of the Constitution, and the Governor of a state can receive one under Article 161.
- The purpose of a mercy petition is to ask the state head for mercy and to lessen the severity of a punishment.

Constitutional provisions

- **Article 72:** This empowers the President of India to grant pardons, reprieves, respites, or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence where the punishment is by a court martial or death sentence.
- This power is exercised by the President after consulting with the Council of Ministers.
- Similarly, Article 161 confers pardoning powers on the governor, but these do not extend to death sentences. This power is also exercised after consulting with the Council of Ministers.

Legal provisions and guidelines on mercy petitions in India

- **Prison Rules and Guidelines:** Each state in India has its own Prison Rules that outline procedures and guidelines for the submission, processing, and consideration.
- The appropriate State government under Section 432 of the Criminal Procedure Code, 1973 (CrPC) may remit the whole or part of the punishment to which a convict has been sentenced.
- The Bharatiya Nagarik Suraksha Sanhita (BNSS) 2023, the proposed replacement for the Criminal Procedure Code (CrPC), contains a new provision on mercy petitions.

Landmark judgements on Mercy

- **Maru Ram v. Union of India (1981):** While deciding mercy petitions under Article 72, the President must act on the advice of the council of ministers.
- **Dhananjay Chatterjee v State of West Bengal (1994):** Clarified that the power to grant pardons under Articles 72 and 161 rests with the Central and State Governments, not the President or Governor acting independently.
- **Kehar Singh v. Union of India (1988):** Reiterated that the power to grant pardon under Article 72 is discretionary and not a right guaranteed to the petitioner.
- The Supreme Court in **Laxman Naskar versus Union of India (2000)** had laid down five grounds on which remission is to be considered.
- The Supreme Court in **Sangeet versus State of Haryana (2012)** had held that a convict serving life imprisonment

does not have a right to be prematurely released on completion of 14 years in jail

- **State of U.P. v. Shatrugan Chauhan (2014):** The Supreme Court ruled that courts may commute death sentences if they take excessively long to decide on mercy petitions.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements with reference to the mercy petitions in India:

1. The President of India may grant pardons, reprieves, respites, or remissions of punishment where the punishment is death sentence.
2. Each state in India has its own Prison Rules to guide governor to take decisions on mercy petitions
3. President's power to grant pardon under Article 72 is exercised on the advice of the Council of Ministers
4. Mercy petitions may be granted by the National Parole Board in accordance with the Criminal Records Act.

Which of the statements given above is/are correct?

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

Answer: (b)

LIVING WILL AND PASSIVE EUTHANESIA

Why in News: Justice M S Sonak, who serves on the Goa Bench of the Bombay High Court, on Friday became the first person in Goa to register a “living will”.

Key Details

- **Passive euthanasia** refers to withdrawing life support or treatment that is essential to keep a terminally ill person alive.
- The Supreme Court of India approved the practice of passive euthanasia in 2018 [Common Cause vs. Union of India], but only if the patient had a “living will,”
- In the event that an individual lacks a living will, family members may ask the High Court to allow passive euthanasia.

Evolution of Euthanasia in India

- **1994 (P Rathinam vs Union Of India):** Supreme Court strikes down Section 309 of the IPC criminalizing attempted suicide, calling it “cruel and irrational.” This implies a potential right to die, but not explicitly for euthanasia

- **1996 (Gian Kaur vs The State Of Punjab):** The right to life (Article 21) doesn’t include the right to die, and euthanasia(active+passive) requires legislation.
- **2006 (Law Commission Report 196th):** doctors following a competent patient’s instructions to withhold / withdraw treatment. This doesn’t violate professional duty and isn’t considered attempted suicide.
- **2008 (Law Commission Report 241st):** proposes legislation for passive euthanasia and drafts a bill, recognizing a patient’s right to refuse treatment.
- **2011 (Aruna Ramchandra Shanbaug vs Union Of India & Ors):** allows passive euthanasia for terminally ill or permanently vegetative patients with guidelines, differentiating between active and passive euthanasia.

Euthanasia in Other Countries

1	Netherlands, Luxembourg, and Belgium (Most Permissive) Allow both euthanasia (doctor administering lethal medication) and assisted suicide (doctor providing means for self-administration).
2	Switzerland Permits assisted suicide with a doctor present. The patient must be of sound mind and capable of taking their own life. Euthanasia remains illegal.
3	Canada Announced plans to legalize euthanasia and assisted suicide for mentally ill patients by March 2023.
4	United States- State-by-State Approach Euthanasia, also known as physician-assisted suicide (PAS), is legal with specific guidelines in some states like Washington, Oregon, and Montana. Other states completely ban euthanasia/PAS.
5	United Kingdom has Strict Prohibition Considers both euthanasia and assisted suicide illegal, equating them to manslaughter.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Euthanasia is the practice of ending the life of a patient to limit the patient's suffering
2. Passive euthanasia involves withdrawing or withholding life-sustaining treatment
3. The Supreme Court of India has legalised both passive and active euthanasia

Which of the statements given above is/are correct?

- (a) 1 and 2 only (b) 2 and 3 only
 (c) 1, 2 and 3 only (d) None of above

(a) Answer:

QUALITY COUNCIL OF INDIA (QCI)

Why in News? Quality Council Of India Celebrates World Accreditation Day Across More Than 20 Cities In India.

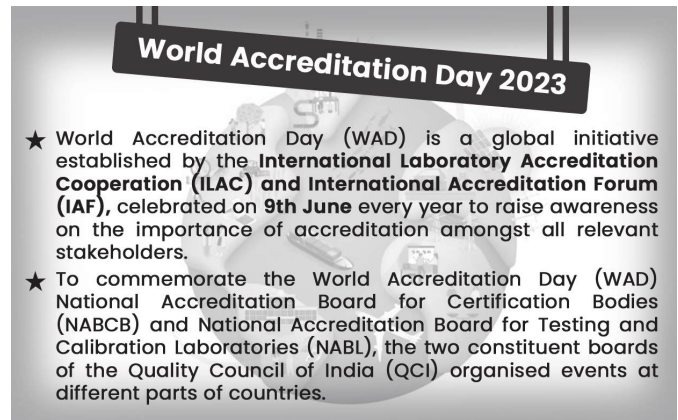
Quality Council of India

- An **autonomous body** set up by **Ministry of Commerce and Industry**.
- Quality Council of India (QCI) was established as a National body for Accreditation on recommendations of Expert Mission of EU after consultations in Inter-ministerial Task Force, Committee of Secretaries and Group of Ministers through a Cabinet decision in 1996.
- QCI was set up through a **PPP model** as an independent autonomous organisation with the support of **Government of India** and the **Indian Industry** represented by the **three premier industry associations**:
 - Associated Chambers of Commerce and Industry of India (ASSOCHAM)
 - Confederation of Indian Industry (CII)
 - Federation of Indian Chambers of Commerce and Industry (FICCI)
- QCI is a **non-profit organisation** registered under the **Societies Registration Act XXI of 1860**.
- **Mission**
 - To lead nationwide quality movement in India by involving all stakeholders for emphasis on adherence to quality standards in all spheres of activities primarily for promoting and protecting interests of the nation and its citizens.
- **Role**
 - QCI has been established to create a mechanism for independent third party assessment of products, services and processes.
 - It plays a pivotal role at the national level in propagating, adoption and adherence to quality standards in all important spheres of activities including education, healthcare, environment

protection, governance, social sectors, infrastructure sector and such other areas of organised activities that have significant bearing in improving the quality of life and wellbeing of the citizens of India.

• Governance

- QCI is governed by a Council of 39 members including the Chairperson and Secretary General. The Council has an equal representation of Government, Industry and other Stakeholders.
- **Chairperson** of the council is **nominated by the Prime Minister of India**.



EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about the Quality Council of India (QCI):

1. QCI is an autonomous body set up by the Ministry of Commerce and Industry.
2. QCI has been established to create a mechanism for independent third party assessment of products, services and processes.
3. Prime Minister of India is Chairperson of QCI.

How many of the above statements are correct?

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

(a) Answer: (b) 1 and 2

Descriptive Question

Q. Discuss the role of the Quality Council of India (QCI) in enhancing the quality standards across various sectors in India [10 Marks] [150 words]

ARTEMIS ACCORDS

Why in News: Recently, Sweden and Slovenia joined the Artemis Accords, 2020 which are non-binding guidelines for human settlement on the Moon.

Key Details

- **Aim of the Accords:** It contains a set of principles and guidelines for the civil exploration and use of the Moon, Mars, comets and asteroids was introduced in 2020 by NASA.
- **Signatories:** Artemis Accords signatories as of June 2024 are: Angola, Argentina, Armenia, Australia, Bahrain, Belgium, Brazil, Bulgaria, Canada, Colombia, Czech Republic, Ecuador, France, Germany, Greece, Iceland, India, Israel, Italy, Japan, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Nigeria, Peru, Poland, the Republic of Korea, Romania, Rwanda, Saudi Arabia, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, the United Arab Emirates, the United Kingdom, the United States, and Uruguay. Slovakia and Armenia were the 42nd and 43rd countries respectively. However, China and Russia have not signed it.
- **Artemis Accord is a set of non-binding guidelines that support the Artemis program.** It enlists key principles for peaceful and cooperative space exploration:
 - **International Rule Based Order**
 - ◆ **Upholding Existing Treaties:** Principles set in 1967's Outer Space Treaty, Rescue and Return Agreement of 1968, 1972's Liability Convention and 1975's Registration Convention to be followed.
 - ◆ **Peaceful Exploration of Space:** In line with international law.
 - ◆ **Helping in Need:** There's a commitment to assist astronauts and space personnel in emergencies.
 - **Research Collaboration**
 - ◆ **Transparency:** Signatories agree to transparency, sharing scientific discoveries openly.
 - ◆ **Interoperability:** Nations will develop compatible systems to ensure safety and sustainability in space.
 - ◆ **Safety Zones:** The Accords aim to prevent

harmful interference between space activities and establish safety zones.

➤ Responsible use

- ◆ **Registration of Space Objects:** Agreement on registering spacecraft and other objects to avoid collisions.
- ◆ **Preserving Heritage:** Signatories are committed to preserving historic sites and artefacts found in space.
- ◆ **Utilizing Resources:** Space resource exploration is recognized, but transparency to the international community is required.
- ◆ **Orbital Debris Management:** Planning for safe disposal of space debris and minimizing its creation is a priority.

- **The US Artemis Program** is a renaming of several earlier activities NASA was already undertaking to return humans to the moon. The program is named after the twin sister of Apollo and the Greek goddess of the moon.
 - It includes missions in orbit, on the surface, and even underground.
 - It aims to establish a sustainable human presence on the Moon by the end of the decade.
 - It aims to setup a '**Lunar Gateway Station**' which will be a multipurpose outpost orbiting the Moon. It is being created in collaboration by NASA (USA), ESA (European Union), JAXA (Japan) and CSA (Canada).
 - The program also studies special locations called Lagrange points in the Earth-Moon system.
 - **Missions under Artemis Program:**
 - ◆ Artemis I: Orion spacecraft (2022) orbited the Moon and returned.
 - ◆ Artemis II: Scheduled for September 2025, this mission will be the first crewed mission around the moon and will include the first woman and person of color to land on the moon.
 - ◆ Artemis III: Scheduled for September 2026, this mission will land astronauts near the lunar South Pole.
 - ◆ Artemis IV: Scheduled for 2028, this will be the first mission to the Gateway lunar space station.

Relevance of the Artemis Accord For India

- **Information exchange** and access to NASA's Artemis program provide valuable insights for India's own human spaceflight mission, Gaganyaan

- **Collaborative Research:** It opens up space for sharing knowledge with various signatories, joint research and exchange of technology.
 - As India looks towards Chandrayaan 4, Artemis Accords hold key significance in ensuring a successful mission and collection of samples from the Lunar surface for further research.
 - **Improved Relations with US:** These accords signal the improving relations with US
 - **Indian Space Economy:** Improved access for Indian private players in space commercialisation leading to opening up of new markets.

Limitations and Challenges of the Artemis Accord

- **Delicate Balance:** The Artemis Programme camp up parallel to the Chinese-Russian plan for an ‘International Lunar Research Station’ (ILRS) which also seeks to setup a permanent station and lunar constellations. As India has joined the Artemis Accord, it puts it on the other side of its long standing space partner, Russia. India must strike a delicate balance.
- **A Mere Political Alignment:** It is not a multilateral treaty or contract setting out rules for space exploration. It is merely a non-binding bilateral agreement on political lines between the partner countries.
- **Does not Confirm Participation in Program:** Signing of the Accord does not mean an automatic partnership in the Artemis Lunar Space Programme. It just signifies a condonation of the US led programme for lunar exploration and a shared worldview on principles.
- **Variance between Artemis Accords and Outer Space Treaty:**
 - The Artemis Accords say countries can mine Moon resources, but don’t own them like the Outer Space Treaty. However, this creates a “first come, first served” situation until clearer rules are made.
 - Creation of ‘safety zones’ by one country to the exclusion of other, even if temporarily, could violate the principle of non-appropriation.

Other Outer Space Treaties:

- **Outer Space Treaty, 1967:** It is a binding agreement for peaceful use of space which India signed in 1967 but ratified in 1982.
 - It states that all countries can explore and use space freely, however no country can claim ownership of space.
 - Further, companies are liable for any damage caused in space and must avoid contaminating space.
- **Moon Agreement of 1979:** The ‘Agreement Governing the Activities of States on the Moon and Other Celestial Bodies’ bans military bases, weapons testing, and military exercises on the Moon. However, it permits use of military personnel for scientific research and other such peaceful purposes. India has signed it but not ratified it yet. It has not been ratified by the US, Russia or China and has only 17 parties, thus having little relevance in international law.

- **Prevention of an Arms Race in Outer Space (PAROS),** UNGA Resolution 1981: It bans weaponisation of space. It was proposed during the cold war. India was a cosponsor of this resolution.

India’s Space Collaborations

- **NISAR:** NASA-ISRO Radar Mission to Provide Dynamic View of Forests, Wetlands.
- **International Collaboration Training Astronauts:** An Indian astronaut will be trained for a mission to the International Space Station (ISS) in 2024 by NASA.
 - Russia is providing crucial training for India’s first crewed mission to space, Gaganyaan.
- **Lunar Polar Exploration Mission (LUPEX):** India and Japan mission to confirm the presence and quantity of water ice on the Moon.
- **Thermal infraRed Imaging Satellite for High resolution Natural resource Assessment (TRISHNA) Mission:** CNES (French Space Agency) and ISRO will use a Thermal Infrared Imaging Satellite to monitor surface temperature and water management on a global scale.

Lunar Missions in News

Many other lunar missions are being undertaken separately by various countries, and are not part of Artemis Accords. They aim to undertake research and develop scientific technology to exploit lunar resources.

- **Chang-e 6:** China’s mission recently became the first to return with samples from the far side of the moon in June 2024.
- **Chandrayaan-3:** India’s mission became the first to land on the south side of the moon in August 2023.
- **Smart Lander for Investigating Moon (SLIM):** Japan’s lander mission landed on the moon in September 2023 to demonstrate precision landing and conduct scientific observations.

Challenges in governing Outer Space as a Global Commons

The concept of outer space as a global commons means it’s a shared resource for all nations to use for the collective benefit of humanity.

- International safeguards and self restraint from countries is required to ensure careful management of these resources for:
 - **Sustainable Use:** Resources should be utilised responsibly to avoid depletion.
 - **Fair Sharing:** Benefits should be distributed equitably among all nations.

Way Forward

- **Advocate for Binding Agreement:** India can push for the Artemis Accords to become a formal treaty, ensuring stronger international commitment.
- **Increase Space Budget:** Securing increased government funding is crucial for utilising collaborations like Artemis.
- **Foster Collaboration:** Overcoming internal resistance to international tie-ups and entering more such accords will unlock knowledge sharing and resource optimization.
- **Streamline Regulations:** Simplifying regulations will

empower Indian private companies to participate in Artemis, boosting innovation and growth.

- **Develop Space Law:** Clear legislation is needed to promote responsible space exploration and a thriving space economy in India.

Conclusion

Artemis will facilitate and exponentially boost research and study of the Moon due to its collaborative nature. The growing number of nations endorsing the Artemis Accords strengthens their position as the go-to standards for space mining, safety zones, and heritage protection. As more countries rely on the Accords for their space activities, they solidify the belief that these are the applicable laws. Though not international law yet, the Accords are on track to become a widely accepted custom.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. India is a founding member of the Artemis Accords.
2. Artemis Accord, like the Outer Space Treaty is a binding agreement for peaceful use of space.
3. Chang-e 6 became the first Lunar mission to land on the southside of the moon.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) All of the above (d) None

(d):Answer

Descriptive Question

How is the Government of India utilising international collaborations like Artemis Accord to boost its space exploration and commercialisation? [15 marks][250 words]

eMIGRATE PROJECT

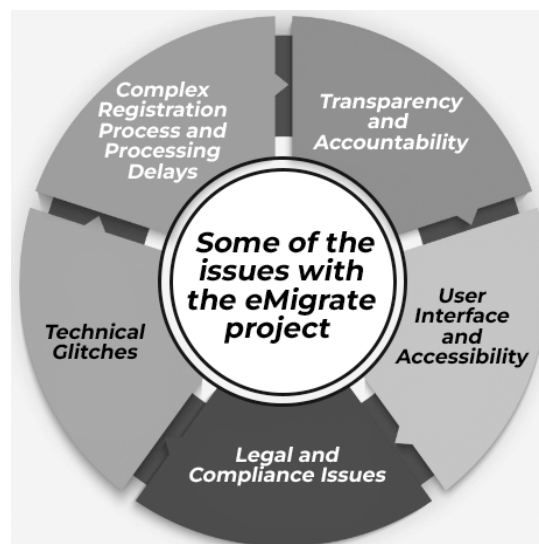
Why in News: Agreement to provide emigrate services through common services centres is signed by MEA (Ministry of external affairs), MEITY (Ministry of Electronics & Information Technology), and CSC (Common Service Centre) E-Governance Services India Ltd.

About e Migrate project

- **Aim:** It is being done primarily to support blue-collar workers who are leaving for countries where an immigration check is required (ECR).
- **Objective:** Initiative was designed to alleviate problems encountered by migrant workers by streamlining the emigration process online and uniting international employers, insurance providers, and regulated recruitment agencies on a single platform.
- **Office:** The “e-Migrate” system functions under the

control of the Protector General of Emigrants who exercises directly or through the Protector of Emigrants.

- **Legal provision:** The powers and responsibilities under the Emigration Act, 1983 through the system, to ensure protection of Indian abroad, for overseas employment.
- **Technology adoption:** In accordance with this MoU, the **MEA eMigrate Portal** will be integrated with the CSC portal to offer the following eMigrate services to people via CSCs.
 - **Registration:** Enable candidates to **register** on the eMigrate portal by using CSCs.



- **Processing:** Enabling applicants to **upload and process** the necessary documents on the eMigrate site with the help of CSCs.
- **Assistance:** **Assist in facilitating and supporting applicants** who have enrolled on the CSC-facilitated eMigrate portal to schedule medical appointments and other services.
- **Awareness:** **Spreading knowledge** about eMigrate services among Indian nationals.

About Common Service Centre (CSC)

Ministry: The Ministry of Electronics and IT

These are the front-end service delivery centers where, especially in rural and remotest parts of the country, citizens could get digital services.

Monitoring and Implementation of CSC: CSC e- Governance Services India Limited is a Special Purpose Vehicle (CSC SPV).

The CSCs are essential to the goal of **Digital India**, and aims to cater to manifold social welfare programs, financial services, educational programs, courses related to skill development, healthcare, agricultural services, and digital literacy, among others.

So far, total 30,647 Primary Agriculture Cooperative Societies have also started providing CSC services in India.

Migration Trend of Indian Workers Abroad.

- **Historically dominant states:** middle-class and upper-class states in the nation's north, west, and south have made up the majority of Indian emigrants who have left the country. Over time, the country's worker migration pattern shifted in favour of West Bengal, Bihar, and Uttar Pradesh in the east.
- **In USA and Europe:** The skilled workforce is concentrated as per historical trend but GCC countries and ASEAN countries too now host large numbers of Indian skilled and semi-skilled workers. 80% of the men are skilled in MENA countries.
- **Gulf countries:** Data from the Indian government indicates that as of 2021, 8.9 million Indian migrants were living in the Gulf countries. Over two million migrants from Kerala, a state in the South, are still living overseas, mostly in the Gulf states.
 - Six Gulf nations are home to 56% of NRIs and 25% of abroad Indians (UAE, Saudi Arabia, Kuwait, Qatar, Oman, and Bahrain).
- **Remittances:** Eventually Indians workers abroad send huge remittances back home. India became the first nation to ever receive remittances worth over \$111 billion in 2022 as per UN.

Laws/Regulatory framework for Indian Overseas Worker

- **The Emigration Act of India, 1983:** Offers the legal framework for Indian workers to emigrate for temporary jobs abroad.
- **Recruitment agents' registration:** In order to prevent deceit, the act also required recruitment agents to register and be certified by the Ministry of External Affairs (MEA), Protector General of Emigrants.
- **Insurance:** The Government of India ensures an insurance cover of about \$12,000 and registered recruitment agents are duty-bound to rescue workers in the event the latter are faced with any problem.
- **Emigration Check Required Program:** Workers travelling to 18 countries, such as Afghanistan, Bahrain, Indonesia, Iraq, Jordan, the Kingdom of Saudi Arabia, Kuwait, Lebanon, etc., are covered by passports under the ECR.
- **Registration:** Employees traveling to areas of conflict must register on the "e-migrate" portal run by the Ministry of External Affairs.
- **Pravasi Bhartiya Sahayata Kendra (PBSK)**
- **Toll Free Helplines:** Missions have set up Toll Free Helplines and 24x7 Helplines for Indian workers to seek assistance.
- **Dedicated Labor / Community Welfare wings:** They have been established in Indian Missions and Posts in the nations with high concentrations of Indian workers.

International Rules for migrant workers

- **Migration for Employment Convention (Revised) 1949 (No. 97):** It safeguards migrant workers' and their families' rights over native-born workers .
- **Convention on the Migrant Workers (Supplementary Provisions), 1975 (No. 143):** It addresses treatment of migrant workers, equality of opportunity, and migration under abusive conditions.
- Both of these **International Labor Organization-managed** conventions.

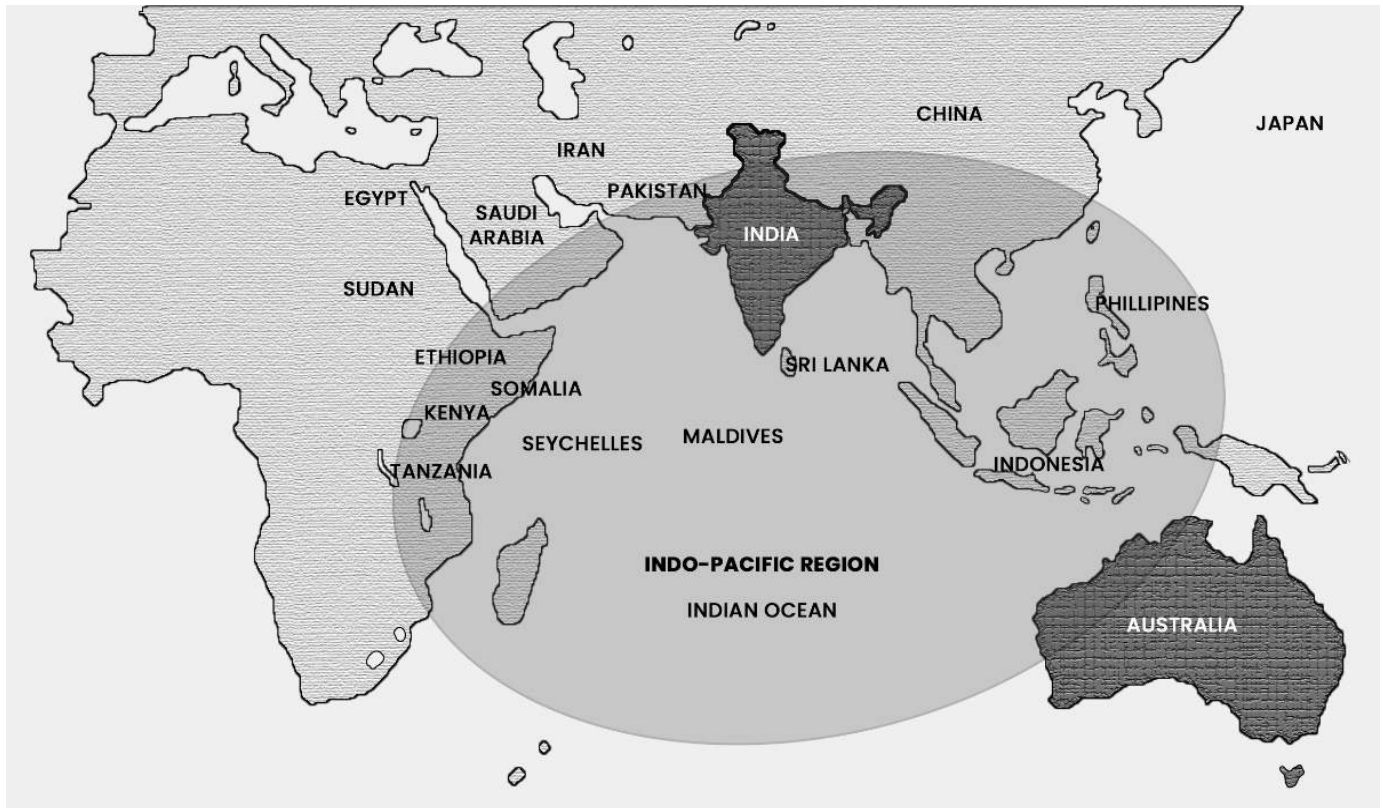
countries?

- **Women friendly policies:** The number of female workers from India has over time been very highly likely to increase in the countries that make up the Middle East and North Africa regional, particularly within the hospitality and construction sectors, by over 71 percent in the blue-collar workforce, due to the UAE's women-friendly regulations.
- **Presence of fellow Indians:** It help them finding jobs due to Indian connections and also provide them with psychological security. 35 lakh women from India are working in the Middle East, which is expected to reach 60 lakhs in next 2-3 years.
- **High earning potential abroad:** The ten highest salary-paying nations in the world include Qatar and UAE; India is ranked 65th.
- **Insufficient opportunities in India:** This is evidenced by the fact that during the January to march 2023, the unemployment rate in urban areas for those aged 15 years and over was 8.2 percent according to National Sample Survey Office. Which is way more than the threshold of ILO'S 5%.
- **Lack of job opportunities for the skilled workforce of women:** The National Sample Survey Office (NSSO) reports that one reason for unemployment is lack of jobs according to qualifications. i.e. nurses, hospitality, tourism industry.

Challenges and Vulnerability of Indian Migrant Workforce Abroad

- **Violation of local labour laws:** Non-fulfilment of contractual obligations including passport retention by the respective sponsors.
- **Discrimination:** over native-born workers racially, ethnically, religiously etc.
- **Access to social security:** As per the international conventions.
- **Persistent issues:** Poor working conditions, negation of labour rights, absence of a proper grievance redress mechanisms, limited access to a transparent judicial system, etc.
- **Workplace related issues:** Ill treatment at the work place, non-payment of salaries/ wages etc resulting in hardship of the Indian labourers. Data from the **Centre for Indian Migrant Studies (CIMS)** shows that 397 returnees during the COVID-19 pandemic were denied ₹62.58 crore in total, showing glaring pay theft.
- **Human trafficking:** Indian engineers from Tamil Nadu have reportedly been trafficked to Myanmar to work for cryptocurrency scammers, and Indian nurses have been trafficked to the UAE for fictitious job offers.
- **Kafala system in GCC countries:** The Kafala system of sponsorship, which governs the interaction between migrant labourers and their employers, has consistently

Why is there an increase in Indian women working in Gulf



Economic:

- Boosts trade, investment, and economic prosperity through collaboration, to keep the strategic sea routes in the Indo-Pacific.
- Offers alternative partnerships to reduce dependence on China and diversify the economic landscape.
- Fosters innovation and technology advancement through joint research and development. Eg. (iCET).

Strategic & Military:

- Ensures freedom of navigation in the Indo-Pacific, crucial for global trade and regional security.
- Strengthens regional security architecture through cooperation on maritime issues and disaster relief.
- Enhances interoperability between QUAD forces for a coordinated response to security threats. Eg. Malabar exercise.
- Deterrence to the Chinese aggressive policies in the Indo-Pacific.

Challenges to QUAD

- **Balancing National Interests:** Coordinating the strategic goals of four countries with varying priorities can be complex.
- **Internal Political Differences:** Domestic political considerations and potential shifts in leadership can affect member countries' commitment to the QUAD.

The QUAD: Asian NATO?

- 01 China's View**
Calls the QUAD an "Asian NATO," implying a military alliance against China. Not true because, unlike NATO, the QUAD lacks a formal mutual defence pact.
- 02 QUAD Members' View**
Deny any intention to form an Asian NATO. Emphasise goals of deepening economic, diplomatic, and military ties. (Implicitly countering Chinese aggression)
- 03 Official Stance**
The March 2021 "Spirit of the Quad" declaration highlights shared goals for

 - Free and open Indo-Pacific region
 - Region based on democratic values
 - Absence of coercion
- 04**
The QUAD focuses on cooperation, not a formal military alliance like NATO.
- 05**
Whether it acts as a counterweight to China's influence remains to be seen.

- **Bureaucratic Hurdles:** Turning strategic goals into concrete actions can be slowed down by bureaucratic inefficiencies within each member nation.

- **Long-Term Commitment:** Maintaining a sustained level of engagement and cooperation over time can be challenging.
- **Military Alliance Concerns:** Some members, like India, are wary of being seen as a formal military alliance against China.
- **China Factor:** China views the QUAD with suspicion, potentially leading to regional tension and a potential for a “bloc mentality.”

India’s Role in the Quad

- **India’s Vision for the Quad:** Open, constructive forum for regional security and stability. India’s Ambassador to Japan, emphasised the Quad’s focus on “peace and stability in the Indo-Pacific region”.
- **Regional Economic grouping:** Not an alliance against China, but for “something positive.” The Quad’s joint statements avoid mentioning China directly and focus on areas of cooperation.
- **Wide range forum:** Addresses a wider range of issues beyond just military concerns. The Quad’s recent summit(2023) included discussions on global health, infrastructure, and climate change.
- **India’s Concerns Addressed:** Avoiding “alliance politics” to reassure Southeast Asia. This is why India likely resisted strong pronouncements against China regarding Taiwan.
- **Force of Multilateralism:** Focus on multilateralism aligns with India’s preference. The Quad statements consistently highlight support for UN initiatives.
- **Terrorism:** Quad statement acknowledges India’s neighbourhood concerns (terrorism). condemned terrorism and mentioned the 26/11 Mumbai attacks, a significant concern for India.

India’s Strategic Advantages in Quad

- **Indian Foreign policy narratives:** Normatively shaping the Quad’s framework. India’s emphasis on openness, transparency, and a multipolar Indo-Pacific reflects in the Quad’s approach.
- **Cooperation in various areas:** Expanding focus areas beyond just security. in areas like climate change and infrastructure broadens the Quad’s agenda.
- **Counter China measures:** China’s regional dominance through a rules-based order. (The Quad’s promotion of international law and freedom of navigation challenges China’s assertive actions.)

Way Forward

- **Expanding Focus Areas:** The Quad is moving beyond military cooperation. The recent summit included discussions on: Global health, Climate change, Critical technologies.
- **Deepening Institutional Cooperation:** The Quad is

progressing from informal meetings to a more structured framework. eg. Expert working groups, Established for each focus area to drive collaboration (e.g., health, technology).

- **Delivering Tangible Results:** The Quad needs to showcase its effectiveness through concrete actions such as
- **More Joint maritime exercises:** Demonstrating commitment to freedom of navigation in the Indo-Pacific.
- **Infrastructure development projects:** Delivering economic benefits and strengthening regional connectivity (e.g., Indo-Pacific connectivity corridors).
- **Balancing Interests and Managing Disagreements:** The Quad members have varying priorities, there should be a common ground to work upon in future.
- **Addressing the China Challenge:** Promoting a rules-based order: Countering China’s disregard for international law in the South China Sea.

Conclusion

Regarding QUAD, what our foreign minister said is true, “We are democracies, we are market economies, we have technology, we have innovation, we have enterprise. This is the future.” - S. Jaishankar.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which of the following groups of countries are members of QUAD ?
- India, Australia, USA, Japan
 - India, China, Japan, Australia
 - USA, Canada, India, Japan
 - India, Brazil, South Africa, Japan

(a) : Answer

Mains Question

- Q. Discuss the significance of India’s role in the QUAD alliance and its impact on the Indo-Pacific region. [10 Marks] [150 Words]

WTO - DISPUTE SETTLEMENT MECHANISM

Why in News: WTO members recently held the first formal meeting on dispute settlement reform at Heads of Delegation level.

Key Details

- **Challenge:** The World Trade Organization’s (WTO) dispute settlement system, particularly the Appellate Body, faces challenges and concerns.
- **Goal:** Establish a fully functional and accessible dispute settlement system for all WTO members by 2024.
- **Progress:**

- Informal discussions on reform began in February 2023.
- A formal process started in April 2023 with an appointed facilitator (Ambassador Dwarka-Canabady) for open and inclusive discussions.
- Experts will handle technical work, while member delegations provide political guidance.
- Co-convenors were appointed for specific reform areas: appeal/review, accessibility, and other issues.
- **Recent Meeting:**
 - 46 delegations participated in discussions on two key questions:
 - ◆ Interests and ideas for appeal/review mechanism.
 - ◆ Steps to improve accessibility for all members.
- **Next Steps:**
 - The facilitator will meet with co-convenors to plan further discussions.
 - The next formal meeting for Heads of Delegation is on June 20th, 2024.

Why Reforms Needed In WTO Dispute Settlement Mechanism

- **Broken Appellate Body:** The US blocking appointments has crippled the appeals process, creating uncertainty and delays since December 2019.
- **Slow Dispute Resolution:** Disputes with appeals take an average of 30 months to resolve, compared to 16 months without appeals. This can be costly for developing countries.
- **Overreach Concerns:** Some members, like the US, feel the Appellate Body has exceeded its authority in certain rulings, undermining the impartiality. citing examples like anti-dumping measures.
- **Limited Developing Country Access:** Developing countries initiate few disputes due to resource constraints, hindering their ability to enforce trade rights.
- **Weakened Legitimacy:** A dysfunctional system weakens the WTO's ability to uphold fair trade and resolve disputes, impacting its overall authority.

Relevance of WTO in Contemporary World

Global Trade Rules: acts as the rulebook for international trade, with over 160 countries playing by the same set of regulations. This fosters stability and predictability.

Fair Trade Disputes: When disagreements arise (e.g., one country accuses another of unfairly subsidising exports), the WTO provides a neutral forum for resolving disputes.

Trade Boosted: The WTO has played a major role in reducing trade barriers like tariffs and quotas. This has led to a significant

increase in global trade flows and economic growth for member countries.

Helping Developing Countries: WTO offers special provisions like longer timeframes for implementing trade rules. Countries like Vietnam have used WTO provisions to attract foreign investment.

Negotiating New Rules: The WTO remains a platform for countries to discuss and negotiate new trade agreements to address emerging issues like e-commerce and intellectual property rights.

Setting Global Standards: From food safety regulations to intellectual property protection.

Balancing Regional and Global Trade: The WTO framework coexists with regional trade agreements. It provides a platform for discussing how regional trade agreements can align with broader global trade rules.

Challenges In Front Of WTO

- **Unilateral Trade Actions:** Members like the US bypassing the WTO to impose tariffs (e.g., US-China trade war) weakens the multilateral trading system.
- **Evolving Trade Landscape:** The WTO struggles with new issues like e-commerce and digital trade, not well-addressed by existing frameworks.
- **Paralyzed Appellate Body:** The US blocking appointments has crippled the appeals process since December 2019.
- **Geopolitical Gridlock:** Rising tensions between major economies hinder cooperation (e.g., recent trade disputes outside WTO framework).
- **Environmental Integration:** Balancing free trade with environmental sustainability remains a challenge (e.g., difficulty incorporating green trade policies).
- **Accession Challenges:** The average time for a country to complete the accession process is **5-8 years**. Vietnam's accession negotiations lasted for **11 years** before it joined in 2007.
- **Developing Country Representation:** Developing countries account for over two-thirds of WTO membership, but they initiate a significantly **lower number of disputes** compared to developed countries (UNCTAD).
- **Special and Differential Treatment (SDT): Effectiveness,** A 2019 study by the World Trade Organization (WTO) found that the utilisation of SDT measures by developing countries remains **relatively low**.
- **Compliance and Enforcement:** The WTO relies on a consensus-based approach for implementing rulings, making it difficult to enforce decisions if a member disagrees.

Measures for Appellate Body Reform of WTO

- **Time bound appointments:** Over 120 WTO members

have publicly expressed concerns about the non-functioning Appellate Body and called for reform measures (WTO).

- **Focus on Streamlining Procedures:** Proposals from various members (including the EU) emphasise the need to reduce timelines for dispute settlement processes.
- **Addressing Developing Country Needs:**
 - The G-20 developing countries collectively represent over 60% of the WTO membership, highlighting the importance of reforms that enhance their participation (World Bank).
 - Proposals include dedicated technical assistance programs and initiatives to make the DSB more resource-efficient for developing countries.
- **Transparency and Predictability:** Proposals advocate for clearer guidelines on the Appellate Body's role and limitations to address concerns about overreach.
- **Exploring Alternative Options:** Discussions are underway on exploring voluntary mediation or arbitration mechanisms as alternatives to the traditional DSB process.

Conclusion

The WTO's dispute settlement system ensures fair resolution of trade disputes, bolstering global economic stability and fostering a future where international trade thrives under transparent, rules-based governance, benefiting economies worldwide.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the 'World Trade Organisation (WTO),' consider the following statements:

1. It is the only global international organisation dealing with the rules of trade between nations.
2. The General Council is the WTO's highest-level decision-making body.
3. The General Council also acts as the Dispute Settlement Body and as the Trade Policy Review Body.

Which of the statements given above is/are correct?

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

(c) Answer

Descriptive Question

Q. Elaborate the recent issues related to dispute settlement mechanism at WTO? To what extent policies at WTO work against the interest of emerging economies like India? [10 marks][150 words]

BRICS+

Why in News: The 10th Meeting of BRICS Environment Ministers was held in hybrid format under the Chairship of the Russian Federation on 28th June, 2024. This was the first meeting when BRICS Environment Ministers met after joining of five new BRICS members, i.e. Egypt, Ethiopia, Iran, the United Arab Emirates and Saudi Arabia.

BRICS: A Bloc of Emerging Economies

- **Origin:**
 - Coined in 2001 by economist Jim O'Neill to describe the emerging economies of Brazil, Russia, India, and China.
 - Formalised in 2006 with the first BRIC Foreign Ministers' meeting.
 - South Africa joined in 2010, forming the BRICS acronym.
- **Expansion (2024):**
 - The Johannesburg Declaration (2023) invited Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and UAE as full members from January 1, 2024.
- **BRICS+ : Post-Expansion**
 - Represented 46% of the global population.
 - Contributed 30% of the global GDP.
 - Share of global oil production will increase to 40%
 - Global merchandise trade will rise 25%
 - Global services trade will increase to 15%
 - BRICS+ member countries' share in the global forex reserves will increase by 600 bps to 45%.
 - **Meetings:** BRICS summits have been held annually since 2009.

Significance of BRICS+ as Leader of Global South

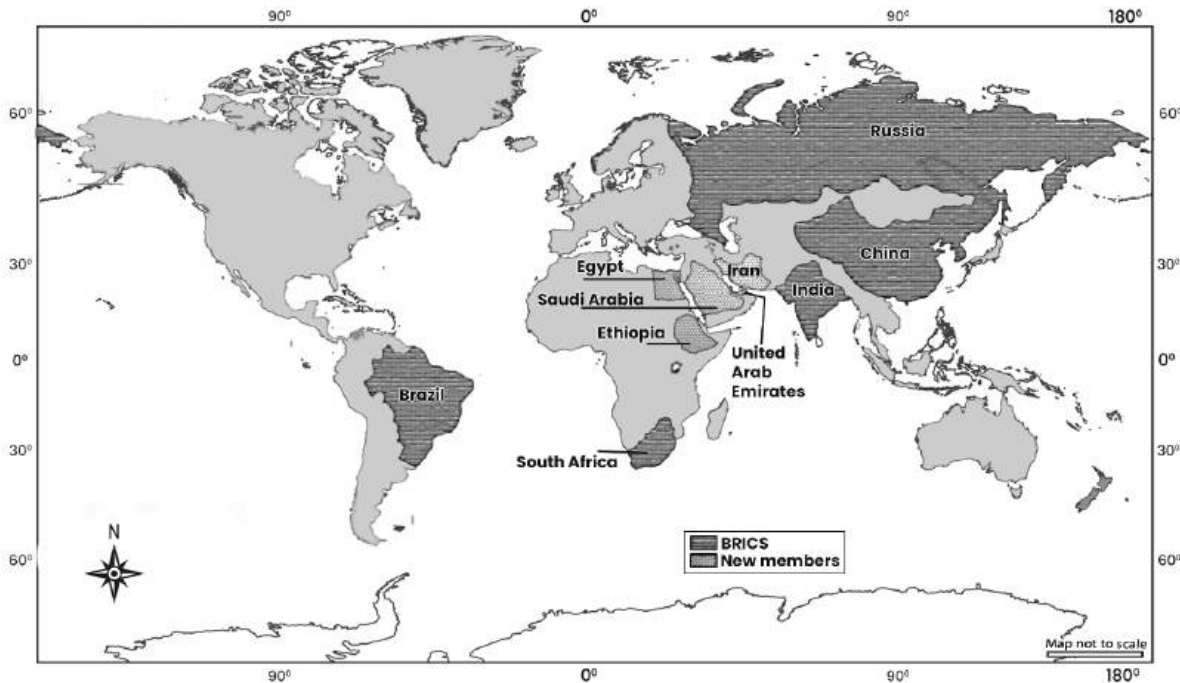
- **Economic Powerhouse:** BRICS represents a significant chunk of the global economy, accounting for: A large portion of the world's population.
- **Bright future:** A substantial share of global GDP (pre-expansion: 24%) A considerable percentage of global trade (pre-expansion: 16%)
- **Emerging Market Influence:** BRICS brings together major emerging economies with the potential to shape the future of the global economic landscape.
- **Alternative Voice:** BRICS acts as a counterpoint to established economic powers, offering a different perspective on global economic issues and development strategies.
- **Cooperation and Collaboration:** BRICS fosters cooperation among member countries in areas like trade, investment, infrastructure development, and technological innovation.
- **South-South Cooperation:** BRICS promotes collaboration

among developing countries, fostering knowledge sharing and mutual support.

- **Potential for Reform:** BRICS can push for reforms in international institutions like the World Bank and International Monetary Fund (IMF) to better reflect the interests of developing economies.
- **Alternative Development Model:** BRICS can offer an alternative development model to the traditional Western-dominated approach. This model could focus on sustainable development, social welfare, and South-South cooperation.
- **Countering Unipolarity:** The BRICS group position themselves as representatives of the multi-polar world and prefer “soft power” to the “hard power” of the uni-

polar world order. BRICS+ can act as a collective voice in a world where the balance of power is changing particularly to counterweight global north dominance in global affairs.

- **Bridge between Global south and Global North:** The Global North and the BRICS nations are participating in a number of infrastructure and investment projects, such as
 - The China-Central and Eastern European Countries Cooperation (China-CEEC Cooperation),
 - The India-Middle East-Europe Economic Corridor (IMEC), and
 - The Belt and Road Initiative (BRI).



BRICS Initiatives: Fostering Development and Cooperation

- **New Development Bank (NDB):** Established in 2014 to fund infrastructure and sustainable development projects. Approved 70 projects to date.
- **Contingent Reserve Arrangement (CRA):** Established in 2014 for financial cooperation.
 - Provides mutual support and strengthens financial stability for BRICS nations.
- **Customs Agreements:** Facilitate trade and ease transportation of goods among BRICS countries.
- **BRICS Remote Sensing Satellite Constellation:** Launched in 2021 through cooperation of space agencies.
 - Utilises existing satellites from each member for Earth observation.

BRICS+ members in Various international Organisations

Multilateral framework	BRICS+ members
International organisations/Formats	
United Nations	All members, China and Russia are also permanent members of the UN Security Council
WTO	All members, except Ethiopia and Iran
OECD	None
G7	None
G20	All members, except the United Arab Emirates and Iran, Egypt and Ethiopia through the African Union
G77	All members except Russia
Shanghai Cooperation Organisation (SCO)	Russia, China, India and Iran
Eurasian Economic Union (EAEU)	Russia

Geostrategic Significance of BRICS+ Members

- **Energy Security:** West Asian Members (Saudi Arabia, Iran):
 - **Substantial Energy Reserves:** Provide a potential alternative and diversification of energy sources for BRICS, especially for China and India.
 - **Iran's Growing Oil Production:** Highlights the importance of energy cooperation within BRICS.
- **Diversification of Energy Suppliers: Russia:** Seeks new markets for energy exports with the inclusion of new members, reducing reliance on traditional buyers.
- **Strategic Geographical Presence:**
 - **Egypt and Ethiopia: Horn of Africa and Red Sea Region:** Strategic location near crucial maritime trade routes, enhancing BRICS' geopolitical footprint.
- **Latin American Economic Influence:**
 - **Argentina: Major Latin American Economy:** Strengthens BRICS' economic influence and presence in the region.

Present Challenges in front of BRICS+

- **Economic Diversity:** BRICS nations range from high-middle-income (China) to lower-middle-income (India) economies (World Bank), making economic cooperation complex.
- **Political Differences:** Democratic (India, South Africa) vs. authoritarian (China) systems create friction on human rights and governance issues.
- **Chinese Aggressiveness:**
 - **Economic Powerhouse:** China's GDP is nearly four times larger than the next-biggest BRICS member (India) (IMF 2023 data). This economic disparity raises concerns about unequal influence within BRICS. For example, currently, China controls 62% of the Brics+ GDP while India and Africa share only 12% and 7% respectively,
- **Military Strength:** China's growing military power and biasness creates unease among some of the members, potentially hindering collective security initiatives.
- **National Interests vs. Collective Good:** For example, in 2020, disagreements over a joint statement on COVID-19 at the World Health Assembly exposed prioritisation of national interests (BBC, 2020).
- **Ongoing Concern:** Members may focus on individual diplomatic or economic agendas over BRICS' collective goals. For example, the Russia-Ukraine war.
- **Limited Track Record: Founded in 2009:** Despite over a decade of cooperation, BRICS achievements on major issues like global trade reform and some of the pressing issues like terrorism, climate change, remain modest.

Way Forward

- **Focus on Shared Interests:** BRICS should prioritise areas

of common ground, such as sustainable development, South-South cooperation, and global governance reform.

- **Balance of Power:** Mechanisms should be established to ensure all members have a voice and China doesn't dominate.
- **Concrete Action:** BRICS needs to translate its pronouncements into tangible results on issues like climate change and poverty reduction.
- **Effective Communication:** Improved communication strategies are needed to build trust and understanding among members.
- **Adapting to Change:** BRICS must remain flexible and adapt to the evolving global landscape, addressing the needs of the broader Global South.

Conclusion

"BRICS has demonstrated that emerging economies can cooperate effectively in addressing global challenges and promoting shared prosperity." Ban Ki-moon.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- | | |
|-------------|-----------------|
| 1. Qatar | 2. Bangladesh |
| 3. Ethiopia | 4. Saudi Arabia |

How many of the above are recently added members in BRICS?

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

Answer: (b) 3 and 4 only

Mains Question

Q. Discuss the significance of the BRICS+ initiative in the context of global governance. What are the potential challenges and opportunities associated with the expansion of BRICS to include new members? [15 marks][250 words]

INDIA'S NEIGHBOURHOOD POLICY

Why in News: The fact that leaders from the Indian Ocean region and the neighbouring countries were invited and present at the inauguration of the new Indian government underscores the significance New Delhi places on these nations.

Key Details

- **Presence of Neighboring and Indian Ocean Region Leaders:** Leaders from neighbouring countries and the Indian Ocean region, including Bangladesh, Sri Lanka, Maldives, Bhutan, Nepal, Mauritius, Seychelles.

- **Reaffirmation of 'Neighbourhood First' Policy and 'SAGAR' Vision:** Modi reaffirmed India's commitment to its 'Neighbourhood First' policy and 'SAGAR' vision, emphasising regional cooperation and maritime security.
- **Focus on Regional Connectivity and People-to-People Ties:** Emphasis was placed on enhancing regional connectivity and fostering closer people-to-people ties within the neighbourhood and Indian Ocean region.
- **India's Vision for 'Viksit Bharat' by 2047:** Modi outlined India's vision to achieve a developed nation status by 2047, highlighting goals for sustainable growth and prosperity.
- **Advocacy for Global South and International Engagement:** India reiterated its role in amplifying the voice of the Global South and promoting cooperation among developing nations on global platforms.
- **Inclusive Invitation to Regional Leaders:** Leaders from SAARC, BIMSTEC, Mauritius, and Kyrgyzstan were invited, demonstrating India's inclusive diplomatic outreach.

Evolution of Neighbourhood First Policy

- **Jawaharlal Nehru (1947-1964):** Nehru emphasised regional cooperation, non-alignment, and peaceful coexistence. He viewed India's neighbours within a broader Asian context, aiming for stability and peace in South Asia.
- **Indira Gandhi (1966-1977, 1980-1984):** During her tenure, India faced regional conflicts (e.g., Bangladesh Liberation War). Gandhi focused on bilateral relations, security, and economic cooperation with neighbours.
- **Inder Kumar Gujral (1997-1998):** Gujral Doctrine emphasised goodwill, non-reciprocity, and non-interference. India sought to improve ties with smaller neighbours, addressing their concerns.
- **Narendra Modi (2014-present):** Modi's NFP emphasises connectivity, trade, and people-to-people contact. Initiatives like "Act East" and "Neighborhood First" aim to strengthen regional ties and address shared challenges.

Significance of Neighbourhood First Policy for India (Immediate neighbours)

- **Geopolitical Security:**
 - **Shared Borders:** Land borders with Pakistan, Nepal, Bhutan, Bangladesh, and Myanmar necessitate close cooperation on border security and management.
 - **Regional Stability:** Instability in neighbouring countries can spill over into India, impacting security and economic activity. Refugee crisis, civil wars.
 - **Countering China:** Collaboration with neighbours helps counter China's growing influence in the Indian Ocean Region.
 - **Multilateral Leadership:** Cooperation strengthens India's leadership role for the Global South in

international organisations. Such as the WTO Agreement on Agriculture.

- **Territorial Integrity:** Neighbourly cooperation is crucial to maintain India's territorial integrity and combat separatist movements.
- **Maritime Security:** Collaboration with neighbours like Maldives and Sri Lanka bolsters maritime security against threats like piracy and terrorism. China's pearl of pearls policy.
- **Economic Interdependence:**
 - **Trade and Investment:** Neighbours are crucial trade partners, with India aiming to boost regional economic integration through initiatives like SAARC (South Asian Association for Regional Cooperation).
 - **Connectivity:** Efficient trade requires robust cross-border infrastructure for transportation and communication. BBIN road project.
 - **Shared Resources:** Management of shared resources like water rivers requires cooperation and agreements with neighbours. Indus water treaty.
- **Cultural Exchange and People-to-People Links:**
 - **Shared History and Culture:** Many cultural and religious traditions are shared between India and its neighbours. Buddhism, Language, relatives.
 - **Cross-Border Movement:** People often travel for work, education, and pilgrimage, fostering cultural exchange and understanding.
 - **Diaspora Communities:** Large Indian diaspora communities exist in neighbouring countries, strengthening cultural and economic ties.
- **Global Influence and Soft Power:**
 - **Regional Leadership:** India aspires to be a regional leader, and strong relationships with neighbours are crucial for this ambition.
 - **Development Cooperation:** India can assist neighbours in development projects, enhancing its soft power.
 - **International Image:** Stable and peaceful relations with neighbours project a positive image of India on the global stage.

Significance of India's Extended neighbourhood (East)

- **Economic Powerhouse:** Southeast Asia (SEA) is a fast-growing economic region, offering vast trade and investment opportunities (e.g., Singapore, Malaysia).
- **Connectivity:** Robust maritime connectivity is crucial for trade and energy security (e.g., access to the Malacca Strait). India invests in port development and maritime cooperation with SEA nations.
- **Security:** Cooperation is vital to counter piracy, human trafficking, and emerging threats in the Indian Ocean (e.g., joint patrols with Indonesia).

- **Strategic Partnerships:** Balancing China's influence in the region is a strategic concern for India. Building partnerships with SEA nations promotes a multipolar regional order.
- **Cultural Links:** Historical ties and shared Buddhist heritage with some SEA countries (e.g., Thailand) strengthen cultural exchange.
- **Emerging Markets:** Landlocked countries like Laos and Myanmar offer potential markets for Indian goods and services.

Significance of India's Extended Neighbourhood (West):

- **Energy Security:** West Asia (WA) is a major source of oil and gas imports for India (e.g., Saudi Arabia, Iran). Strong ties ensure reliable energy supplies.
- **Economic Diversification:** WA offers opportunities to diversify India's trade beyond hydrocarbons, promoting investments in infrastructure and services
- **Diaspora:** Large Indian diaspora communities in WA contribute significantly to remittances and act as bridges for economic and cultural exchange (8 millions of Indian workers in the Gulf).
- **Strategic Partnership:** Cooperation is crucial for combating terrorism and maintaining regional stability (joint counter-terrorism initiatives).
- **Geopolitical Influence:** Stronger ties with WA nations enhance India's strategic influence in the region and its voice on global issues.
- **Geo-strategy:** Countering security threats like terrorism and piracy, promoting regional stability.
- **Connectivity:** Collaboration on infrastructure projects like pipelines and undersea cables can improve connectivity between India and WA.
 - International North-South Transport Corridor (INSTC) and the Ashgabat Agreement.
- **Historical Ties:** Long-standing cultural and trade links with WA nations (historical trade routes) offer a foundation for stronger relations.

India's Extended Neighbourhood

- Regions Comprising India's Extended Neighbourhood
 - **Southeast Asia:** Myanmar, Thailand, Vietnam, Indonesia, Singapore, Malaysia, etc.
 - **Central Asia:** Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan
 - **West Asia:** Iran, Afghanistan, Gulf Cooperation Council (GCC) countries.
- Countries included in India's Act East Policy:
 - **ASEAN Countries:** Brunei (2012), Cambodia (2012), Indonesia (2012), Laos (2012), Malaysia (2012), Myanmar (2012), Philippines (2012), Singapore (2012), Thailand (2012), Vietnam (2012).

- **East Asian Countries:** Japan (2014), South Korea (2014), Mongolia (2015).
- **Pacific Island Countries:** Fiji (2015), Papua New Guinea (2015), Solomon Islands (2015), Vanuatu (2015).

Challenges

Immediate Neighbours

- **Territorial Disputes:** Unresolved border issues with some neighbours (for example, China-India border dispute, water sharing with Nepal) can create tension and instability.
- **Security Threats:** Cross-border terrorism (Pakistan) and insurgency (Northeast India) pose major security concerns.
- **Political Instability:** Internal conflicts or weak governance in some neighbouring countries (Myanmar) can create regional instability and spillover effects for India.
- **Uneven Development:** Disparities in economic development between India and some neighbours can create challenges for regional integration.
- **Infrastructure Bottlenecks:** Limited infrastructure for cross-border trade and connectivity can hinder economic cooperation.
- **Environmental Issues:** Transboundary environmental issues like water pollution and climate change require coordinated regional responses.

Extended Neighbourhood (West Asia):

- **Regional Conflicts:** Ongoing conflicts and political instability in WA (e.g., Syrian Civil War) disrupt trade and threaten energy security for India.
- **Dependence on Oil Imports:** India's reliance on oil imports from WA makes it vulnerable to price fluctuations and supply disruptions.
- **Radicalization and Terrorism:** The threat of radicalization and terrorist activities emanating from WA can pose security challenges for India.

Extended Neighbourhood (East Asia):

- **China's Influence:** China's growing economic and military influence in Southeast Asia can be seen as a strategic challenge for India.
- **Maritime Disputes:** Territorial disputes in the South China Sea can lead to regional tensions and impact freedom of navigation for India.
- **Unequal Trade Balances:** India's trade deficit with some East Asian countries (China) can be a concern.

Various initiatives taken by India under Neighbourhood first policy

- **Development Assistance:** Lines of Credit (LoCs) for infrastructure projects in Nepal and Bhutan. SAGAR initiative.
- **Connectivity Projects:** India-Myanmar-Thailand

Trilateral Highway project.

- **Security Cooperation:** Joint patrols and exercises with Bangladesh for border security. Indian Ocean Naval Symposium (IONS), IORA (Indian Ocean Rim Association).
- **Cultural and Educational Exchanges:** Offering scholarships to students from Sri Lanka and Maldives. Project Mausam:
- **Disaster Management:** Immediate relief assistance to Nepal after the earthquake in 2015. Forum for India-Pacific Islands Cooperation (FIPIC).
- **Regional Forums:** Leadership in South Asian Association for Regional Cooperation (SAARC) initiatives.
- **Trade and Economic Cooperation:** Cross-border trade facilitation under the Bangladesh-Bhutan-India-Nepal (BBIN) Initiative.
- **SAARC (South Asian Association for Regional Cooperation):** Aimed at promoting regional cooperation among South Asian countries.
- **BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation):** Focuses on economic cooperation, security, and cultural exchange among Bay of Bengal countries.

Conclusion

“India’s ‘Neighbourhood First’ policy reflects its strategic imperative to prioritise regional stability and economic integration, recognizing that a secure neighbourhood is essential for its own security and the development.” C. Raja Mohan.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:
 1. Japan 2. South Korea
 3. Bhutan 4. Myanmar

How many of the above are included in India’s Act East Policy?
 (a) Only one (b) Only two
 (c) Only three (d) All four

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

Descriptive Question

Q. Discuss the geo-political significance of India's extended neighbourhood for India? Also evaluate the challenges of internal security due to India’s neighbours to India. [15 marks][250 words]

G7 SUMMIT

Why in News: Recently, Italy hosted the 50th G7 Summit in Apulia from June 13 to 15, 2024. The high-level convening came against several global concerns, including the ongoing

conflict in Gaza, the war in Ukraine, climate disasters, and other emerging challenges.

About Group of Seven (G7)

- **Members:** United States, Canada, France, Germany, Italy, Japan, United Kingdom
- **EU Representation:** President of the European Council & President of the European Commission attend summits.
- **Formation:** Evolved from the “World Economic Summit” launched by France and Germany in 1975.
- Communiqués influence global governance and decision-making.
- Decisions are not legally binding but carry significant weight.
- **Membership of the G7 Group**
 - **France:** Hosted the first G7 summit in 1975.
 - **UK:** Member since 1975, hosted numerous summits.
 - **Italy:** Member since 1975, currently holds presidency (2024), hands over to Canada by year-end.
 - **Japan:** Member since 1975, held presidency in 2023.
 - **USA:** Participated in the first summit (1975).
 - **Germany:** Member since the first summit (1975).
 - **Canada:** Joined in 1976, completing the formation of G7.
 - India has been a regular invitee in recent years, but is not a formal member.

Focus on issues in recent G7 summit

- **Global Economy:** Addressing inflation, supply chain disruptions, and economic recovery.
- **Climate Change:** Advancing clean energy transition and climate action.
- **Food Security:** Addressing global food shortages and promoting sustainable agriculture.
- **International Cooperation:** Strengthening partnerships for global challenges.
- **Ukraine War:** Continued support for Ukraine and potential discussions on ending the conflict.

G7 Summit 2024

- Upholding international order in response to Russia’s aggression in Ukraine.
- Addressing global challenges like climate change, food security, and migration.
- Strengthening partnerships with developing nations, particularly Africa.
- Signed a 10-year security agreement between US and Ukraine to bolster Ukrainian defence.
- Agreed on a \$50 billion loan package for Ukraine, using frozen Russian assets as collateral.
- The UK imposed new sanctions on entities supplying military goods to Russia.

- Addressing conflicts in the Middle East (Israel-Hamas).
- Exploring implications of Artificial Intelligence (AI) for humanity.

Significance of the G7 for India

- **Geopolitical Tensions:** The West seeks India's help in navigating the complex situation with China.
- **Economic Growth:** India's projected economic rise makes it a valuable partner.
- **Global Governance Reform:** India advocates for reforms reflecting current global realities, and the G7 offers a platform for this (Mohan).
- **Global Challenges:** India's participation strengthens collaboration on issues like climate change and food security.
- **India's Views**
 - Wants deeper collaboration with the "collective West."
 - Sees the G7 as a way to shape global governance.
- **India's Potential Gains**
 - Strengthen relations with leading economies.
 - Become a global mediator and regional leader.
 - Counter China's influence.
 - Advance economic restructuring through the Quad (US, Japan, Australia, India).
- **Amitabh Mattoo:** The West needs India's leadership due to a "fractured and fragile world."
- **C. Raja Mohan:** India has a "stake" in deeper collaboration with the G7.
- **Indian economic might:** The G7 summit is an annual meeting of the world's leading industrialised nations. India's GDP is expected to surpass Japan's and potentially Germany's in the coming years.

G7 in the contemporary world

- **Launched global initiatives**
 - 1997: \$300 million to contain Chernobyl disaster effects.
 - 2002: Global Fund to fight AIDS, TB, and Malaria.
 - 2015: Global Apollo Program for health research.
- **Exclusivity and Closedness:** Pre-1980s: Discreet meetings, causing backlash (e.g., Plaza Accords). Current perception: Exclusive group wielding power over others.
- **Outdatedness and Ineffectiveness:** Declining share of global GDP (from 50% in 1970s to 30% in 2018). Exclusion of major economies like China and India.
- **Internal Cooperation Concerns:** Disagreements among member leaders (e.g. Trump skipping climate talks).
- **Expert Opinions:** Questions G7's relevance due to declining GDP share. Calls for a more inclusive global governance structure. (Saima Mehta)

Conclusion

G7 has potential to catalyse unprecedented global collaboration, leveraging cutting-edge technology and collective intelligence to pioneer solutions for climate resilience, equitable prosperity, and universal well-being in a rapidly evolving world.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following countries:

- | | |
|-----------|------------|
| 1. France | 2. Germany |
| 3. Italy | 4. Japan |

How many of the above are the members of the G7 countries?

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

Answer: (b)

Descriptive Question

Q. What factors have influenced G7's transformation into a global forum beyond economic coordination? Evaluate the role played by G7 in addressing global economic stability and growth, especially in light of challenges like trade disputes? [15 marks] [250 words]

FIVE EYES ALLIANCES

Why in News: Australia is about to begin enlisting non-citizens from a limited number of nations into its armed services in an effort to address the serious shortage of soldiers in the distant nation.

Key details

Five Eyes Alliance

- **Established:** Following World War II, with roots in informal wartime cooperation.
- **Headquarters:** a decentralised network; it does not have a physical headquarters.
- **Members:** Australia, Canada, New Zealand, United Kingdom, United States.

Working of Five Eyes Alliance

- **Informal Collaboration:** Operates on shared interests and a foundation of trust built over decades.
- **No Central Authority:** Each member nation (US, UK, Canada, Australia, New Zealand) retains its own intelligence agency.
- **Intelligence Sharing:** In 2016, the Five Eyes Intelligence Oversight and Review Council came into being. It includes the non-political intelligence oversight, review, and security entities.
- **Standardised Practices:** Developed common protocols for secure communication and data exchange.

- **Common interests:** such as balancing the rise of China, have led to a closer alignment among the Five Eyes countries.
- **Limits of Unity:** US has also sought to exert its influence through other groupings with like-minded countries on issues of security, like the Quadrilateral Security
 - Dialogue (QUAD) featuring itself, Japan, Australia and India.
 - The AUKUS grouping similarly includes Australia, the UK and the US.

- **India-USA**
 - **Trade:** Record of \$185 billion in 2022. The bilateral trade between India and the US stood at \$ 118.28 billion in 2023-24.
 - **Diaspora:** Large and influential Indian-American community estimated at over 5 million people in 2023. [Migration Policy Institute]
 - **Foreign Affairs:** Strategic partnership since 2014.
- **India-Canada**
 - **Trade:** US\$ 8.27 billion in FY23.
 - **Diaspora:** 1.4 million 2023. [Migration Policy Institute]
 - **Foreign Affairs:** Strategic partnership.
- **India-UK**
 - **Trade:** USD 21.34 billion in FY23.
 - **Diaspora:** . [Migration Policy Institute]
 - **Foreign Affairs:** Comprehensive Strategic Partnership 2021.
- **India-New Zealand**
 - **Trade:** US\$1.56 bn in FY23.
 - **Diaspora:** 300,000 2023. [Migration Policy Institute]
 - **Foreign Affairs:** The Regional Comprehensive Economic Partnership (RCEP) and Significant partner.
- **India-Australia**
 - **Trade:** 24 billion USD FY23.
 - **Diaspora:** 9,76,000 2023. [Migration Policy Institute]
 - **Foreign Affairs:** Comprehensive Strategic Partnership 2020.

Impact of Five Eyes Alliance (5i) on India's Domestic Policies:

- **Limited Direct Impact:** The Five Eyes (US, UK, Canada, Australia, New Zealand) is an intelligence-sharing alliance with no formal enforcement power over member nations' domestic policies but **Indirect Influences:**
- **Security Concerns:** Claim of Canada that information shared by Five Eyes members on Indian government's involvement in violence in Canada.
- **Economic Cooperation:** Negotiations on a Free Trade Agreement (FTA) with Canada and other countries

could prompt India to review domestic regulations on intellectual property or investment rules.

- **Global Norms:** India's participation in forums like the Quad (US, Japan, Australia, India) could lead to a gradual shift in its approach to human rights issues or intellectual property enforcement.

Five Eyes Alliance concerns for India

- **Secrecy & Abuse:** 2013 Snowden leaks exposed NSA (US) data collection programs, raising concerns about potential misuse of intelligence within the Five Eyes Alliance and threat to non-member nations of such leaks.
- **US Influence:** India's opposition to the 2003 Iraq War, supported by FVEY members, highlights potential pressure to align with US interests.
- **Data Privacy:** India worries data-sharing programs could compromise citizens' privacy, citing the broad surveillance powers granted by the US Patriot Act (2015).
- **Russia Strain:** India's FVEY ties could strain its reliance on Russia for military equipment, especially with tensions due to Ukraine war sanctions.
- **Limited Access:** restricts India's access to real-time intelligence and advanced resources.

Conclusion

Security concerns and economic collaboration are the most likely areas for impact. India will likely maintain its strategic autonomy while seeking cooperation with the Five Eyes on shared interests.

UPSC CSE EXPECTED MCQ

Prelims MCQ

- Q. Which of the following statements is/are correct?
- Statement - I: The United States of America is India's largest trade partner.
- Statement - II The India- US bilateral trade stood at \$ 118.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.
- (b) Both Statement-I and Statement-II are correct 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.

(p):rəmsɪv

Descriptive Question

- Q. Elaborate the importance of Five Eyes Alliance for India with respect to technology transfer, internal security and economy. Also discuss how Five Eyes

Alliance (5i) impacts on India's domestic policies? [15 marks] [250 words]

COLOMBO PROCESS

Why in News: Under India's leadership, on 28 June 2024, the Colombo Process membership convened at the International Organisation for Migration (IOM) Headquarters in Geneva, Switzerland.

About Colombo Process

- Regional consultative process on overseas employment and contractual labour for countries of origin in Asia is called COLOMBO PROCESS.
- **Established:** 2003
- The **Secretariat** of the Colombo Process is hosted by IOM with its headquarters in Geneva.
- **Aim:** To provide a forum for Asian labour sending countries to share experiences, lessons learnt and best practices on overseas employment.
- **Permanent Member Countries:** Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Viet Nam.
- **Founding Member Countries:** Bangladesh, China, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam.
- **Past Chairs:** Afghanistan, Nepal, Sri Lanka, Philippines, Indonesia, Bangladesh.

Objective

- **Asian Labour Hub:** Connects Asian countries sending workers abroad to share best practices.
- **Migrant Worker Voice:** Addresses challenges faced by migrant workers & sending/receiving countries, prioritising vulnerable workers.
- **Boost Development & Dialogue:** Maximises benefits from organised overseas employment and strengthens communication with destination countries.
- **Track Progress & Improve:** Reviews past actions and identifies steps to make the system work better.
- **Current Focus:** Skills recognition, ethical recruitment, pre-departure training, efficient remittance transfers, and labour market analysis.

Structure:

- **Informal & Non-Binding Environment:** Encourages dialogue and cooperation on labour migration issues. Decisions are made by consensus.
- **Collective Bargaining Platform:** Allows sending countries to advocate for their interests.
- **Two-Part Meetings:**

- Senior Officials' Meeting
- Ministerial Consultations (rotating chair)
- **Outcome Documents:** Finalised by Senior Officials for Ministerial approval.
- **Recommendations:** May be implemented at the national level.

India's priorities for Colombo Process (2024-26)

- Reviewing the financial sustainability of the Colombo Process,
- Broadening the membership by including new member states and observers,
- Reconfiguring technical-level collaborations,
- Implementing a structured rotation for the chairmanship,
- Conducting a regional review of the Global Compact for Safe, Orderly, and Regular Migration (GCM) and
- Engaging in dialogues with the Abu Dhabi Dialogue (ADD) and other regional processes.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. "COLOMBO Process," recently mentioned in the news is associated with:
- regulation of deep sea mining in international waters.
 - overseas employment and contractual labour for countries of origin in Asia.
 - the transport, treatment, storage, and disposal of all manner of wastes.
 - import and export of genetically modified organisms.

(d) Answer

Descriptive Question

- Q. Colombo process seeks to implement the Sustainable Development Goals targeting migration and address issues related to labour migration, Critically analyse. [10 marks] [150 words]

WHO PANDEMIC PREPAREDNESS TREATY

Why in News: World Health Assembly (WHA) recently agreed to the number of significant changes to the International Health Regulations (2005) (IHR) and committed to concluding discussions on a global pandemic agreement by 2025.

Key Details

Amendments Agreed to the International Health Regulations (IHR)

- **Definition of Pandemic Emergency:** This definition includes criteria such as: Wide geographical spread of a disease. Exceeding national health system capacity.

The 'Biopharmaceutical Alliance' in the 'Bio International Convention 2024' was launched by how many of the above?

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

Answer: c (1, 2, 4 and 5 only)

CHAT CONTROL LAW

Why in News: Recently, European Union (EU) countries has delayed proposed legislation to tackle online child sexual abuse material (CSAM) under heavy criticism from tech companies and digital rights groups.

Key Details

- The 'Chat Control law' is a part of the 'European Union (EU's)' move to fight against online child sexual abuse material or CSAM.
- The latest version of the draft legislation requires online interpersonal communication services to implement "upload moderation".
- The messaging apps are required to scan "images and the visual components of videos and URLs" while the detection of audio communication and text is excluded.
- "In order to implement this Regulation, providers of interpersonal communications services shall install and operate technologies to detect, prior to transmission, the dissemination of known child sexual abuse material or of new child sexual abuse material.
- According to the draft, messaging apps are required to scan "images and the visual components of videos and URLs" while the detection of audio communication and text is excluded.
- Messaging apps also require such apps to obtain the explicit consent of users before scanning their private communications as part of the terms and conditions of use.

Concerns

- This proposed legislation threatens end-to-end encryption (E2EE) and undermines the privacy of individuals.
- Decrypting the contents of messages sent by users could make them more vulnerable to hacks and data leaks.
- The photos and videos exchanged over messaging apps could get wrongfully flagged as CSAM.
- The move could also eventually lead to apps like Signal pulling out of the EU, making their services no longer accessible in the region.

UPSC CSE EXPECTED MCQ

Prelims MCQ

Q. The 'Chat Control Law,' recently mentioned in the news, is associated with:

- (a) Saudi Arabia
- (b) The United States
- (c) European Union (EU)
- (d) China

Answer: c (1, 2, 4 and 5 only)

WORLD HYDROGRAPHY DAY

Why in News: Recently, the International Hydrographic Organisation (IHO) celebrated World Hydrography Day to raise awareness about Hydrography.

Key Details

- 'World Hydrography Day' raises awareness about hydrography and its role in studying the seas and oceans.
- The theme for 2024 is "Hydrographic Information - Enhancing Safety, Efficiency and Sustainability in Marine Activities."
- The **Indian Naval Hydrographic Department (INHD)** functions under the Indian Navy as the nodal agency for Hydrographic surveys and nautical charting in India.
- The **National Institute of Hydrography (NIH) at Goa** is the centre for imparting training in Hydrography and is accredited by the International Hydrographic Organisation for National and International Trainees.

International Hydrographic Organisation (IHO)

- It is an intergovernmental organisation established in 1921 that ensures all the world's seas, oceans and navigable waters are surveyed and charted.
- The IHO currently has 100 Member States including **India** and India is also one of the 30 members of IHO Council.
- India is a founding member of North Indian Ocean Hydrographic Commission (NIOHC) and an associate member of Southern African and Islands Hydrographic Commission (SAIHC).
- The IHO Secretariat has been hosted by the Principality of Monaco since the creation of the organisation in 1921.
- The United Nations Convention on Oceans and Law of the Sea (UNCLOS) invited IHO to jointly adopt measures with a view to encouraging greater international cooperation and coordination for the transition to electronic nautical charts; and to increase the coverage of hydrographic information on a global basis.

THE TELECOMMUNICATIONS ACT 2023

Why in News: On June 26, 2024 the Telecommunications Act 2023 took effect, superseding all earlier Telecommunications Acts.

Key Details

The current, archaic legal structure for the telecommunications industry, which was based on the Telegraph Wires (Unlawful Possession) Act (1950), the Wireless Telegraphy Act (1933), and the Indian Telegraph Act (1885), has been replaced by the Telecommunications Act 2023.

Key Provisions of Telecommunications Act, 2023

- **Authorization and Licensing Requirements:** Authorisation will be required from the central government to: (i) establish and operate telecommunications networks, (ii) provide telecommunications services, or (iii) possess radio equipment.
- **Spectrum Allocation and Usage:** Spectrum assignment through auctions, except for national security, disaster management, and satellite services.
- **Satellite Internet Provision:** Provisions for allocating spectrum to satellite internet providers like OneWeb and SpaceX's Starlink. Active authorizations granted to OneWeb and Jio for satellite-based internet services.
- **Surveillance and Suspension Powers:** Government can intercept, monitor, or block messages for public safety or emergencies. Telecom services may be suspended, and temporary infrastructure possession during public emergencies.
- **Regulation and Standards:** Central government sets standards for telecom equipment and infrastructure. Amendments to the TRAI Act, 1997, mandate experienced individuals as TRAI chairpersons and members.
- **Digital Bharat Nidhi and OTT Services:** Universal Service Obligation Fund (USOF) renamed as Digital Bharat Nidhi for research and development. OTT services regulation under potential Digital India Act, 2023, excluded from Telecom Act.
- **Legal Offences and Penalties:** Specifies criminal and civil offences, including unauthorised telecom services and breach of terms. Penalties range from fines to imprisonment, adjudicated by designated officers and committees.

- **National Security Measures:** Integrates provisions established after the 2020 India-China border conflict. Emphasises measures to prevent importation of telecom equipment from adversarial nations.

Evolution of Telecommunications in India

- **Early Telegraph Services:** Introduced by the British in 1851, linking major cities like Calcutta (Kolkata) and Bombay (Mumbai).
- **Department of Telecommunications (DoT):** Established in 1985 to oversee state-controlled telecommunications.
- **Monopoly Era:** State-owned entities like MTNL and BSNL dominated the sector until the 1990s.
- **Liberalisation:** Telecom sector opened to private participation in 1994 under the National Telecom Policy, leading to the end of monopoly.
- **Mobile Revolution:** Mobile services launched in 1995, transforming communication accessibility across India.
- **Internet and Broadband Expansion:** Internet services introduced in the late 1990s, with broadband adoption growing in the 2000s.
- **Digital Technologies:** Growth of 4G and 5G networks, fostering digital connectivity and mobile internet usage.
- **Emerging Technologies:** Focus on IoT, AI, and digital payments, shaping the future of telecom in India.

Advantages of Telecommunications Act, 2023

- **Modernised Framework:** Replaces the Indian Telegraph Act, 1885 and the Wireless Telegraphy Act, 1933, which were outdated and couldn't handle the complexities of modern telecommunications like machine-to-machine communication (M2M) and the Internet of Things (IoT).
- **Streamlined Processes:** Aims to simplify obtaining licenses and permits for telecom operators. This could lead to faster business set-up and potentially more competition in the market.
- **Focus on Competition:** Encourages a competitive telecom market, potentially leading to better services (faster speeds, more data) and lower prices for consumers.
- **Infrastructure Expansion:** Provisions for right-of-way access can expedite development of digital infrastructure crucial for 5G rollout. Faster internet speeds will benefit businesses and individuals alike.
- **Technological Advancement:** Promotes the shift towards fiber-optic networks, enabling faster and more reliable internet connectivity for homes and businesses.

- **Dispute Resolution:** Introduction of technology-driven solutions for handling grievances can improve efficiency in addressing customer concerns.
- **Regulatory Certainty:** Provides a more stable regulatory environment for businesses operating in the telecom sector, potentially attracting further investment.

Concerns about the Telecommunications Act, 2023

- **Privacy and Civil Liberties:** Critics argue that the Act grants broad powers to authorities, potentially compromising individual privacy and civil liberties. Surveillance measures and data retention provisions need careful scrutiny to strike the right balance.
- **National Security vs. Innovation:** Balancing national security with innovation is challenging. While the Act emphasises security, it must not stifle technological advancements or discourage investment.
- **Fee Structure for Right of Way (RoW):** The Act introduces a fee ceiling for RoW, but implementation details matter. If fees are excessive, it could hinder infrastructure deployment.
- **Exclusivity of RoW:** The Act encourages non-exclusive RoW, but practical implementation remains uncertain. Ensuring fair access for all service providers is crucial.
- **Common Ducts and Cable Corridors:** While the Act promotes common ducts, execution challenges may arise. Coordinating infrastructure sharing requires effective planning.
- **Impact on Small Operators:** Stricter norms may disproportionately affect smaller telecom operators, hindering competition and market diversity.

International best practices in Telecom Sector

01

Open Access Networks

Spain's "Red Compartida" network allows multiple operators to use the same infrastructure.

02

Digital Inclusion Policies

South Korea's "Smart Work" initiative promotes telecommuting and digital literacy, benefiting both urban and rural populations.

03

Quality of Service (QoS) Monitoring

Singapore's Infocomm Media Development Authority (IMDA) publishes QoS reports for transparency.

Steps to Improve the Telecom Sector In India

- **Simplify Regulatory Processes:** Streamline licensing, approvals, and compliance procedures to encourage investment and reduce bureaucracy.
- **Invest in Infrastructure:** Enhance network infrastructure, including fibre-optic cables, towers, and data centres.
- **Promote Innovation and Research:** Encourage R&D in emerging technologies like 5G, IoT, and AI. Setting up a regulatory sandbox to test innovative telecom solutions.
- **Digital Literacy and Inclusion:** By promoting digital literacy and ensuring connectivity reaches underserved areas, expanding the Universal Service Obligation Fund (USOF) to support rural and remote services.

Conclusion

The Telecommunications Act, 2023 presents an opportunity for growth and innovation in India's telecom sector. By addressing challenges transparently and fostering collaboration, we can build a resilient and inclusive digital ecosystem.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Consider the following statements regarding the Telecommunications sector in India:
1. The Department of Telecommunications (DoT) was established in 1985 to oversee state-controlled telecommunications.
 2. Universal Service Obligation Fund (USOF) renamed as Digital Bharat Nidhi for research and development under The Telecommunications Act, 2023.
 3. "Red Compartida" network is used to promote network penetration in Naxal affected areas.

How many of the above statements are correct?

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

Answer: (b) (statements 1&2)

Descriptive Question

- Q. How will India's telecom sector balance the opportunities of rapid digitalization and the upcoming 5G revolution with the challenges posed by regulatory changes and financial constraints, ensuring sustained growth and innovation in the digital economy? (250 words, 15 marks)

INFRASTRUCTURE INVESTMENT TRUST

Why in News: Assets under InvITs are expected to double in the next three years, creating a ₹1 lakh crore lending opportunity due to faster development of highways in FY25 and rising toll revenue.

Key Details

- **Popular Choice:** InvITs are becoming major buyers of operational road projects in India because this unlocks capital for road developers after project completion.
- **Significant Growth:** InvITs controlled over 10,000 km of roads in FY24 and are expected to reach 22,500 km by FY28.
 - Investment Information and Credit Rating Agency (ICRA) estimated that National Highway Authority of India will make upto Rs 60,000 crore from sale of its road assets which are being undertaken through InvIT.
 - **Rising Revenue:**
 - ◆ Fastag toll revenue has been rising steadily, reaching ₹65,000 crore in FY24.
 - ◆ Projections show further increase to ₹77,000 crore in the current fiscal and exceeding ₹1 lakh crore annually by FY28.
 - ◆ The recent 5% hike in toll rates by NHAI further improves revenue visibility for InvITs.
 - **Attract Patient Capital:** InvITs appeal to long-term investors like pension funds and sovereign funds.
 - **Win-Win for Investors and Banks:** Banks benefit by transferring long-term risks after project completion, while investors gain steady cash flow.
 - **Government Asset Monetization:** The Indian government is increasingly using InvITs to monetize public assets and broaden public participation. NHAI's InvIT is run by the National Highways Infrastructure Trust (NHIT).

About InvITs

Hybrid Instrument

- InvITs are trusts, registered with the SEBI, which can hold the operational infrastructure projects of sponsors with long concession periods and stable cash flows.
- Once registered, InvITs can raise funds via public or private placement and issue units to investors.
- InvITs combine features of stocks, bonds, and mutual funds.

Regulatory Framework:

- **Asset Composition:** SEBI mandates at least 80% of an InvIT's assets to be completed infrastructure projects generating cash flow and the remaining 20% can be invested in:
 - Under-construction projects
 - Shares and bonds of infrastructure companies

➤ Government securities

- **Distribution Requirements:** InvITs must distribute a minimum of 90% of their cash earnings.
- **Debt Limitation:** InvITs have a debt cap of 70%.

Governance Structure:

- **Sponsor:** InvIT must initially be floated by a sponsor (promoter) who typically owns infrastructure assets.
- **Investment Manager:** Most InvITs have a dedicated investment manager.

Earnings Potential: InvITs can earn through the following ways:-

- **Direct Asset Ownership:** Income generated from toll collections.
- **Investment in SPVs:** Dividends earned from profits of Special Purpose Vehicles (SPVs) holding road assets.
- **Loans to SPVs:** Interest income and loan repayments from SPVs for asset acquisition and maintenance.

Taxation:

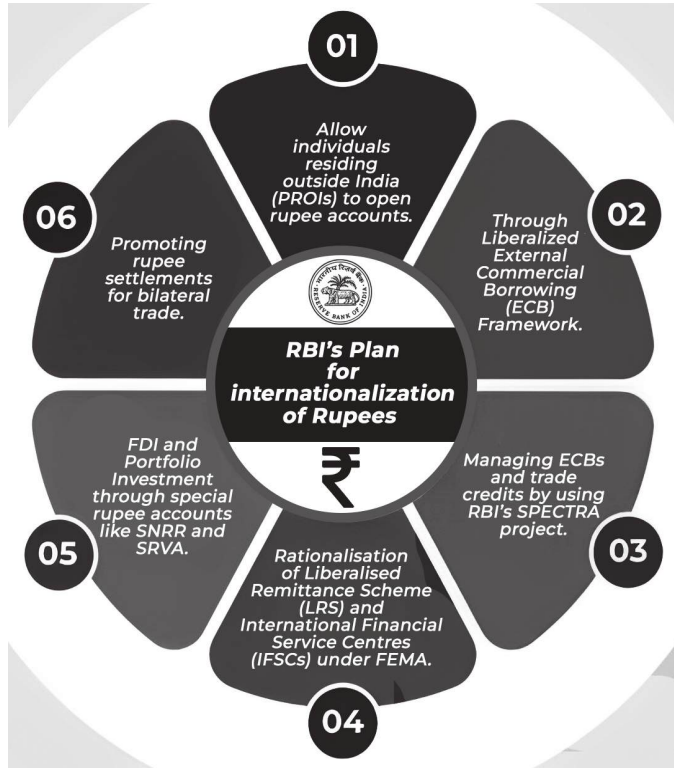
- **Interest and Dividends:** Earnings taxed similarly to bonds and shares, respectively.
- **Direct Payouts:** Treated as income and taxed accordingly based on the individual's tax bracket.
- **Capital Gains:**
 - Short-term (less than 36 months): 15% tax
 - Long-term (more than 36 months): 10% tax

Infrastructure investment trusts offer several benefits to investors and sponsors

- **Low risk and high-quality assets:** InvITs assure annuity cash flows such as roads, power transmission, renewable, telecom towers and gas distribution. At least 80% of these assets should be operational. This would make the risk of a portfolio low.
- **Near-assured returns:** InvITs are required to distribute 90% of their cash earnings (on a semi-annual basis), and are ideal for long-term yield-seeking investors.
- **Strong corporate governance:** The SEBI requires infrastructure investment trusts, a minimum 50% of independent directors on the Board, independent valuers conducting yearly or half-yearly valuations and stringent disclosure norms to ensure transparency.
- **Tax-free distributions:** Distribution of dividends by an InvIT from underlying Special Purpose Vehicles (SPVs) are exempt from tax if a project is claiming a tax holiday or other deductions.
- **Attractive yields:** Publicly listed InvITs offer a degree of liquidity and listed InvITs provide a concessional Capital Gains tax rate incentive to non-resident investors.

Challenges that need to be addressed

- InvITs are sensitive to changes in regulatory and tax law, and a slight change in regulations can upset their price- and yield-related expectations.



Liberalised Remittance Scheme (LRS)

- It is an RBI measure that allows Indian residents to send up to \$250,000 per financial year (April to March) outside India. These funds can be used for any permissible current or capital account transaction, or a combination of both.
- It is for people who are residents of India as defined by the Foreign Exchange Management Act (FEMA). It cannot be used by corporations, partnership firms, Hindu Undivided Family (HUF), trusts, etc.

External Commercial Borrowings (ECBs)

- These are commercial loans raised by eligible resident entities solely for commercial purposes, from recognised non-resident entities.
- They are governed by the Foreign Exchange Management Act (FEMA).

Internationalisation of Rupee

- Internationalisation is a process that involves the use of a currency for more and more cross-border transactions.
- For the rupee, it means that more and more international payments start taking place in the Indian currency.
- This involves promoting the rupee for current account transactions and foreign trade. These transactions will have to take place between resident and non-resident Indians.

How is internationalisation different from paying in rupee in foreign countries?

Using Rupee to make payments and buy things in a foreign country does not signify internationalisation as it does not involve international trade and cross-border payments.

Special Non-Resident Rupee (SNRR) Accounts

- These are non-interest bearing current accounts denominated in INR.
- Any person/entity resident outside India (NRIs, Non-resident companies, PIOs, OCIs, etc.) having a business interest in India can open an SNRR account.
- It is required for carrying out bona-fide transactions in rupees as per the regulations.

Special Rupee Vostro (SVR) Accounts

- A Vostro Account is an account that domestic banks hold for foreign banks in the former's domestic currency.
- It is a trade mechanism announced by RBI to settle international trade in INR.

VOSTRO ACCOUNT

A new trade mechanism to settle international trade in rupees	Authorized Indian banks need to open Special Rupee Vostro Accounts	Keep the foreign entity's holdings in the Indian bank
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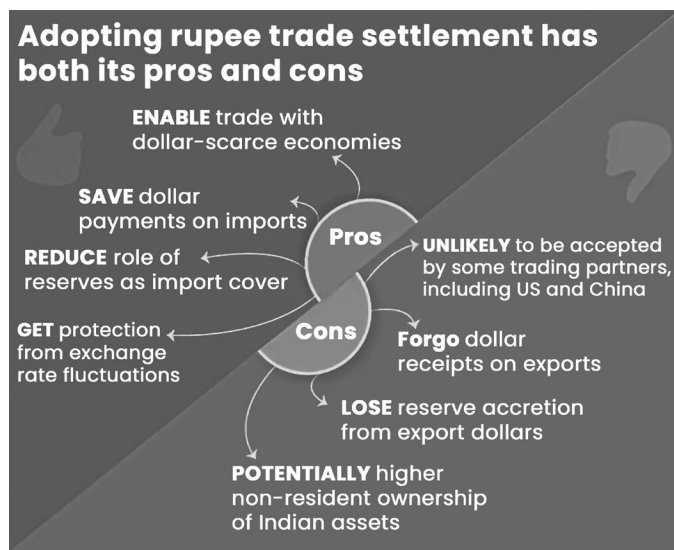
NOSTRO Account	VOSTRO Account
Account held by domestic bank in foreign currency at a foreign bank.	Account held by a foreign bank in domestic currency at a domestic bank

Relevance for India

- Having strong foreign exchange reserves is no longer a sufficient defence against the threat of economic sanctions. Internationalisation of rupee will be the best way to deal with any threats of sanctions and will reduce India's need to hold huge foreign currency reserves.
- It will **reduce the reliance on the US dollar** and its financial markets as well as dependence on dominant international payment mechanisms based on the SWIFT messaging system.
- For Indian businesses, it will **reduce the cost of doing business** by reducing the currency risk if the ecosystem turns volatile.
- It will boost the Rupee to become a **potential reserve currency**, which will be vital for India's dream of becoming one of the top two economies in the world.
- It will also provide India with **higher bargaining power** in international markets.

Internationalising ₹	
Pros	Cons

Will ease foreign trade & aid capital flows	Complicates monetary policy
Mitigate exchange rate risks	Exchange rate stability is challenging
Reduce dependence on forex reserves	Could bring uncontrolled capital flows



Challenges in Internationalisation of Rupee

- **Low confidence in rupee:** Demonetisation (2016) and withdrawal of ₹2000 note (2023) has shaken & impacted the confidence in rupee among India’s neighbours especially in Nepal & Bhutan. The rupee’s internationalisation cannot make a start in such a situation.
- **Very little international demand:** There is very little international demand to trade in the Indian rupee. The daily average share for the rupee in the global foreign exchange market hovers around ~1.6%, while India’s share of global goods trade is ~2%.
- **Lack of full capital account convertibility** driven by the past fears of capital flight and exchange rate volatility.

Internationalisation of rupee can have significant implications on microeconomic and macroeconomic stability.

- Increased volatility in currency demand and regulatory adjustments associated with international use of rupee can negatively impact **microeconomic stability** in India.
- Exchange rate volatility and increased capital inflows could lead to inflationary pressures. This along with the **Triffin Dilemma** might impact the **macroeconomic stability** in India.

What needs to be done?

- **Rupee must be made more freely convertible**, with a goal of full convertibility in future. This would allow foreign investors to easily buy and sell the rupee, enhancing its liquidity and making it more attractive.
- Pursuing a **deeper and more liquid rupee bond market**.

This will enable foreign investors and Indian trade partners to have more investment options in rupees, enabling its international use.

- **Currency swap agreements:** Additional currency swap agreements would allow India to settle trade and investment transactions in rupees, without resorting to a reserve currency such as the dollar.
- **Optimising trade settlement formalities** for rupee import/export transactions.
- Encouraging Indian exporters & importers to invoice their transactions in rupee.
- Providing tax incentives to foreign businesses to utilise the rupee in operations in India.
- Ensuring **currency management stability** (consistent and predictable issuance/retrieval of notes and coins)
- Push for making the rupee an official currency in international organisations. This will give the rupee a higher profile and acceptability.
- Pursuing the recommendations of **Tarapore Committees** (1997 & 2006) - reducing fiscal deficits lower than 3.5%; reducing gross inflation rate to 3%-5%; reducing gross banking non-performing assets to less than 5%.

CASE STUDY- Internationalisation of Chinese Yuan (CNY) or Renminbi (RMB).

China pursued a phased approach in enabling the use of the RMB for trade finance, investment and, over the long term, as a reserve currency.

- First, it allowed the use of RMB outside China for current account transactions and for select investment transactions.
- It signed currency swap agreements with countries such as Brazil, UK, Uzbekistan, and Thailand.
- Later it allowed central banks, offshore clearing banks and offshore participating banks to invest excess RMB in debt securities.
- China signed 41 currency-swap between 2009 and 2020 including with the European Union.
- The yuan became the most widely-used currency for cross-border transactions in China in March 2023, overtaking the dollar for the first time.
- China’s yuan has replaced the US dollar as the most traded currency in Russia since the war started in Ukraine.
- Big financial institutions like Citigroup and Goldman Sachs have predicted that by 2030 yuan will become the 3rd most used currency in international payments.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

Statement-I: Internationalisation of rupee can help in insulating the Indian economy from external shocks.

Statement-II: Internationalisation of rupee involves the use of rupee for more and more cross-border transactions and international payments.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.
- (b) Both Statement-I and Statement-II are correct 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.

Answer: (a)

Descriptive Question

Q. RBI is reviewing the position of rupee as an international currency. What is the need for internationalising the Indian rupee? Discuss the various issues associated with internationalisation of rupee.

TREATY ON INTELLECTUAL PROPERTY

Why in News: An agreement has been reached by members of the Geneva-based World Intellectual Property Organization (WIPO) that requires **patent applicants** to reveal the **nation of origin or source of genetic resources** if the claimed invention is derived from traditional knowledge.

Key details

- **Participation:** 192 nations and 86 observers took part in the two weeks of deliberations at a diplomatic conference from May 13–24.
- **Outcome:** It resulted in the adoption of the “Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge” on May 24 at the WIPO headquarters in Geneva.
- **Significance:** This is the first WIPO Treaty with provisions **tailored especially for local communities and Indigenous Peoples**, addressing the intersection of intellectual property, genetic resources, and traditional knowledge.
- The Treaty will **create a new disclosure requirement in international law** for patent applicants whose inventions are based on genetic resources and/or related traditional knowledge once it comes into force with 15 contracting parties.
- **The Treaty was first proposed in 1999 by Colombia**, and talks for it started at WIPO in 2001. Notably, **local communities and Indigenous Peoples were included in these discussions**.

The World Intellectual Property Organization (WIPO)

- **Purpose:** WIPO facilitates global cooperation in intellectual property (IP) matters, promoting innovation and creativity.
- **Specialized UN Agency:** It operates under the United Nations, with 193 member states collaborating on IP policies and frameworks.
- **Headquarters:** Located in Geneva, Switzerland, WIPO serves as the main hub for international IP activities.
- **Commercial Services:** Provides services for resolving disputes and acquiring IP rights across different countries.
- **Capacity Building Initiatives:** Offers programs to enhance IP capacity in developing countries, promoting economic benefits from intellectual property.

Importance of WIPO Treaty

- **Disclosure Requirements:** Contractual parties must declare the nation of origin or source of genetic resources in patent applications based on genetic resources. Disclosure of the identity of Indigenous Peoples or local communities.
- **Current Implementation:** Only 35 countries have implemented disclosure requirements. Majority of these requirements are optional and lack effective penalties or enforcement mechanisms.
- **Establishment of Global Standards:** The convention establishes unprecedented global standards for disclosure responsibilities within the intellectual property (IP) system.
- **Benefits to indigenous people:** It aims to benefit countries that produce genetic resources and related traditional knowledge.
- **Protection for Indian Knowledge and Resources:** The pact is expected to enhance protection for Indian traditional knowledge and genetic resources.
- **Importance for India’s Advocacy:** The treaty signifies a significant step forward in global IP governance towards a sustainable future.

About Genetic Resources and Traditional Knowledge

- **Examples of Genetic Resources:** Animal breeds, medicinal plants, and agricultural crops are examples of genetic resources.
- **Legal Protection:** Genetic resources themselves cannot be protected under intellectual property laws, but inventions that use them can typically be patented.
- **Traditional Knowledge:** They have been used and preserved by indigenous peoples and local communities across generations.
- **Significance in Innovation:** Traditional knowledge associated with genetic resources plays a crucial role in scientific research and the development of new innovations.
- **Conservation Efforts:** Indigenous peoples and local communities have historically conserved these resources and traditional knowledge.

of their platform. It includes segments like grocery, food delivery, hotel booking, and travel.

- **Breaking Monopolies:** By involving both small and large-scale e-commerce players, ONDC seeks to challenge the dominance of firms like Amazon and Flipkart in India.
- **Increased Visibility:** ONDC provides digital visibility and availability for buyers and sellers across different apps.
- **Credit History:** Merchants can build a credit history by saving data within the system.
- **Compliance:** ONDC adheres to the Information Technology Act 2000.
- **Payment Flexibility:** Payments can be made using any UPI payment app or any digital payment mode.

Why is the Government of India pushing for ONDC?

- **Sunrise sector:** In FY 2022-23, Government e-marketplace (GeM) registered its highest ever Gross Merchandise Value of \$2011 Bn.
- **To explore e-commerce opportunities in the retail sector:** At present, e-commerce represents just about 4.3% of retail commerce in India. More than 60% of transactions and orders in India come from tier two cities and smaller towns. India’s D2C market is expected to reach US\$ 60 billion by FY27.
- **To enhance Global e-commerce exports:** Exports are currently at \$800 billion, and are slated to reach \$2 trillion by 2030. Moreover, the overall Indian e-commerce market is also expected to reach US\$ 350 billion by 2030.
- **Open field for small and retail traders:** The benefits of the ONDC Network include lower entry-barriers to digital commerce, providing Level playing field for all e-Commerce models and unbundling of various stages of e-commerce transactions to allow new business models and opportunities.
- **Boost to digital economy:** ONDC ensures an expansion of digital commerce, making it more inclusive.
- **Enhancing consumer choice:** ONDC Network includes multiple buyer applications and seller applications all working seamlessly with each other. With this open network, buyers can discover and purchase products/ services from sellers using any seller application, through a single buyer application of their choice.
- **Democratisation of e-commerce:** The government believes that the ONDC will put an end to the domination of the e-commerce market by a few large platforms.
- **Transparency:** Further, ONDC aims to promote transparency, trust and efficiency through its design as well as operational practices including free and open-source standards and systems, decentralisation and privacy by design, participatory approach and transparency, level playing field, clear audit trail and protecting buyer and seller rights.
- **Easy market access to farmers:** On the agriculture front,

through ONDC farmers could gain direct access to buyers while Farmers Producer Organisations (FPOs) can establish direct connections with potential clients, bypassing intermediaries.

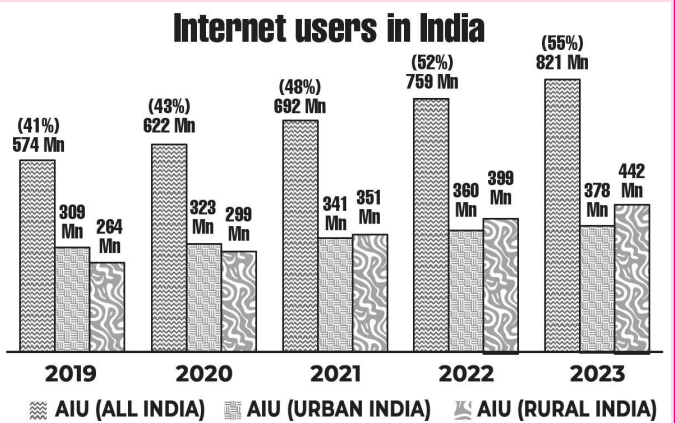
- **Easy procurement of inputs for agriculture:** Further, FPOs can easily get access to input, technology, equipment, and services from companies and government bodies.
- **Boost to financial technology services:** ONDC ecosystem is expected to digitise the data available on SMEs (using the transaction data) with the help of financial technology services providers. The digitised data will enable financial institutions to develop better understanding of this client segment to tailor products and services.

Unified Payments Interface (UPI) project:

- In light of goals for Viksit Bharat 2047, the Reserve Bank of India (RBI) aims to expand UPI’s reach to over 20 countries by the financial year 2028-29.
- In pursuance of the above, Fast Payment System (FPS) collaboration with group of countries like European Union and South Asian Association for Regional Cooperation (SAARC), as well as multilateral linkages will be explored.
- UPI offers features such as UPI123Pay, UPI Lite on-device wallet, linking RuPay credit cards to UPI, and processing mandates with single-block-and-multiple-debits.
- In FY24, additional features such as conversational payments, offline transactions using near field communication (NFC) technology, and pre-sanctioned credit lines from banks were added to the payment channel.

Internet Penetration in India:

- India has more than 820 million active internet users at present.
- Over half of them 442 million now come from rural parts of India.
- In 2023, internet penetration grew eight per cent year-on-year.

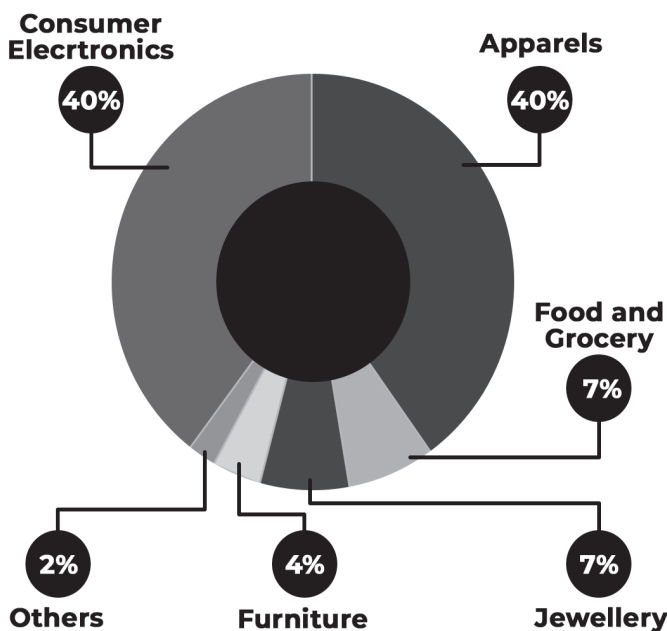


- The number of active internet users in rural India exceeds that of urban users.
- The number of non-active internet users is on the decline, but around half of rural India are still not active.
- Urban India spends slightly more time on the internet per day on average than rural India.

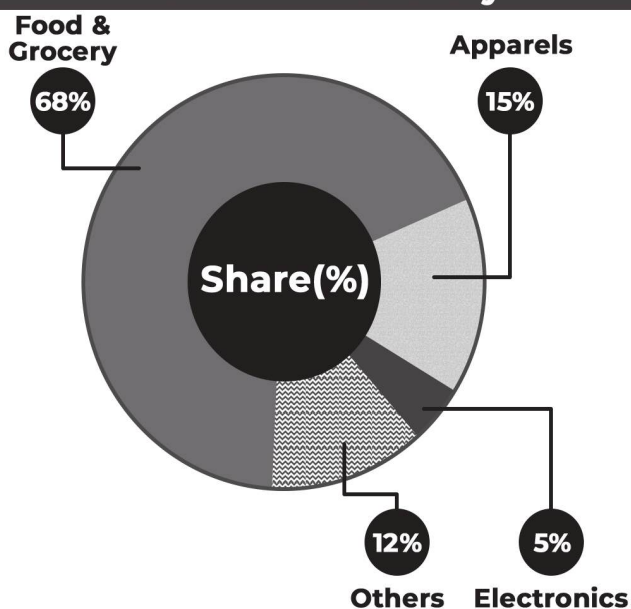
- One in four online shoppers in urban India have shopped from social media apps in the past year.
- Only 26 per cent of online shoppers avail cash on delivery.
- Meta and ONDC have formed a strategic partnership in December 2023 to accelerate small businesses in India and to harness the power of digital commerce in the next two years.

Potential of ONDC

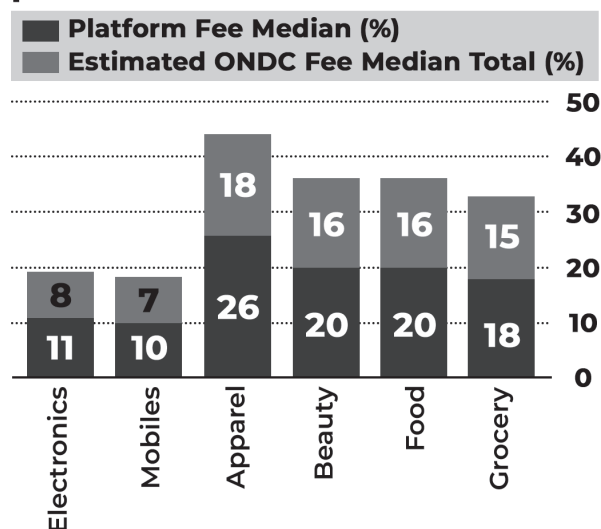
E-Commerce in India is dominated by electronics and apparel...



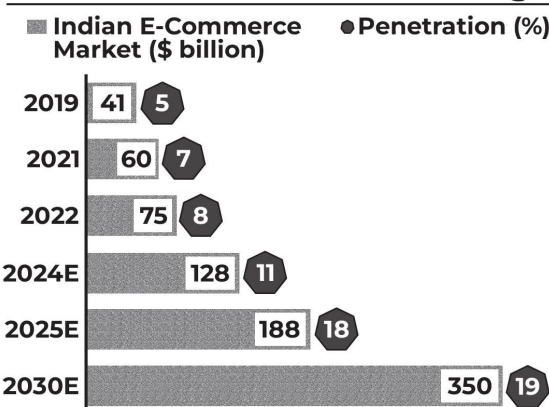
Food and grocery account for 68% of retail market, implying the gaps in e-commerce story



ONDF Fee has the potential to be 20-30% lower than the current platform fees



ONDC Can herald a new cycle of Atmanirbhar' e-commerce growth



ONDC & Its Potential

Growth in India's digital consumption to \$340 bn by 2030 with 500 mn transacting users

- Bring the next 500 mn consumers & 100 mn sellers to trade online
- Scope to connect 80-90 mn self-employed workers
- Get 6-7 times more MSMEs into a diverse ecosystem
- Increase a farmer's net income by 25, 35%, enhance the agricultural ecosystem

Further inclusion in digital commerce which is only 7% of total market with 165 mn users

What are the challenges ahead?

- **Lack of operational strategy and competitiveness in MSMEs:** Without effective planning, MSMEs may struggle to compete with established e-commerce players. For example, a local handicrafts store joins ONDC but fails to optimise its product listings or pricing, resulting in limited sales.
- **Lack of Technical abilities of MSMEs/brands/retailers to use the system:** Ensuring user-friendly interfaces and providing training resources will be crucial for adoption. For example, a small clothing boutique faces challenges in setting up its inventory management system on ONDC.

- **Limited digital commerce base in India:** Currently, e-commerce penetration in India stands at nearly 8% of consumer purchases, but ONDC aims to raise it to 25% in the next two years.
- **Low internet penetration in India:** Over 52% of India's population had internet access in 2024, ranking second globally in active internet users. Still very low in percentage as compared to other countries.
- **Lack of last mile connectivity:** The final leg of delivery (last mile) remains a bottleneck in many areas particularly remote areas.
- **Financial insecurity and online fraud:** In India, the number of frauds in the banking sector largely online; increased to 36,075 in 2023-24 (year-on-year).
- **Lack of a Robust Grievance Redressal Mechanism: include in it - regulatory issues.** Need that ONDC provides a centralised platform for resolving disputes, ensuring transparency and fairness.
- **Supply chain disruptions due to geopolitical tensions:** Political instability, social unrest, changing relations with neighbouring countries can affect the supply chain.

What needs to be done to address the above challenges?

- **Enhancing Operational Strategy and Competitiveness training:** Government and industry bodies can conduct workshops and training sessions to educate MSMEs on ONDC adoption, inventory, supply chain etc.
- **Strengthening Technical Abilities of MSMEs/Brands/Retailers to Use the System:** ONDC should launch an intuitive mobile app with step-by-step guides for sellers. And 24*7 assistance.
- **Broadening the Digital Commerce Base:** Promoting ONDC through awareness campaigns, emphasising benefits like cost savings and wider reach.
- **A Robust Grievance Redressal Mechanism:** Establish a dedicated ONDC ombudsman office for dispute resolution. ONDC can appoint retired judges to handle grievances impartially.
- **Facilitating Last Mile Connectivity:** Partner with local logistics providers and incentivize efficient last-mile delivery. E.g. Indian post.

Conclusion

The Open Network for Digital Commerce (ONDC) promises to revolutionise Indian e-commerce, fostering competition, transparency, and accessibility through unified digital infrastructure and interoperability.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Open Network for Digital Commerce:

1. It is believed that the ONDC will put an end to the domination of the e-commerce market by a few large platforms.

2. ONDC adheres to the Information Technology Act 2000.
3. The goal of ONDC is to create an inclusive e-commerce environment through a closed protocol developed on open-source specifications.

How many of the above statements are correct?

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

Answer: b (statements 1&2)

Descriptive Question

Q. The goal of ONDC is to create an inclusive e-commerce environment. Elaborate the statement with appropriate examples. (10 marks) (150 words)

INDIA'S TRADE DEFICIT

Why in News: India has recorded a trade deficit, with nine of its top 10 trading partners, including China, Russia, Singapore, and Korea, in 2023-24.

Key Details

- **Overall Trade Deficit Narrowed:** India's total trade deficit decreased to \$238.3 billion from \$264.9 billion in the previous year.
- **Stagnant Exports:** Export figures remained relatively stable at an estimated US\$776.68 billion.
- **Bright Spots:** India maintains a trade surplus with the US (\$36.74 billion), UK, and other countries.
- **Expert Concerns:** A persistently high deficit can weaken the rupee and increase external debt.

India's Over All Trade Performance : (2019-2024)

Current account balance is the difference between the sum of exports of goods and services as well as income receivable (A), on the one hand, and the sum of imports and income payable (B) on the other. This account slips into deficit when B is greater than A. If a country's current account is in deficit, it has implications for its currency. The local currency tends to depreciate. India's trade deficit, the gap between the value of its imports and exports.

India's Over All Trade Deficit: (2019-2024)

- **2019-20:** A bright spot - India's trade deficit recorded its lowest level in recent years at \$155.2 billion.
- **2020-21 & 2021-22:** For FY (April-March) 2020-21 was estimated at USD 12.74 billion, whereas, it was USD 82 billion in Fiscal Year 2021-22.
- **2022-23:** Overall trade deficit for FY 2022-23 (April-March) stood at USD 122 Billion.
- **2023-24:** Overall trade deficit for FY 2023-24 (April-March) is estimated at USD 78.12 Billion.

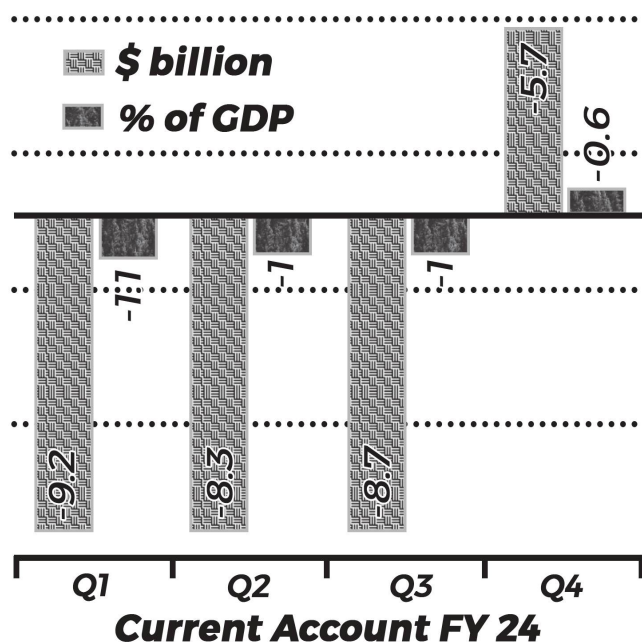
Shifting Trade Landscape:

- **Largest Trading Partner:** China emerged as India's largest trading partner in 2023-24, surpassing the US (India is in surplus with USA), with a total trade volume of \$118.4 billion. However, this partnership comes with a significant trade deficit of \$85 billion for India.

Latest Data on India's Current Account Deficit:

- India's current account deficit improved significantly to 0.7% of GDP, or \$23.2 billion in FY24, down from 2% of GDP, or \$67 billion the previous year, attributed to a decrease in merchandise trade deficit, according to the Reserve Bank of India.
- Services exports and transfers saw an improvement in the fourth quarter of 2024, helping tame a widening trade balance.
- India's foreign exchange reserves saw an accretion of \$63.7 billion in FY24 on a Balance of Payment basis.
- Net invisibles receipt saw an increase in FY24 overall, owing to services and transfers. Net invisibles refer to the balance between the value of exports and imports of invisible goods and services within a country over a specified period.
- Foreign portfolio investment saw a net inflow of \$44.1 billion in FY24 after recording an outflow of \$5.2 billion in FY23. Meanwhile, net FDI inflow reduced to \$9.8 billion in FY24, down from \$28 billion seen in FY23.

Swinging to surplus



Reasons Behind India's Trade Deficit

- **Reliance on Energy Imports:** High Oil Dependence: India imports a staggering 85% of its crude oil needs. For instance, a spike in oil prices in 2022 significantly impacted the import bill.

Demand for Key Inputs:

- **Manufacturing Needs:** Many Indian industries, such as pharmaceuticals, heavily rely on imported raw materials and components. The Indian Pharmaceutical Alliance estimates that nearly 70% of the bulk drugs used in domestic production are imported.
- **Technological Gap:** Like electronics manufacturing, India lags behind in advanced technologies. This necessitates the import of machinery and equipment, further contributing to the deficit.
- **Lower Share of Manufactured Exports:**
 - **Stiff Global Competition:** Competition from countries like China and Vietnam with lower production costs and established export infrastructure. A 2022 study by the World Bank found that India's share in global manufacturing exports remains below 2%.
 - **Focus on Traditional Exports:** A significant portion of India's exports include primary commodities like textiles and agricultural products. While these sectors provide employment, they generally fetch lower prices compared to manufactured goods.
- **Currency Fluctuations:** A weakening rupee can make imports more expensive, further widening the trade deficit.
- **Infrastructure Bottlenecks:** Inadequate logistics and infrastructure, such as inefficient ports and transportation networks. According to the World Bank's 'Logistics Performance Index Report (2023)', India ranks 38 out of 139 countries.
- **Free Trade Agreements (FTAs):** While FTAs can be beneficial by opening up new markets, some agreements may expose domestic industries to cheaper imports, potentially impacting their competitiveness.

Advantages of the Trade Deficit

- **Access to a Wider Variety of Goods:** Benefit consumers by providing them with more choices. Eg. A 2023 report by the Consumer Electronics and Appliances Manufacturers Association (CEAMA) found that smartphone imports from China have driven down prices.
- **Availability of Essential Inputs:** India relies on imports for crucial raw materials and intermediate goods needed for various industries.
- **Jobs and Employment in some industries:** Sectors like pharmaceuticals and electronics. Nearly 70% of the bulk drugs used in domestic production are imported, which is essential for India's \$27 billion generic pharmaceuticals industry.
- **Technological Advancement:** Lead to improvements in production efficiency, product quality, and overall industrial competitiveness. India's import of semiconductor equipment has grown by 20% in the past year, which is crucial for the development of the domestic electronics manufacturing sector.

- **Foreign Investment and Growth:** As companies seek new markets to export their goods. The Indian government’s initiatives like “Make in India” have attracted over \$835 billion in Foreign Direct Investment (FDI) since 2014.

Disadvantages of the Trade Deficit

- **Job Losses in Domestic Industries:** Job losses in domestic industries that struggle to compete with cheaper imports. detrimental to small and medium-sized enterprises (SMEs). The Confederation of Indian Industry (CII) found that the textile industry alone has lost over 1 million jobs in the past decade due to competition from cheaper imports.
- **Rupee Depreciation:** A persistent trade deficit can put pressure on the rupee’s value as more foreign currency is needed to finance imports. This can lead to inflation as imports become more expensive.
- **Rising External Debt:** Can lead to a rise in external debt, making the country vulnerable to fluctuations in global interest rates and potential debt crises. India’s external debt has been steadily rising in recent years, reaching over \$600 billion in 2023.
- **Limited Supply Chain Control:** Reliance on imports for essential goods can leave India vulnerable to disruptions in global supply chains. The COVID-19 pandemic exposed India’s dependence on imported medical equipment and pharmaceuticals.

Measures to be taken to control the trade deficit

	Fiscal Measures:	
	<ul style="list-style-type: none"> • Providing Export Incentives • Increasing Import Duties 	
	Legislative Measures:	
	<ul style="list-style-type: none"> • Rationalising Trade Facilitation Acts • Reforms in Special Economic Zones (SEZs) • Free Trade Agreements (FTAs) with Strategic Partners. 	
	Administrative Measures:	
	<ul style="list-style-type: none"> • Targeted Export Promotion Missions • Streamlined Export Financing 	
	Institutional Measures	
	<ul style="list-style-type: none"> • Setting Global Trade Promotion Body for MSME Exports. 	
	Regulatory Measures:	
	<ul style="list-style-type: none"> • Relaxation of Foreign Direct Investment (FDI) Norms. • Enhancing Standards and Quality Control. 	
	Domestic Policies/Schemes:	
	<ul style="list-style-type: none"> • Focus on Renewable Energy. • Skill Development Initiatives 	

Amnesty Scheme for Exporters (2023)

- **Purpose:** Aims to address outstanding obligations under export promotion schemes like Advance Authorizations (AA) and EPCG (Export Promotion Capital Goods).

- **Target Audience:** Exporters who defaulted on meeting their export obligations under the aforementioned schemes.
- **Benefits:**
 - Regularize outstanding export obligations.
 - Avoid penalties and interest accumulation.
- **Conditions:**
 - Payment of all exempted customs duties in proportion to the unfulfilled export obligation.
 - Interest on the exempted duties may be capped at a specific percentage (varies depending on scheme and announcement).
 - Deadline for registration and scheme participation (already passed in most cases).

Tapping India’s Exports Potential

- **Increasing spends on Information Technology (IT):** Mainly towards software, application development and cloud migrations will help increase commercial and entrepreneurship opportunities and product delivery.
- **Enhancing India’s competitiveness, with the logistics market development:** Implementing digital-first processes, ensuring operational excellence, providing seamless customer experience interfaces, and integrating e-commerce with the export-import (EXIM) trade ecosystem.
- **Setting up e-commerce national trade network-** It will bring together the RBI, Customs, DGFT, GSTN, India Post, courier companies, platforms like Amazon and eBay, and the user to create a central technology platform that streamlines the entire process.
- **Financial Support and Incentives:** Government could pay the product listing fee on global marketplaces to support small firms keeping ₹5,000 crore annually aside for this purpose.. For example, Governments in countries like Singapore and New Zealand finance 70-90 per cent of such expenditures incurred by small firms.
- **Resolving supply chain issues:** Through Supportive policies like conducive tax environment, Production-Linked Incentives (PLI) for different sectors to provide impetus to diversification of supply chain operations by multinational companies to India.
- **Alignment of exports with the market demand:** Identifying lucrative markets, brand building, capacity expansion and diversification and product cost comparison with competing countries.

Conclusion

India’s trade deficit reflects structural challenges in export competitiveness and dependency on imports. It is believed that a trade deficit is not always bad, if a country is importing raw materials or intermediary products to boost manufacturing and exports. However, it puts pressure on the domestic currency.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Many Indian industries, such as pharmaceuticals, heavily rely on imported raw materials and components.
2. A persistent trade deficit can put pressure on the rupee's value as more foreign currency is needed to finance imports.

Which of the statements given above is/are correct?

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

Answer: (c)

Descriptive Question

Q. "Evaluate the impact of India's trade deficit on its macroeconomic stability and industrial sector competitiveness, and policy implications for fostering sustainable economic growth and also discuss main factors responsible for the trade deficit in recent years in India." [15 Marks] [250 words]

FIN-TECH SECTOR IN INDIA

Why in News: Recently, the Reserve Bank of India (RBI) has finalised a framework for self-regulatory organisations (SROs) in the fintech sector.

Key Details

- The self-regulatory organisation (SRO) would be industry-led, and will be responsible for establishing and enforcing regulatory standards, promoting ethical conduct, ensuring market integrity, resolving disputes, and fostering transparency and accountability among its members.
- **Licensing:** Depending on the activity, licences from the RBI (Reserve Bank of India) or SEBI (Securities and Exchange Board of India) might be necessary.
- **Compliance:** Strict adherence to regulations like the Payment and Settlement Systems Act and data privacy laws is crucial.
- **Data Security:** Robust cybersecurity measures are essential to protect sensitive financial data.
- India is among the fastest growing fintech markets in the world with a market size of \$31 billion in 2021 that is expected to reach \$1 trillion by 2030.
- India has the highest fintech adoption rate globally at

87%, which is significantly higher than the global average rate of 64%

About Fintech Sector in India

- **Rapid Growth:** India is a major FinTech hub with a rapidly growing market, estimated at \$584 Bn in 2022 and projected to reach ~\$1.5 Tn by 2025.
- **Regulatory Landscape:** Regulations are evolving, with no single overarching framework. Key regulators include RBI (Reserve Bank of India) and SEBI (Securities and Exchange Board of India).
- **Licensing:** Depending on the FinTech activity, licenses from RBI or SEBI might be required for operations.
- **Compliance:** Strict adherence to regulations like the Payment and Settlement Systems Act and data privacy laws is essential.
- **Focus on Payments:** Payments are a leading area of FinTech innovation, with mobile wallets and digital payments seeing widespread adoption.
- **Financial Inclusion:** FinTech plays a crucial role in promoting financial inclusion by reaching underserved populations with mobile banking and other digital financial services.
- **Government Initiatives:** Government initiatives like "Digital India" support the growth of FinTech by promoting digital infrastructure and cashless transactions.

Types of Fintechs in India by Function

Payments Fintech

- ◆ Mobile wallets (e.g., Paytm, PhonePe).
- ◆ UPI (Unified Payments Interface) platforms.
- ◆ Digital payment gateways (for online merchants).

Lending & Borrowing Fintech

- ◆ Peer-to-peer (P2P) lending platforms (e.g., Faircent, BharatPe).
- ◆ Online loan providers (e.g., ZestMoney, KreditBee).
- ◆ Invoice discounting platforms (financing for businesses).

Insurance Fintech

- ◆ Online insurance sales & comparison platforms (e.g., Policybazaar, Coverfox).
- ◆ InsurTech companies offering innovative insurance

Investment Fintech

- ◆ Cryptocurrency exchanges (e.g., WazirX).
- ◆ Trade finance platforms using blockchain technology
- ◆ Robo-advisory platforms (automated investment advice).
- ◆ Wealth management services

Indian Fintech Sector

- **Mobile-First Financial Services Dominate:** UPI transactions crossed 14.03 Bn in May 2024, signifying a surge in digital payments (Source: Invest India).
- **AI and ML Powering Innovation:** Investment in Indian Fintech startups utilising AI surged in 2023.
- **Focus on Reaching Underserved Populations:** The Indian government aims to achieve financial inclusion for 500 million unbanked adults by 2030 (RBI). FinTech solutions like mobile banking and micro-loans are bridging the gap.
- **Emerging Technologies Open New Doors:** Investment in blockchain startups in India is on the rise, with a projected market size of \$20.6 Bn Open Banking APIs enable collaboration between banks and FinTechs, fostering innovation.
- India is among the fastest growing fintech markets in the world with a market size of \$31 billion in 2021 that is expected to reach \$1 trillion by 2030.
- India has the highest fintech adoption rate globally at 87%, which is significantly higher than the global average rate of 64%

Regulatory Bodies for Fintech in India?

- **Reserve Bank of India (RBI):** As the central banking authority, RBI plays a crucial role in regulating financial services.
 - **Payment Service Providers (PSPs):** Mobile wallets, payment gateways, and prepaid instrument issuers fall under RBI’s purview.
 - **Banks and Non-Banking Financial Companies (NBFCs):** Fintechs offering lending, credit, or other banking-related services may need licence from RBI.
- **Securities and Exchange Board of India (SEBI):** Regulates activities related to the securities market.
 - **Investment platforms:** Robo-advisors, stock trading apps, and other platforms facilitating investment in stocks, mutual funds, or other securities.
 - **Crowdfunding:** Platforms facilitating crowdfunding activities might require SEBI registration.
- **Other Regulatory Bodies:** Depending on the specific Fintech activity:
 - **Insurance Regulatory and Development Authority of India (IRDAI):** Regulates insurance products and services offered by Fintech companies.
 - **Telecom Regulatory Authority of India (TRAI):** Oversees mobile wallets and payment services offered by telecom companies.

Initiatives taken to Address Regulatory Challenges

- **RBI Fintech Department:** Established in 2022 to identify opportunities and challenges associated with Fintech.
- **Regulatory Sandbox Framework:** Being explored by RBI to provide a testing ground for innovative Fintech products in a controlled environment.

- **Self-Regulatory Organization (SRO):** Proposed by RBI to promote self-regulation within the Fintech industry. (Current status: draft framework under consideration)

Parliamentary Standing Committee Report on Fintech Sector in India - Key Highlights

- **Concerns:** Dominance of fintech apps owned by foreign entities in the Indian ecosystem and recommended that local players be promoted. For example, PhonePe commands 46.91% of the market share in volume terms, while Google Pay commands 36.39% of the market share in volume terms.
- **Consolidation of Oversight:** Consolidating the roles of various regulatory bodies (RBI, SEBI, IRDAI, etc.) into a single authority or a more coordinated approach.
- **Regulatory Framework:** Effective regulation of Digital payment apps due to the rise of digital platforms to make payments in India. And recommended for establishing a regulatory sandbox to enable testing of innovative Fintech products in a controlled environment.
- **Support for Domestic Startups:** Measures to encourage and support the growth of indigenous Fintech companies. This could involve grants, tax breaks, or preferential treatment in government procurement.
- **Addressing Security Concerns:** Recommendations for robust data security measures and stricter compliance with data privacy regulations to protect user information.
- **Financial Inclusion:** Measures to leverage Fintech for reaching underserved populations and promoting financial inclusion across the country. This could involve encouraging development of low-cost financial products and services accessible in rural areas.

Fintech vs Digital Banking

Fintech	Digital Banking
Fintech is an economic industry comprises of companies that are providing financial services through new-age technologies.	Digital banking is one of the key functioning areas of Fintech and how it's shaping the future of banking.
It uses a wide range of technologies, products, and business models to compete with traditional financial methods.	It is a digitization of banking products and services via web-based interface or mobile application.
The purpose of fintech is to offer trust, transparency and technology through an improved and efficient business model.	The purpose of digital banking is to speed up and enhance the process of customer interaction with the banks through digital channels.
Fintech products and services include payment, fund transfer, personal finance, insurance, wealth management, blockchain, crowdfunding, etc.	Digital banking includes online banking, personal finance planning, digital wallets, digital coupons, bill payments, mobile transfer, etc.

Digital Payments Intelligence Platform

Purpose: Mitigate fraud and enhance consumer trust in digital payments.

Initiated by: Reserve Bank of India (RBI).

Focus: Network-level intelligence and real-time data sharing across the digital payments ecosystem.

Benefits:

- Early detection and prevention of fraudulent transactions.
- Improved risk assessment for transactions.
- More secure digital payments environment.

Challenges:

- Establishing a secure and efficient data sharing framework.
- Ensuring data privacy and user consent.
- Gaining cooperation from all stakeholders in the digital payments ecosystem.

Current Stage: Under development: A committee led by A.P. Hota is examining various aspects of setting up this platform.

Benefits of the Fintech Sector

- ★ Financial Inclusion through easy institutional financial services.
- ★ Enhanced Efficiency and Convenience for the traditional financial ecosystem.
- ★ Increased Competition and Innovation in Indian Economy.
- ★ Improved Access to Financial Services for customers.
- ★ Protecting businesses against data breaches and cyber attacks.
- ★ Increased FDI inflows and employment opportunities.

Challenges Faced by Fintech Sector in India.

- **Policy and regulatory hurdles:** India lacks a single overarching regulatory framework for Fintech, leading to confusion and compliance challenges.
- **Financial:** Access to capital can be a hurdle for local Fintech startups. Venture capital funding for Indian Fintech startups reached \$7.7 Bn in 2023.
- **Technological infrastructure constraints:** Limited internet penetration, particularly in rural areas, hinders the reach of mobile-first Fintech solutions TRAI.
- **Data privacy and security issues:** User trust hinges on strong data security measures.
- **Issue of poor infrastructure:** Limited access to reliable and affordable electricity in some regions can disrupt Fintech operations, especially in rural areas.
- **Market saturation and competition:** Fintech market is witnessing rapid growth, with established players and foreign-owned companies holding a significant share. Local startups may face stiff competition.
- **Financial illiteracy and unbanked population:** Over 75% of Indian adults lack adequate financial literacy.

Way Forward

- **Streamlining Regulatory Landscape:** Consolidating or coordinating oversight by various regulatory bodies

(RBI, SEBI, etc.) can reduce confusion and streamline compliance for Fintech players.

- **Fostering Innovation with Regulatory Sandbox:** Establishing a regulatory sandbox would allow Fintech companies to test innovative products in a controlled environment, promoting responsible experimentation within clear guidelines.
- **Bridging the Digital Divide:** Investments in rural infrastructure, including affordable and reliable internet access, are crucial for making Fintech solutions accessible to a wider population.
- **Enhancing Data Security and Privacy:** Stricter data security protocols, robust user authentication, and adherence to data privacy regulations are essential to build trust and prevent data breaches.
- **Financial Literacy Programs:** Government and industry initiatives to educate citizens on financial products, scams, and safe digital practices can empower users and encourage wider adoption of Fintech.
- **Supporting Local Fintech Startups:** Government grants, tax incentives, or facilitating access to capital can create a more level playing field for local startups, fostering domestic innovation in the Fintech sector.

Conclusion

India's fintech sector is poised for exponential growth, driven by innovation, digital adoption, and regulatory support. Its transformative impact on financial inclusion and efficiency underscores its pivotal role in India's economic future.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

- (1) The Indian government aims to achieve financial inclusion for 900 million unbanked adults by 2030.
- (2) Depending on the FinTech activity, licences from RBI or SEBI might be required for operations.

Which of the statements given above is/are incorrect?

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

Answer: (a)

Descriptive Question

Q. "What are the economic implications of fintech innovation on traditional banking institutions in India, and how should these institutions adapt their business models to maintain competitiveness in the evolving financial landscape?" [15 Marks] [250 words]

WOMEN IN AGRICULTURE

Why in News: More than 30,000 self-help organisations received “Krishi Sakhis” training to improve the agricultural abilities of rural women.

Women In Agriculture

- **Employment**
 - 70% of households rely on agriculture for income.
 - 60% of the population works in agriculture.
- **Economic Contribution:** Agriculture contributes 18% to India’s GDP.
- **Women in Agriculture**
 - Almost 80% of rural women are involved in agriculture.
 - Women comprise 33% of the agricultural workforce and 48% of self-employed farmers.
 - They contribute significantly through cultivation, entrepreneurship, and labour.
 - Rural women are responsible for 60-80% of India’s food production.
 - They are engaged in allied fields like livestock, horticulture, and post-harvest operations.
 - They perform most labour-intensive tasks like cattle management, fodder collection, and threshing.
 - They play a crucial role in information dissemination within communities.

Causes of Feminization of Indian Agriculture

- **Male Out-Migration:** In the search of better opportunities in urban areas. The National Sample Survey Office (NSSO) data from 2019 reveals that rural-to-urban migration in India is on the rise, with a decadal growth rate of 21.9%.
- **Gendered Roles:** Significant time commitments to household chores and childcare limit women’s ability to pursue alternative employment. A 2021 study by the International Labour Organization (ILO) found that women in India dedicate an average of 6 hours and 49 minutes per day to unpaid care work, compared to just 52 minutes for men.
- **Land Ownership Disparity:** Limited land ownership restricts women’s bargaining power within their families and communities. According to the latest Agricultural Census (2020-21), women own only about 12.75% of agricultural land in India.
- **Limited Skill Development Opportunities:** Agriculture has highest estimated percentage distribution of female workers followed by manufacturing as per the Annual Periodic Labour Force Survey (PLFS) Report 2021-22.

Feminization of Agriculture

Definition: The feminization of agriculture refers to the measurable increase in the number of women involved in agricultural activities. This encompasses various roles, from cultivation and livestock rearing to post-harvest operations and marketing.

Trends:

State-wise Variations in Participation and Land Ownership:

Participation:

- **Higher Representation:** States like Andhra Pradesh (55.1%), Bihar (46.3%), and Odisha (44.8%) (Census of India data) have a higher percentage of female cultivators compared to the national average.
- **Lower Representation:** States with a stronger focus on mechanised agriculture, like Punjab (13.9%) and Haryana (14.2%), tend to have a lower percentage of female cultivators.

Land ownership: As per the Agriculture Census 2015-16, about 11.72% of the total operated area in the country was operated by female operational holders.

Impacts of Feminization of Agriculture

- **Increased workload:** A 2023 study by the Centre for Sustainable Agriculture (CSA) found that women farmers in India work an average of 14-16 hours per day, managing both agricultural work and household chores.
- **Economic Disparity:** NSSO data (2019) reveals that female agricultural labourers earn on average 23% less than their male counterparts for similar work.
- **Limited access to resources:** As per the Agricultural Census (2020-21), only 12.75% of agricultural land in India is owned by women. A 2022 survey by the National Bank for Agriculture and Rural Development (NABARD) found that just 14% of women farmers in India have access to formal credit facilities.
- **Limited decision-making power:** Men make the final decisions regarding agricultural activities, even when women contribute significantly to the work. A 2021 study by Women in Governance found that in over 70% of rural Indian households.
- **Health risks:** Indian Council of Medical Research (ICMR) reported that women agricultural workers are more susceptible to musculoskeletal disorders and respiratory illnesses due to the physically demanding nature of their work and exposure to pesticides.
- **Psychological stress:** Due to workload, financial insecurity, and lack of recognition for their contributions. A 2023 survey by the National Institute of Mental Health and Neurosciences (NIMHANS) found that over 40% of them are stressed.

Empowering Women in Indian Agriculture

- **Land Ownership and Resource Access:** inheritance rights and secure land tenure for women farmers by facilitating land registration and ownership. [Committee on Doubling Farmers' Income(2018)]
- **Financial Inclusion and Credit Availability:** The "Standing Committee on Agriculture" (2022) recommends simplifying loan application procedures and promoting microfinance schemes.
- **Role of Civil society:** Partner (SHGs) and women-led farmer cooperatives Vandana Shiva, environmental activist, advocates for creating financial institutions specifically designed to serve women farmers.
- **Skill Development and Training:** The "National Mission on Natural Farming" (NMNF) emphasises training women farmers. Dr. Swaminathan, highlights the need for skill development programs that address gender-specific challenges.
- **Closing the Gender Gap in Extension Services:** as suggested by the "Committee on Women in Agriculture" (2011).
 - Dr. Asha Verma, agricultural sociologist, emphasises the importance of deploying female extension workers who can better connect with women farmers.
- **Promoting Women's Leadership and Decision-Making:** Ms. Shefali Menon, social entrepreneur, advocates for creating women-led agricultural cooperatives that empower women farmers to make strategic decisions.
- **Addressing Social Norms and Gender Equality:** The "NITI Aayog" report on "Women in Agriculture" (2020) highlights the need for social awareness campaigns to challenge traditional gender roles and promote shared agricultural responsibilities within households.
 - Jean Dreze, economist, emphasises the importance of addressing social norms that restrict women's mobility and participation in public spheres.

Government Initiatives for Women Farmers in India

- **National Mission on Natural Farming (NMNF):**
 - Promotes natural farming through women Self Help Groups (SHGs) and Krishi Sakhi/Pashu Sakhi federations.
 - These groups can set up bio-input resource centres and support mission implementation.
- **Agriculture Technology Management Agency (ATMA):**
 - Aims to address the gender gap in agricultural extension services.
 - Promotes women's food security groups (FSGs) with training, resources, and support for establishing model food security hubs.

- Requires 30% of beneficiaries, resources, and governing body members to be women.
- Encourages women's participation in Block/State Farmer Advisory Committees.
- Assigns a Gender Coordinator to safeguard women farmers' interests.
- **Subsidy Advantage:**
 - Women receive a higher subsidy (44%) compared to others (36%) under the Agri. Clinics and Agri. Business Centres (AC&ABC) scheme.
- **Knowledge Dissemination:**
 - National Institute of Agricultural Extension Management (MANAGE) conducts awareness programs on natural farming for village heads (Gram Pradhans).
 - A web page with natural farming information in 22 regional languages benefits women farmers.

Conclusion

As women take on more roles and responsibilities in farming, they contribute to sustainable development and community resilience. In the words of Vandana Shiva, "Women are the primary food producers of the world."

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Which of the following best describes the objective of the Krishi Sakhi scheme?
- (a) To provide financial assistance to farmers for purchasing agricultural machinery
 - (b) To empower women in rural areas by training them in modern agricultural practices
 - (c) To increase the use of bio-fertilizers through government subsidies
 - (d) To establish a digital marketplace for farmers to sell their produce directly to consumers

Answer: (b)

Descriptive Question

- Q. Explain the factors contributing to the feminization of agriculture. How does this trend affect the overall agricultural sector and rural economies?

COOPERATIVE BANKS IN INDIA

Why in News: The Reserve Bank of India (RBI) has cancelled the licence of The City Co-operative Bank Ltd, Mumbai.

Reason: The bank has failed to comply with the requirements of Sections of the Banking Regulation Act, 1949.

Consequences

- The bank ceases to carry on banking business.
- On liquidation, every depositor would be entitled to receive deposit insurance claim amount of his/her deposits up to a monetary ceiling of Rs five lakh from

Deposit Insurance and Credit Guarantee Corporation (DICGC) subject to the provisions of DICGC Act, 1961.

Cooperative Banks: Cooperative banks are financial entities established on a cooperative basis and belonging to their members. Members are both the owners and the customers of the bank.

Features of Cooperative Banks

- **Democratic Control:** Each member enjoys equal voting rights.
- **Profit Distribution:** Profits are distributed among the members in form of dividends or reinvested into the bank.

Cooperative Banking in India

Rural	Urban
<ul style="list-style-type: none"> • The rural co-operative credit system in India is primarily mandated to ensure flow of credit to the agriculture sector. It comprises short-term and long-term co-operative credit structures. • The short-term co-operative credit structure operates with a three-tier system <ul style="list-style-type: none"> ➤ Primary Agricultural Credit Societies (PACS) at the village level ➤ Central Cooperative Banks (CCBs) at the district level ➤ State Cooperative Banks (StCBs) at the State level • PACS are outside the purview of the Banking Regulation Act, 1949 and hence not regulated by the Reserve Bank of India. • StCBs/DCCBs are registered under the provisions of State Cooperative Societies Act of the State concerned and are regulated by the Reserve Bank. • Powers have been delegated to NABARD under the Banking Regulation Act to conduct inspection of State and Central Cooperative Banks. 	<ul style="list-style-type: none"> • Primary Cooperative Banks (PCBs), also referred to as Urban Cooperative Banks (UCBs), cater to the financial needs of customers in urban and semi-urban areas.
<ul style="list-style-type: none"> • Long term co-operative credit structures include, <ul style="list-style-type: none"> ➤ Primary Co-operative Agriculture and Rural Development Banks ➤ State Co-operative Agriculture and Rural Development Banks 	<ul style="list-style-type: none"> • UCBs are primarily registered as cooperative societies under the provisions of either the State Cooperative Societies Act of the State concerned or the Multi State Cooperative Societies Act, 2002 if the area of operation of the bank extends beyond the boundaries of one state.

Duality of Control

- Banking related functions of cooperative banks are regulated by the Reserve Bank and management related functions regulated by respective State Governments/Central Government.
- The Reserve Bank regulates the banking functions of StCBs/DCCBs/UCBs under the provisions of Sections 22 and 23 of the Banking Regulation Act, 1949 (As Applicable to Cooperative Societies (AACS)).

IBC- INSOLVENCY AND BANKRUPTCY CODE

Why in News: To expedite the process of designating insolvency professionals (IP) as interim resolution professionals, liquidators, and bankruptcy trustees, IBBI releases new guidelines.

Key Details

- **Streamlined Process:** The Insolvency and Bankruptcy Board of India (IBBI) issued new guidelines to appoint insolvency professionals (IPs) faster.
- **Panel System:** A panel of qualified IPs will be available from July 1, 2024, to December 31, 2024. (Validity: 6 months)
- **Eligibility Criteria:**
 - No pending disciplinary proceedings, No convictions in the last 3 years.
 - Valid authorisation for assignment, Expression of interest and consent to act in various capacities and Prior experience under the Insolvency and Bankruptcy Code (IBC).
- **Selection Process:** IBBI prioritises IPs with more completed assignments and earlier registration dates.

The Insolvency and Bankruptcy Code (IBC)

- **Establishment :** Year : 2016
- **Ministry :** Ministry of Corporate Affairs (MCA)
- **Structure :**
 - **Insolvency and Bankruptcy Board (IBBI):** Established under Section 3 of the IBC.
 - ★ Regulatory body overseeing insolvency professionals and the insolvency process.
 - ★ Registers insolvency professionals and agencies (IPs & IPAs).
 - **National Company Law Tribunal (NCLT):** adjudicates insolvency proceedings for companies (Section 60).
 - **Debt Recovery Tribunal (DRT):** adjudicates insolvency proceedings for individuals and partnership firms (Section 61).
 - **Insolvency Professionals (IPs):** Certified professionals who manage the insolvency process (various sections throughout IBC).
- **Expedited Timelines (ETD):**
 - **Typical timeframe for insolvency resolution:** 180-330 days (can be extended under specific circumstances).
 - **Maximum timeline for completion of insolvency process:** 365 days (with provisions for exceptional cases).

- **Obligations:** IPs must accept appointments unless NCLT, DRT, or IBBI permit withdrawal. Refusal without justification leads to removal from the panel for 6 months.
- **Goal:** Ensure a readily available pool of qualified professionals for efficient insolvency resolution.

Performance and Impact of IBC in India:

- **Value Realisation:** Realisable value to the creditors as 16.9% in 2020-21, 22.4% in 2021-22 and 37.1% in 2022-23.
 - Only about 15% is paid by the purchaser and the

repayment takes years, according to the financial stability report 2023.

- **Credit Culture:** banks or FCs are recovering an average of just 10-15% in NCLT-settled cases of large corporations.
- **Time Taken:** In FY22, it took 772 days to resolve cases involving companies that owed more than ₹1,000 crore.
- **Lack of Innovation and Risk-taking:** 3,400 cases admitted under the IBC in the last six years, half or more than 50% of the cases ended in liquidation, and only 14% could find a proper resolution.
- **Ineffective Pre-Packaged Insolvency Resolution Process:** The current law limits the pre-pack resolution mechanism to defaults not exceeding Rs. 1 crore.
- **Large haircuts:** Parliamentary Standing Committee on Finance pointed out in 2021, that in the five years of the IBC, creditors on an average had to bear an 80% haircut in more than 70% of the cases.
- **Transparency and Accountability:** Resolution Professionals (RPs) for example don't conduct according to the procedure, disciplinary action have been on 123 Insolvency Professionals (IPs) till december 2023.

Challenges Associated With IBC

- **Improper Resolution (Falling Recovery Rates):** Insolvency and Bankruptcy Board of India (IBBI) shows that as of March 2024, the average recovery rate for large companies under IBC was around 15-20%, less than the pre-IBC average of 25-30%.
- **Overburdening of Courts (Backlog of Cases):** A Parliamentary Standing Committee report in 2023 highlighted that over 71% of cases under IBC were pending for more than 180 days, exceeding the stipulated time frame.
- **Debt Foregone by the Lender:** Even with successful resolutions, creditors often end up accepting significant haircuts (reduction in the amount recovered). The case of Essar Steel, lenders agreeing to a haircut of over 60% on their dues.
- **Transparency and Accountability (CoCs and IPs):** Questions about potential collusion between Committee of Creditors (CoC) and IPs, leading to unfair outcomes for other stakeholders. Additionally, concerns exist regarding the quality and experience of some IPs.
- **Lack of Adequate Operational Infrastructure:** The IBC framework requires a robust infrastructure for asset valuation, legal support, and marketing distressed assets.
- **Absence of Clear Precedents:** The IBC is a relatively new framework, and judicial interpretations on various aspects are still evolving. This lack of established case law can lead to inconsistencies in rulings.

IBC Amendments their Important Provisions:

- **2017 Amendments:** In the event of defaults, the 2017 Amendment forbids specific individuals from presenting a settlement plan. These comprise, among others,

- willful defaulters,
- the company's promoters or management if there has been an unpaid obligation for more than a year, and
- directors who are disqualified. Moreover, it prohibits selling a defaulter's property to those individuals during liquidation.
- **2023 amendment:**
 - **Regulation 2D:** Details of Debt, Default, and Limitation (Evidence chronology of debt default)
 - **Regulation 3A:** Assistance by Corporate Debtor Personnel (Interim RP/RP takes custody of records and assets)
 - **Regulation 12 Amendment:** Submission of Proof of Claims (Extended timelines for claim submission)
 - **Regulation 13 Amendments:** Claim Verification (Reasons for not collating claims, Categorization of late claims)
 - **Regulation 16A Amendments:** Authorised Representatives (Flexible appointment/replacement process, Fees based on creditors).

Need of IBC 2.0

- **Low Recoveries:** In many cases National Company Law Tribunal (NCLT) could not protect the creditors. The current IBC needs improvement. Data shows an average recovery rate of only 32% for creditors.
- **Customer-Tailored approach:** A one-size-fits-all approach isn't enough. Sector-specific amendments can address unique challenges faced by industries like real estate.
- **Reliable Audits:** Strengthening audit processes and auditor independence is crucial. Flawed financial data can hinder effective decision-making.
- **Infrastructure Upgrade:** NCLTs, DRTs, and the professional ecosystem handling cases require significant investment for better efficiency (Parliamentary Standing Committee report on IBC).
- **Global Reach:** Mechanisms for handling international debt issues are essential in today's interconnected economy. For example, the Central Government has not yet notified IBC provisions for cross border transactions.
- **Absence of dedicated provisions:** IBC lags in accommodating the consolidation of resolution processes for group companies resulting in ambiguities and confusion.
- **Faster Resolutions:** Streamlining procedures can expedite insolvency resolution processes, benefiting all stakeholders.
- **Inclusive Approach:** Gathering and incorporating feedback from all stakeholders (debtors, creditors, professionals) will lead to a more robust framework.
- **Better Monitoring and Accountability:** Need of integrated IT platform linking various stakeholders to improve the efficacy of debt resolution.

- **Scalability:** Making IBC effective for companies of all sizes, from small businesses to large corporations, will broaden its impact.

Conclusion

The Insolvency and Bankruptcy Code catalyses economic recovery, fosters investor confidence, and propels India towards sustained growth by swiftly resolving financial distress and optimising resource allocation.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

- Q. Insolvency and Bankruptcy code is administered by?
- (a) Ministry of Corporate Affairs
 - (b) Ministry of Finance
 - (c) Ministry of Commerce and Industry
 - (d) None of the above

Answer: (a)

Descriptive Question

- Q. Discuss the significance of the Insolvency and Bankruptcy Code (IBC) in addressing the challenges of non-performing assets (NPAs) in the Indian banking sector. How far has it succeeded in its objectives? What are the remaining challenges and suggested reforms?

COAL PRODUCTION IN INDIA

Why in News: India produced 997 million tonnes of coal in 2023-24, an 11% increase over the previous year, most being produced by State-owned Coal India Ltd.

Key Details

- Coal is a major mineral.
- India is the fifth-largest coal reserves globally and stands as the second-largest consumer of coal.
- As of December 2023, India has a total coal reserve of 344.02 billion tonnes and is the second largest producer of coal in the world.
- The coal production which was 382.62 million tons (MT) in the year 2004-05 has grown to 893.19 MT in 2022-23.
- For the fiscal year 2024-25, domestic coal production is projected to reach 1111 MT, while domestic demand is estimated at 1290 MT.
- The share of imported coal is anticipated to reduce below 15%.

Types of Coal and Energy Content

Peat

- ⇒ First stage of transformation.
- ⇒ Contains less than 40 to 55 per cent carbon == more impurities.
- ⇒ Contains sufficient volatile matter and lot of moisture [more smoke and more pollution].
- ⇒ Left to itself, it burns like wood, gives less heat, emits more smoke and leaves a lot of ash.

Lignite

- ⇒ Brown coal.
- ⇒ Lower grade coal.
- ⇒ 40 to 55 per cent carbon.
- ⇒ Intermediate stage.
- ⇒ Dark to black brown.
- ⇒ Moisture content is high (over 35 per cent).
- ⇒ It undergoes SPONTANEOUS COMBUSTION

Bituminous Coal

- ⇒ Soft coal; most widely available and used coal.
- ⇒ 40 to 80 per cent carbon.
- ⇒ Moisture and volatile content (15 to 40 per cent)
- ⇒ Dense, compact, and is usually of black colour.
- ⇒ Calorific value is very high due to high proportion of carbon and low moisture.
- ⇒ Used in production of coke and gas.

Anthracite Coal

- ⇒ Best quality; hard coal.
- ⇒ 80 to 95 per cent carbon.
- ⇒ Very little volatile matter.
- ⇒ Negligibly small proportion of moisture.
- ⇒ Semi-metallic lustre.
- ⇒ Ignites slowly == less loss of heat == highly efficient.

- 100% Foreign Direct Investment (FDI) is allowed through an automatic route for sale of coal, coal mining activities including associated processing infrastructure subject to the provisions of the Coal Mines (Special Provisions) Act, 2015 and Mines and Mineral (Development & Regulation) Act, 1957 as amended from time to time.
- Government of India has extended 'Exploration of Coal and Lignite', a central sector scheme, upto 2025-26.
- From FY 2015 to FY 2020, a total of 24 coal mines were auctioned under captive auctions, while since FY 2020 till date, a total of 91 coal mines have been successfully auctioned.

Coal reserves in India by type of the coal

- **Anthracite (High Carbon):** Limited reserves, primarily found in Jammu & Kashmir. Used in industries and steel production due to its high carbon content, i.e. over 80%.
- **Bituminous (Workhorse Coal):** Abundant reserves in Jharkhand, Odisha, Chhattisgarh, and other central/eastern states. It contains 45-80% carbon, can be used to fuel power plants, cement production, and steelmaking (coking coal).

How High Ash Coal is Processed for Use?

Washing Plants

These on-site facilities process coal to reduce ash and moisture content. They utilise high-powered blowers or a "bath" to eliminate both fine and coarse ash particles. However, deploying this equipment is expensive and contributes to higher power generation costs.

Coal Gasification

This technology bypasses the need for direct coal burning by converting it into gas within an integrated gasification combined cycle (IGCC) system.

- **Lignite (Low-Carbon Option):** Key reserves in Tamil Nadu and pockets of other states. Utilised in thermal power generation due to 40-55% carbon content.
- **Peat (Early Stage Coal):** Not commercially exploited in India because of low heat value and high moisture content.

Distribution of Coal in India: Geographical Landscape

India's coal reserves are not evenly distributed across the country. Here's a breakdown of the key regions:

Dominant Coalfields (Gondwana Deposits)

- **Location:** Eastern and central India, encompassing parts of Jharkhand, Odisha, Chhattisgarh, West Bengal, Madhya Pradesh, Telangana, and Maharashtra.
- **Significance:** These Gondwana coalfields, formed around 200 million years ago, hold roughly **98% of India's total coal reserves** (source: UPSC Geography Optional Mains - 2021).
- **States:** Jharkhand, Odisha, and Chhattisgarh contribute to nearly **70% of India's total coal production** (source: GeeksforGeeks).

Minor Coalfields (Tertiary Deposits)

- **Location:** Northeastern states like Assam, Meghalaya, Arunachal Pradesh, and Nagaland, along with pockets in Tamil Nadu and Puducherry.
- **Significance:** These younger (around 60 million years old) Tertiary deposits hold a smaller share of India's coal reserves, with a higher moisture and sulphur content compared to Gondwana coal.

Additional information

- Jharkhand and Chhattisgarh consistently rank among the top coal-producing states in India, contributing a significant share to the national output.
- Odisha has the largest coal reserves followed by Jharkhand and Chhattisgarh.
- **Gross Calorific Value (GCV)** indicates the amount of heat generated from burning coal.
- **Grades of Coal:** Ministry of Coal has classified coal based on GCV into 17 grades. Grade 1 (highest quality) yields >7,000 kcal/kg, lowest yields 2,200-2,500 kcal/kg.
- **Types of Coal:**
 - **Coking coal:** Used for steel making, requires minimal ash content.
 - **Non-coking coal:** Used for generating heat, has higher ash content.

Auction of Coal Mines in India:

- Commercial coal block auctions are conducted in a two-stage online bidding process, which involves technical screening and submission of competitive initial price offers in the first stage, and a second and final stage where better price offers are intended to be received.
- Coal Mines (Special Provisions) Act, 2015 was enacted for auctioning the coal blocks to the private sector and allotting the coal blocks to PSUs for specific end-use plants.
- June 2020, the government of India had launched auctions of coal mines without end-use restrictions, enhancing transparency and flexibility in the auction methodology, tender conditions, and auction process.

Challenges of Indian Coal Sector

- **High ash content:** Low calorific value compared to imported coal. This increases particulate matter, nitrogen & sulphur dioxide emissions.
- **Import Dependence:** India is projected to account for a (25%) of the global energy demand in next two decades. Risk of potential price fluctuations and geopolitical tensions associated with imported energy sources.
- **Rising Demand:** Coal remains king in India's energy mix, accounting for over 70% of power generation in 2022. However, demand is projected to grow by 4-5% annually.
- **Production Issues:**
 - **Policy Lacunae: Opaque Allocation in the past** has led to inefficiencies and potential for corruption. For example, The Supreme Court of India cancelled 204 coal blocks allocated in 2014.
 - **Allocation & Political Nexus:** Allegations of political influence in allocating coal mining blocks (Example: Controversies surrounding coal block allocations during the 2000s).
 - **Mafia Culture & Illegal Mining:** Clashes between police and illegal miners in Jharkhand. For example, Coal mafias control everything in Dhanbad, from unions & transport to auctions, besides engaging in extortion, bribery, and outright theft.
 - **Technological Hindrance:** Over-reliance on traditional mining methods results in lower productivity and higher safety risks.
 - **Demand-Supply Mismatch:** India's rising energy demands outpace domestic coal production. (Example: India's coal imports reached over 200 million tonnes in 2022-23).
 - **Government Policy Hurdles:** Lengthy environmental approval processes for new mines can stall production expansion.
- **Supply and Infrastructure bottlenecks:** Geological limitations, inefficiencies in mining (leading to a low average mine productivity of 1.2 tonnes per man-shift), and land acquisition hurdles all contribute to this gap.

- **Policy restriction:** Allottees of a coal mine for specified end use or own consumption are permitted to sell only 25% of actual production on ROM (Run-of-mine) basis in the open market; also such sale should not exceed 50% of the annual coal production from the mine.
- **Last mile connectivity problem:** Vast coal reserves, delivering it to power plants hinges on a planned mega railway evacuation infrastructure. For example, Talcher, Odisha.
- **Revenue sharing :** It is profitable but allocations are not happening on time.
- **Lack of Skilled labour:** Lack of trained workers for operating and maintaining complex machinery.
- **Low investment:** Modernising mining processes requires significant investment in new technologies like automated equipment and data-driven management systems.
- **Emissions:** Coal combustion is a major source of air pollution. In 2020, India ranked third globally for CO2 emissions from coal power.
- **Resource Depletion:** India has the world's fourth-largest coal reserves, but these are finite. Over-reliance on coal raises concerns about long-term energy security and sustainability.
- **Subsidies and Inefficiencies:** The government heavily subsidises the coal sector, leading to distortions in the market. Inefficient mining practices further strain the financial viability of coal production.
- **Safety Concerns:** Coal mining can be dangerous. In 2021, India witnessed 44 coal mining fatalities.
- **Climate Change Concerns:** International pressure. India pledged to achieve net-zero emissions by 2070, requiring a reduction in coal dependence.

Way Forward

- **Further opening it up for private sector investment:**
 - Promoting auction of underground coal mines in a more environmentally friendly manner.
 - Allowing coal auction form Coal India (CIL) without end-use restriction for washing purposes.
- **Promoting alternative uses of coal:** Unless the surplus is used for other purposes, production will suffer. For example, coal gasification could be a high priority area for the government.
- **Enhancing mechanised handling of coal:** Improving the basic transportation and loading infrastructure system under First Mile Connectivity (FMC) projects.
- **Setting up coal trading exchange:** It could be similar to such platforms in the power and natural gas sectors.

Conclusion

For the first time, renewable energy accounted for a majority (71.5%) of India's new power generation capacity added

in Q1 2024. Coal's share (including lignite) of total power capacity fell below 50% for the first time since the 1960s is the hope for shifting to renewable energy transition.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Integrated gasification combined cycle (IGCC) is used in washing plants to utilise low ash content coal.
2. India allowed not more than 75% FDI under automatic route in coal sector of India.
3. High ash content is observed in Indian coal.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
 (c) All of the above (d) None

Answer: (b) (1 & 3)

Descriptive Question

Q. "Discuss the role of coal in India's energy landscape, considering its impact on economic development. How has the coal sector evolved over the years, and what are the challenges and opportunities associated with its future trajectory?"

COTTON CORPORATION OF INDIA (CCI)

Why in News: The South India Spinners Association has urged the Cotton Corporation of India (CCI) to prioritise selling of cotton to textile mills in the Micro, Small, and Medium-scale Enterprises (MSME) sector from July 1.

About Cotton Corporation of India

- **Established:** 1970 under the Companies Act 1956.
- CCI engages in diverse activities related to trade, procurement, and export of cotton.
- It ensures equitable distribution of cotton among industry stakeholders and aids in cotton imports.
- Operates in all the three zones of Cotton production.
 - (Northern Zone): Punjab, Haryana, Rajasthan,
 - (Central Zone): Gujarat, Maharashtra, Madhya Pradesh, Orissa,
 - (Southern Zone): Andhra Pradesh, Telangana, Karnataka, Tamil Nadu.
- **Procurement Centers:**
 - CCI has a network of procurement centres across different states.

◆ For example, In Andhra Pradesh, the Guntur branch oversees 43 centres.

- **Textile Policy Governance:** CCI operates under the Textile Policy 1985 issued by the Ministry of Textiles, Government of India.

Cotton Technology Mission

- Launched in 2000 by the Indian government, the Cotton Technology Mission (CTM) aimed to revitalise the cotton sector.
- **Implementation:** The Indian Council of Agricultural Research (ICAR) and State Agricultural Universities collaborated to execute the mission.
- **Three Cotton Growing Zones:** The mission targeted all three cotton-growing zones in India.
- **Nodal Agency:** The Central Institute for Cotton Research (CICR) at Nagpur served as the nodal agency for executing approved research projects.
- **Goals:** Increase Production & Productivity, Aiming for a 20% rise in cotton production and productivity by 2022.
- It is divided in mini missions,
 - **Mini Mission I:** Improve cotton production and productivity by developing cotton research and technology - ICAR.
 - **Mini Mission II:** Technology transfer and development - Department of Agriculture and Cooperation, Ministry of Agriculture.
 - **Mini Mission III:** Improvement of marketing infrastructure - Ministry of Textiles.
 - **Mini Mission IV:** Quality enhancement through upgrading and modernization of the ginning and pressing industries- Ministry of Textiles
- **Increased yield:** Since the launch of CTM, there has been a notable increase in cotton yield. For instance, average yield per hectare has risen from 450 kg in 2010 to 480 kg in 2023, much below the global average of 811.7 kg.
- **Production Growth:** India's cotton production has seen an upward trend, but recent years have shown a decline.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. India is the third largest textile and apparel exporter in the world.
2. India ranks first in the world in the acreage of area under cotton cultivation.

Which of the statements given above are correct?

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

Answer: (c)

ENVIRONMENT & GEOGRAPHY

TROPICAL CYCLONE - REMAL

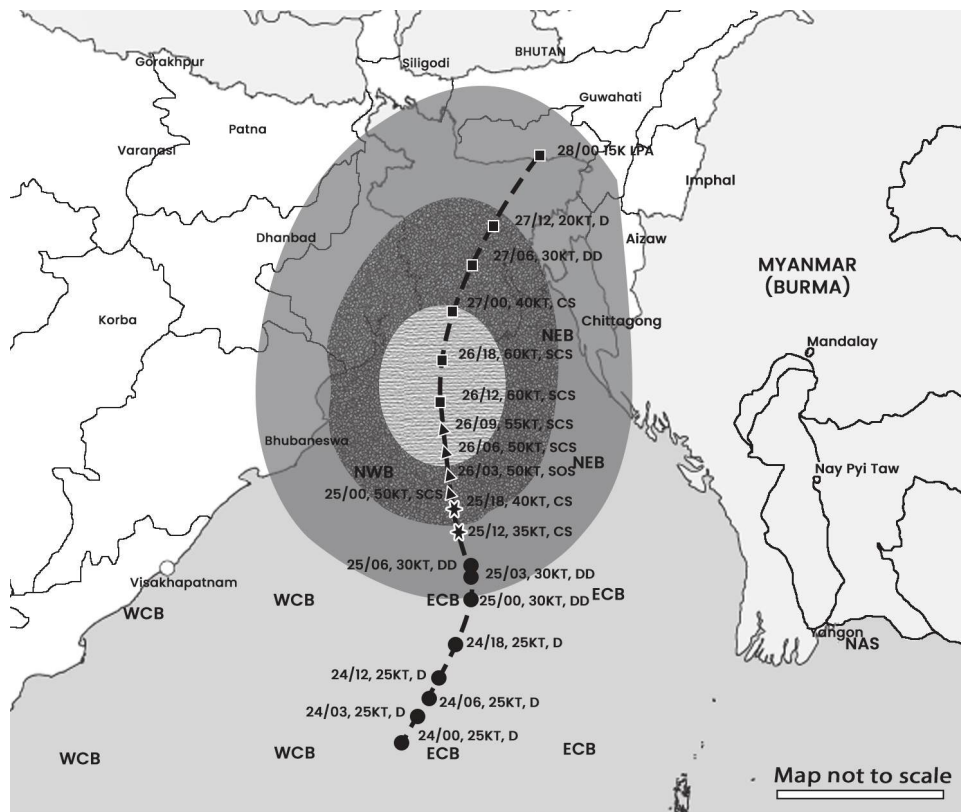
Why in News: Cyclone Remal, a severe tropical cyclone, brought heavy rainfall to West Bengal, Odisha, northeastern India, and Bangladesh.

Key Details

- Cyclone Remal was named based on the World Meteorological Organisation's protocol based on Oman's suggestion. Remal means "sand" in Arabic.
- **Impact:** The cyclone claimed the lives of at least 84 people,

with 65 fatalities reported in India and 19 in Bangladesh, caused food shortages and led to landslides.

- **Ground Support:** The National Disaster Response Force (NDRF), Indian Army, and Assam Rifles actively participated in rescue operations and distributed essential supplies. Relief camps were setup to accommodate displaced people.
- **Financial Support:** The Prime Minister's National Relief Fund was announced for the families of those who lost their lives in the natural disaster.



DATE/TIME IN UTC IST-UTC+0530 L: LOW PRESSURE AREA WML: WELL MARKED LOW PRESSURE AREA D: DEPRESSION (17-27 KT) DD: DEEP DEPRESSION (28-33 KT) CS: CYCLONIC STORM (34-47 KT) SCS: SEVERE CYCLONIC STORM (48-63KT) VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT) ECS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT) SUCS: SUPER CYCLONIC STORM (120 KT)	<ul style="list-style-type: none"> ● LESS THAN 34 KT * 34-47 KT ▲ 248 KT — OBSERVED TRACK - - - FORECAST TRACK ▭ CONE OF UNCERTAINTY AREA OF MAXIMUM SUSTAINED WIND SPEED: <ul style="list-style-type: none"> ▭ 28-33 KT (52.61 KMPH) ▭ 34-49 KT (62.91 KMPH)
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IMPACT OVER THE SEA		
MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
> 64 (2118)	Phenomenal	Total suspension of fishing operations

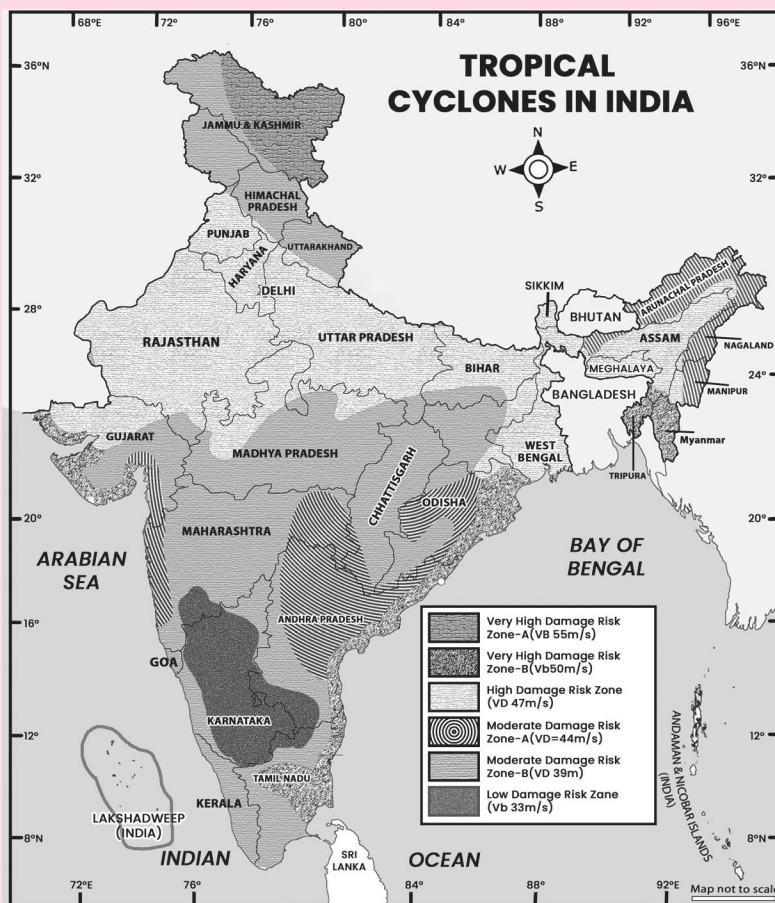
Cyclone Induced Vulnerabilities & Challenges in India:

- **Loss of Life & Property:** Low-lying coastal areas, including deltas and sandy beaches, are directly exposed to storm surges, windblown debris, and flooding.
- **Socio-Economic Factors:** Densely populated coastal regions are impacted displacing vulnerable fishermen.
- **Environmental Degradation:** Mangrove deforestation and coastal erosion weaken natural buffers against storm surges and floods.
- **Displacement & Evacuation:** Of a large number of people before and after cyclones.

Way Forward

- Need for a two-pronged approach – **immediate response and long-term planning**. The relief efforts following the Remal cyclone highlighted the importance of proactive measures.
- **Investing in scientific research** to understand the formation of tropical cyclones is essential for developing effective strategies to mitigate their impact.
- **Collaboration on a global scale** like **Coalition for Disaster Resilient Infrastructure (CDRI)**, exemplifies commitment to promoting disaster-resilient infrastructure worldwide.

Tropical Cyclones in India



- **High Frequency:** The Indian subcontinent is one of the world's **most vulnerable regions** to tropical cyclones. With a long coastline of 7,516.6 km, it is exposed to **nearly 10% of the world's tropical cyclones**.
- **Climate Change:** The number of severe cyclonic storms in both the Arabian Sea and Bay of Bengal has increased to 16 in the past two decades since 2004 compared to 10 between 1984-2003.
- Similarly, extremely severe cyclonic storms in North Indian ocean rose to 17 between 2004-2023 compared to 11 in the previous decades since 1984.

- **Seasonal:** Tropical cyclones in India typically occur in the months of **May-June** and **October-November**. They are **most intense and frequent in the North Indian Ocean** (Bay of Bengal and Arabian Sea) during **November and May**.
- **Eastern Bias:** Most cyclones **originate in the Bay of Bengal**, hitting the East coast. On average, five to six cyclones form every year, with two or three being severe. Cyclones are **more frequent in the Bay of Bengal** than the Arabian Sea with an approximate ratio of 4:1. This is because:
 - Bay of Bengal has a **shallow basin** which fuels easy capture of warm water creating cyclone.

- **Funnel shape** of Bay of Bengal concentrates Coriolis force, intensifying cyclones and directing them towards the coast. While Arabian Sea is larger and cyclones weaken as they travel long distances before reaching the sea.
- **Warm water temperatures** of Bay of Bengal create an ideal low pressure environment.
- **Stronger wind shear** in Arabian Sea disrupts cyclone development and intensification.
- **Connection with Monsoon:** The formation and movement of cyclones can sometimes influence the arrival or intensity of the southwest monsoon in India, but the exact relationship is complex.
 - **Delayed Monsoon:** A strong cyclone can temporarily disrupt the normal monsoon circulation patterns, potentially delaying the arrival of the monsoon rains.
 - **Increased Rainfall:** In some cases, the remnants of a cyclone can be absorbed by the monsoon system, leading to localized areas of intense rainfall.
- The increase in frequency of cyclones over the Arabian Sea has not posed a corresponding increase in the coastal vulnerability along the west coast. This is because of:-
 - **Landfall Location:** Many cyclones generate, but do not make landfall on the west coast of India. They may dissipate or go further north to Oman and Yemen.
 - **Distance & Weakening:** They have to travel long distance, before which they might dissipate.

Conclusion

Countries like Japan and Bangladesh, despite being prone to disasters, serve as excellent examples of preparedness. Their success lies in building resilient infrastructure, implementing localized disaster plans, establishing volunteer forces, and issuing early warnings of impending disasters. There is a need to tackle these multi-hazard disasters collaboratively.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Tropical cyclones in India typically occur in the months of May-June and October-November.
2. Cyclones are more frequent in the Bay of Bengal than the Arabian Sea with an approximate ratio of 4:1
3. Severe Cyclonic Storm has speed of more than 221 Km/h.

Which of the statements given above is/are correct?

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

Ans: (b) (1&2 only)

Descriptive Question

Q. "Elaborate on the role of infrastructure resilience in minimising the damage caused by Cyclone in Indian ocean region particularly taking in consideration the recent cyclone Remal. What infrastructure improvements are necessary to enhance resilience in coastal regions?" [15 Marks] [250 words]

URBAN HEAT

Why in News: Chennai is one of a very few cities in India to have adopted a Climate Action Plan. Authorities are taking steps to develop a Climate Action Plan to tackle this, and setting an example for other cities in India.

Key Details

- The World Meteorological Organization (WMO) declared 2023 the hottest year on record, with global temperatures exceeding pre-industrial levels by a concerning 1.45°C.
- The situation in cities, particularly in densely populated, is further amplified by the Urban Heat Island (UHI) effect. These areas experience temperatures several degrees higher than surrounding rural areas, with the issue persisting even at night. This phenomenon stems from a combination of factors:
 - ◆ **Heat Retention:** Concrete structures and tarmac roads absorb and retain heat, creating a trapped "urban bubble" that holds onto warmth.
 - ◆ **Air Pollutants:** The presence of air pollutants further exacerbates the issue by trapping heat within the city.
 - ◆ **Reducing of Green Spaces:** The lack of green spaces, such as parks and trees, reduces natural cooling mechanisms like evapotranspiration.
 - ◆ **Waste Heat:** Heat generated by air conditioners and machinery adds to the overall heat burden.
- UHI has a disproportionate impact on vulnerable populations, particularly those residing in congested, poorly ventilated areas and informal settlements.

Heat wave Scenario		40°C Plains	30°C Hills
Maximum Temperature			
Heat wave conditions prevail when...		Severe heat wave conditions prevail when...	
Normal maximum temperature	Deviation from normal	Normal maximum temperature	Deviation from normal
▲ Above	██████████	▲ Above	██████████
40°C	4-5°C or more	40°C	6°C or more
▼ At or below	██████████	▼ At or below	██████████
40°C	5-6°C or more	40°C	7°C or more

Constitutional Provisions related to water in India

- **Entry 17, List II (State List) of Schedule VII:** State Governments exclusive powers to legislate on “water,” which includes water supply, irrigation, and canals.
- **Entry 56, List I (Union List) of Schedule VII:** Power of Union Government to legislate on inter-State rivers and river valleys.
- **Article 262:** Adjudication of disputes relating to waters of inter-State rivers or river valleys. It empowers Parliament to regulate and adjudicate such disputes.
- **Article 246:** Seventh Schedule, divides legislative powers between the Union and State legislatures. It delineates the subjects on which each level of government can legislate, including matters related to water.
- **Article 51A(g):** Part IV-A states that it is the duty of every citizen of India to protect and improve the natural environment, including lakes and rivers.
- **Article 48-A:** Part IV mandates that the State shall endeavor to protect and improve the environment and safeguard the forests and wildlife of the country.
- **Article 243W:** Mandates that States shall empower municipalities to prepare plans for economic development and social justice, which may include provisions for water supply.

Cause of Urban Water Crisis

- **Rising population:** India’s population growth has strained water availability. With an estimated usable water range of 700 to 1,200 billion cubic meters (bcm), India has only around 1,000 cubic meters per person, the United States currently has nearly 8,000 cubic meters per person.
- **Poor Water Quality:** Insufficient investment in urban water-treatment facilities results in poor water quality. Eg. The Ganges River, despite initiatives like the Ganga Action Plan, still faces contamination issues.
- **Overexploitation of Groundwater:** Industries, urban areas, Farmers excessively extract groundwater for irrigation, depleting aquifers.
- **Inadequate Rainwater Harvesting:** No knowledge of proper rainwater collection and storage. Also concrete in cities (reduced replenishment). Apathy of people.
- **Mismanagement of Water Resources:** Poor governance and lack of effective policies, inefficient allocation and utilization of water resources hinder sustainability.
- **Pollution of Water Bodies:** Industrial and human waste pollute rivers and lakes. Eg. The Yamuna River in Delhi suffers from severe pollution.
- **Inefficient Agricultural Irrigation Methods:** Outdated irrigation practices such as open and flood irrigation waste the water. Result in salinization.
- **Lack of Government Planning:** Lack of Coordinated efforts between states and centre are needed to address water scarcity.
- **Population Growth and Projections:** India’s population is expected to reach 1.6 billion by 2050. Increasing population exacerbates water demand.

Impact of Urban water crisis

Economic Impact

- **Lost Economic Opportunities:** People spend valuable time collecting water or seeking safe sources, which translates to income not earned.
- **Household Finances:** Having a toilet at home reduces health care expenses. Universal access to basic water and sanitation would result in \$18.5 billion in economic benefits annually from avoided deaths alone.
- **Investment Returns:** Every \$1 invested in water and sanitation provides a \$4 economic return through lower health costs, increased productivity, and fewer premature deaths. (World Health Organisation)
- **Structural Change Needed:** The growing water crisis has striking economic implications. By 2050, water scarcity in some regions could impact GDP growth by up to 11.5%

Social Impact

- **Social Conflict and Migration:** Water scarcity-induced migration from rural to urban areas is significant. It’s estimated that about 1% of India’s population, around 14 million people, migrate annually due to water-related issues.
- **Urban Water Supply Challenges:** Nearly 600 million Indians faced high to extreme water stress and about 2,00,000 people died every year due to inadequate access to safe water. (NITI Aayog)
- **Social Unrest:** Increasing water shortage crisis can spark social unrest in India, considering that over 40% of the nation’s workforce is engaged in agriculture. [Moody Ratings Agency Report 2024]

Environmental & Health

- **Climate Change Vulnerability:** Increasing temperatures exacerbate water stress. For instance, India experienced severe droughts in states like Maharashtra and Karnataka in recent years.

Security Concerns

- **Food security:** Groundwater depletion due to agricultural water use is severe in states like Punjab, Haryana, and Rajasthan, leading to declining water tables and challenges for sustainable farming.

Political Impact

- **Interstate disputes:** Water disputes between states are common in India. For example, disputes over sharing rivers like the Kaveri and Mahanadi have led to social tensions and legal battles.

Urban Water management - A challenge in India

- **Groundwater Depletion:** Over-extraction, as of 2018, over 60% of districts were categorized as critical or overexploited in terms of groundwater depletion.
 - Example, in states like Punjab, groundwater levels have dropped by 6 meters or more in the last decade due to intensive agricultural practices.

- **Urban Water Stress:** As of 2020, over 20% of urban households in India reported water shortages that affected their daily lives.
 - Example, Many Indian cities face severe water stress. Chennai, for example, experienced a major water crisis in 2019, with reservoirs running dry and severe water rationing.
- **Water Pollution:** Around 70% of India's surface water is contaminated, contributing to health issues and reducing available water for consumption and agriculture.
- **Inter-State Water Disputes:** As of 2020, there were over 100 ongoing inter-state water disputes in India, highlighting the challenges in equitable water allocation and management.
- **Climate Change Impact:** By 2030, water demand in India is projected to exceed supply, leading to severe water shortages in many parts of the country if current trends continue unchecked.

The Case Study: Water crisis in Maharashtra-

- **Dependence on Tankers:** In 25 districts of Maharashtra, including villages and hamlets, approximately 10,767 habitats caused by meagre rainfall last monsoon.
- **Draught:** The state government has declared 66% of rural Maharashtra as drought-affected.
- **Dams and Reservoirs:** The water levels in the state's reservoirs and dams have significantly decreased, with live storage reduced to 22.83% of capacity.
- **Marathwada region:** Particularly affected, with only 9.10% water availability compared to 36.48% during the same period last year.
- **Tanker Deployment:** To 3,029 villages and 7,738 hamlets. Marathwada has the highest number of tankers, followed by Nashik division and the Konkan region.

Traditional water conservation techniques in India

- **Rainwater Harvesting (Taanka and Baoli):** Underground tanks (Taanka) and stepwells (Baoli) collect and store rooftop rainwater for domestic use.
- **Johads:** Earthen dams in Rajasthan retain rainwater to replenish groundwater and support agriculture and livestock during dry seasons.
- **Ahar-Pyne System:** Channels excess monsoon water into reservoirs (ahars) and distributes it through channels (pynes) for irrigation in eastern India.
- **Kulhs:** Gravity-fed channels in Himalayan regions divert snow and glacier meltwater to villages for irrigation and domestic use.
- **Eri System:** Tank-based interconnected reservoirs in Tamil Nadu capture and manage rainwater for year-round irrigation and drinking water supply.

Best Practices of Water Management in India

- Narmada (Sanchore), Rajasthan.
- Mission Kakatiya, Telangana.
- Har Khet ko Pani, Andhra Pradesh.
- Participatory irrigation management, Waghad, Maharashtra.
- Root zone watering (SWAR), Telangana.
- Bhungroo-Groundwater injection well, Gujarat.
- Pani Panchayat, Odisha.

Administrative/ Legal Mechanism with respect to water management in India

- **State List Subject:** Constitution of India has it in seventh schedule, manage water resources within their jurisdiction.
- **Ministry of Jal Shakti:** Coordinates national water policy and resource management efforts.
- **Central Water Commission (CWC):** Plans and implements water projects at the national level.
- **Central Ground Water Board (CGWB):** Monitors and manages groundwater resources and advises states.
- **Central Pollution Control Board (CPCB):** Regulates and monitors water quality and pollution control measures nationally. Water Act of 1974.
- **State Departments of Water Resources:** Implements state-level water management policies and projects.
- **Panchayats:** Local bodies implementing water conservation and governance at grassroots level.

Government Schemes

- **Jal Jeevan Mission (JJM):** Aims to provide tap water connections to all rural households by 2024, focusing on water conservation and sustainable management.
- **National Rural Drinking Water Programme (NRDWP):** Supports states in providing safe drinking water to rural areas, emphasising water quality monitoring and community participation.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** Promotes efficient water use in agriculture through watershed management, micro-irrigation, and rainwater harvesting.
- **Atal Bhujal Yojana (ABHY):** Aims to improve groundwater management through community participation, recharge measures, and water-use efficiency practices.
- **National Water Mission (NWM):** Aims to conserve water, minimise wastage, and ensure equitable distribution through integrated water resources management.
- **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act):** Includes water

conservation and harvesting works as part of rural employment generation activities, such as construction of check dams and farm ponds.

- **Per Drop More Crop (Micro Irrigation Fund):** Promotes micro-irrigation systems to enhance water use efficiency in agriculture, supported by interest subvention and subsidies.

Way Forward

- **Traditional and technological methods:** Integrate ancient practices like rainwater harvesting with modern technologies for efficiency and scale.
- **Financial:** Increase funding through schemes like the National Bank for Agriculture and Rural Development (NABARD) for watershed projects and subsidies for adopting drip irrigation systems.
- **Mapping and Awareness:** Use Geographic Information System (GIS) mapping (e.g., Bhuvan platform by ISRO) to assess water availability and launch awareness campaigns like 'Jal Shakti Abhiyan' to educate communities.
- **Decentralised water treatment:** More power to Panchayats urban local bodies. Implement local treatment systems to improve water quality and accessibility in rural areas.
- **Innovative models & case studies:** Showcase successful models such as the 'Sujalam Sufalam Jal Abhiyan' in Gujarat, focusing on community participation in water conservation and management.

Conclusion

In safeguarding water as a fundamental right under Article 21, collective efforts in conservation and equitable access promise a sustainable future, ensuring every individual's right to a clean and adequate water supply.

Expected Questions for UPSC CSE

Prelims MCQ

Q. Consider the following pairs

Traditional water storage	States
1. Johad	Rajasthan
2. Eri	Tamil Nadu
3. Kulh	Madhya Pradesh

How many of the above pairs are correctly matched?

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

Answer: (b) 1 and 2 only

Descriptive Question:

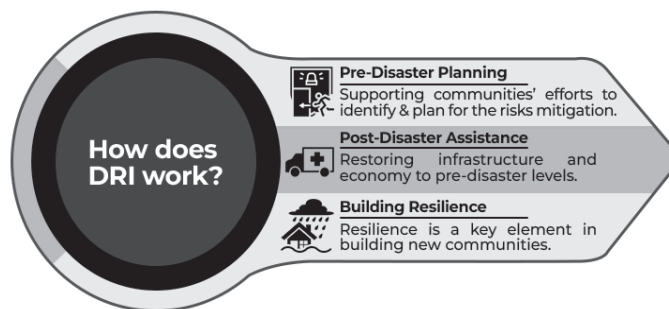
Q. Discuss the factors contributing to the water crisis in urban India. What are the socio-economic and environmental consequences of this crisis? Suggest measures to ensure sustainable management of water resources in urban areas. [15 Marks] [250 words]

DISASTER RESILIENT INFRASTRUCTURE

Why in News: The record breaking heatwave conditions and its consequences has put the spotlight on the significance of resilient infrastructure across the world.

What is Disaster Resilient Infrastructure?

- According to **Coalition for Disaster Resilient Infrastructure (CDRI)**, Disaster Resilient Infrastructure (DRI) refers to the infrastructure systems and networks, the components, and assets thereof, and the services they provide, that are able to resist and absorb disaster impacts, maintain adequate levels of service continuity during crises, and swiftly recover in such a manner that future risks are reduced or prevented.
- DRIs are not just buildings that can withstand disasters. They are also systems, processes, and strategies that improve infrastructure resilience to disasters and help people to recover faster and stronger after disasters strike.



Need for Disaster Resilient Infrastructure

- The need for disaster-resilient infrastructure is becoming imperative as the **density of built environments and urban centres** increases across the world.
- In today's **interconnected world**, a failure in one system like power, water, transportation etc. can trigger cascading disruptions in others.
- It **strengthens the capacity** of communities and societies to manage and recover from disasters, contributing to long-term sustainability, durability, and economic stability.
- It is estimated that by 2030, without substantial investments in fortifying cities globally against potential threats, natural disasters could inflict an annual financial burden of approx. \$ 314 billion on cities.
- Therefore, transitioning to Disaster Resilient Infrastructure (DRI) and flexible urban strategies is essential for improving the quality of life for people.

How to improve disaster resilience in the built environment?

- **Understanding of the evolving risks:** This will help in setting up appropriate building codes and design standards for integrated resilience across diverse sectors.

- **Integrating disaster-resilient materials and components:** They augment the performance of a building or infrastructure during disaster.
- **Designing and constructing disaster-resilient structures**
 - **Earthquake-resistant structures** – ensuring structures can absorb and distribute seismic forces without collapse.
 - **Tsunami and flood-resilient infrastructure** – targeting flood-prone areas.
 - **Temperature-resistant infrastructure** – designed to withstand extreme fluctuations in temperature.
 - **Cyclone and wind-resistant construction** – utilising aerodynamic designs, reinforced structures, secure roofing materials, streamlined shapes, and strategic orientation to increase resilience to extreme wind events.
- **Disaster-proofing systems and networks:** Ensuring the continuity of transportation, communication systems, and utilities is essential for meeting basic needs during an emergency, aiding the emergency response and promoting faster recovery.
- **Use of simulations:** Simulation technology supports rapid testing, iteration and optimisation of scenarios to add tremendous value in generating disaster resilience solutions.

Challenges in creating disaster-resilient infrastructure

- **Complexity of cities:** Cities are complex and have evolved organically without disaster-proofing in mind.
- **Cost:** Implementing resilience measures, particularly within existing infrastructure can be costly and time-consuming, requiring extensive planning and investment.
- **Difficulty in accurately predicting** the impacts of diverse emergency scenarios.
- **Coordinating resiliency efforts** across different sectors, regions and stakeholders is particularly challenging.

Conclusion

Building a disaster-resilient infrastructure is a complex task, requiring a blend of strategic planning, innovation, finance and a collective approach. Nations need to champion these components, ensuring they are not only prepared for future calamities but also poised for sustainable growth.

Coalition for Disaster Resilient Infrastructure (CDRI)

- CDRI is a partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and knowledge institutions that aims to promote the resilience of new and existing infrastructure systems to climate and disaster risks in support of sustainable development.

- It promotes rapid development of resilient infrastructure to respond to the Sustainable Development Goals’ imperatives of expanding universal access to basic services, enabling prosperity and decent work.
- It was launched by PM Narendra Modi at the 2019 UN Climate Action Summit in New York.
- Secretariat: New Delhi

Notified Disasters in India

- The Disaster Management Act, 2005 defines a disaster as a “catastrophe, mishap, calamity or grave occurrence” arising from “natural or man-made causes” that results in substantial loss of life, destruction of property, or damage to the environment. It must also be of such nature which is “beyond the coping capacity” of the community.
- Currently, there are 12 categories of disasters which are notified under this Act. These are cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, and frost & cold waves.
- Heatwaves are not included in the notified disasters list. The centre is somewhat reluctant to add heatwaves in the list disasters, reasons:-
 - Finance Commission Reluctance - Huge financial implications.
 - Practical Difficulties - Heat itself does not claim lives. Most people die due to pre-existing conditions.

Expected UPSC CSE Questions

Prelims MCQ

Q. Consider the following disasters:

1. Flood	2. Drought
3. Frost & coldwave	4. Heatwave

How many of the above disasters are notified under the Disaster Management Act, 2005?

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

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

Descriptive Question

Q. Examine the statement, ‘Resilient infrastructure is an indispensable foundation for achieving sustainable development’. [15 Marks] [250 words]

ASSAM FLOODS

Why in News: Assam State Disaster Management Authority (ASDMA) reported over 6 lakh people affected by floods across nine districts.

Key Details

- **Multi Hazard Disaster:** These floods are accompanied by landslides and storms which have damaged infrastructure and crops.
- **Cause:** Incessant rains have caused major rivers like Kopili, Barak and Kushiya to overflow.
 - ◆ Kopili is the largest south bank tributary of the Brahmaputra in Assam.
 - ◆ Kushiya is a tributary of the Barak river.
- **Relief Efforts:** Around 150 relief camps have been setup and various agencies have been mobilised like NDRF, SDRF, local administration and medical teams.

Reasons for Annual Flooding in Assam

- **River Sedimentation:** Brahmaputra and Barak river valleys dominate Assam's landscape which have massive sediment deposits, raising riverbed levels and increasing flood risk.
- **Assam's Geography:** Assam is at the foothills and with low elevation which leads to heavy sedimentation
- **Monsoon:** 85% of annual rainfall in the Brahmaputra basin occurs during monsoons, saturating the soil.
- **Riverbank Erosion:** Erosion widens rivers which has led to Brahmaputra's banks expanding to 15km. This increases flooding.
- **Counterproductive Embankments:** Many embankments are outdated, damaged, or breached, leading to flooding in surrounding areas. Also, embankments encourage encroachment on riverbanks, increasing vulnerability.
- **Environmental Damage:** Deforestation, hill cutting, wetland destruction worsen floods.
- **Climate Change:** Global warming intensifies rainfall patterns and glacier melt, leading to more extreme floods.

Flood Mitigation Measures

- **Improved Alert and Forecasting:** Provide more credible flood information to enable better preparedness and resident alerts.
- **Sluice Gates:** Construct sluice gates to regulate water flow as these are designed to seal in one direction.
- **Dredging Rivers:** Remove sediments to improve river capacity.
- **Flood Plain Zoning:** Enact laws to restrict activities in floodplains, minimizing damage.
- **Mitigation Measures:** Implement afforestation and wetland rejuvenation programs.
- **Boost Coordination:** Various organisations as mentioned below must act together:
 - ◆ State Level: Water Resources Departments, State Technical Advisory Committee, Flood Control Board.
 - ◆ Union Level: Central Water Commission, Brahmaputra Board, National Disaster Management Authority.

- **Policy Measures** undertaken by the government include setting up the **R Rangachari Committee** for recommendations on flood control and the various **National Water Policy** (1987/2002/2012) which emphasise flood management. They need to be implemented rigorously.

The Case Study - Integrated Flood Risk Management Plan (IFRMP) in Assam

- The successful implementation of IFRMP in Assam's River Basins (Beki, Buridehing and Jiadhal) focused on a multi-disciplinary approach involving key stakeholders like Assam State Disaster Management Authority, Water Resource Department, local governments and NGOs.
- It amplified capacity building and stakeholder engagement through regular consultations and workshops.
- Special attention was given to disaster risk management. Critical components included anti-erosion measures using innovative materials like geobags & porcupine concrete pillars, strengthening flood embankments.
- The project reduced flood and river erosion risks for approximately 100,000 people along Beki and Buridehing rivers.

Conclusion

A 2017 Comptroller and Auditor General report highlighted the lack of proper flood-prone area identification despite recommendations. By bringing in digital elevation models and flood inundation maps, as outlined in the National Water Policy 2012, we can give a significant boost to flood management in India.

Expected Questions for UPSC CSE

Prelims MCQ

- Q. Which of the following is NOT an effective flood mitigation measure?
- (a) Construction of sluice gates to regulate waterflow.
 - (b) Wetland rejuvenation and afforestation programmes.
 - (c) River dredging
 - (d) Deforestation and hill cutting

(d) Answer

Descriptive Question

- Q. What are the primary causes of increased annual flooding in Assam? What steps can be taken to mitigate this disaster? [15 Marks] [250 words]

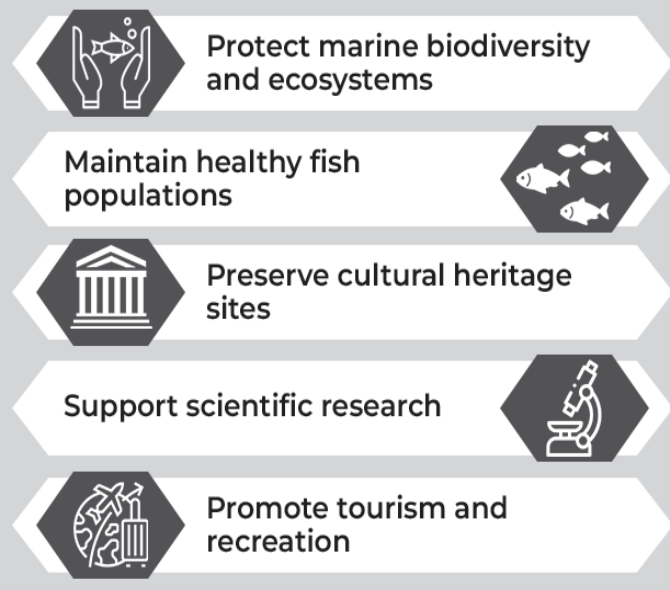
MARINE-PROTECTED AREAS

Why in News: As part of a 780 million euro effort to safeguard marine ecosystems and biodiversity, Greece plans to establish two major marine parks as marine protected areas.

About Marine-Protected Areas

- A Marine Protected Area (MPA) is a designated section of the ocean or coastline where human activities are restricted for the purpose of conservation.
- These areas serve as underwater sanctuaries, safeguarding marine life, ecosystems, and even cultural heritage sites.
- The Southern Ocean has two MPAs — one in the southern shelf of the South Orkney Islands and the other in the Ross Sea.
- In March 2023, India expressed support for establishing Marine Protected Areas (MPAs) in East Antarctica and the Weddell Sea.
- Currently, MPAs represent only about 6 % of the ocean. Of this, 2.4 % are fully and highly protected and 3.6 % are highly protected.

Purpose of Marine protected areas



Who Can Establish Marine Protected Areas (MPAs)?

- **National Governments:** The Great Barrier Reef Marine Park (Australia).
- **International Organisations:** The World Heritage Marine Sites: Designated by UNESCO, such as the Malpelo Fauna and Flora Sanctuary (Colombia).
- **Regional Bodies:** The OSPAR Network of Marine Protected Areas: Established by the Oskar Commission to protect marine biodiversity in the North-East Atlantic Ocean.
- **Local Governments:** The Looe Marine Conservation Zone (UK): Established by the Cornwall Area of Outstanding

Natural Beauty to protect a unique ecosystem with diverse marine life.

- **Indigenous Communities:** The Tanu (Torres Strait) Indigenous Protected Area (Australia): Co-managed by Indigenous communities and the Australian government.

Marine Protected Areas (MPAs) in India

- India has a rich marine biodiversity and has taken steps towards its conservation by establishing a network of MPAs.
- **Number of MPAs:** Approximately 31 MPAs established as of 2023. Andaman and Nicobar Islands have a maximum eleven marine protected areas.
- **Types of MPAs:** These MPAs encompass various categories, including:
 - Marine National Parks
 - Marine Sanctuaries
- **Laws and regulations:** The Environment (Protection) Act, 1986, Coastal Regulation Zone Notification, 1991 and National Biodiversity Act, 2002 have been enacted in India for conservation of coastal and marine environment, along with the Wildlife (Protection) Act 1972.
 - In India, Protected Areas that fall entirely or partially within the swathe of 500 m from the high tide line and the marine environment are considered to be in the MPA network.
- **Status :** Government of India has notified 130 Marine Protected Areas across the Coastal States and Islands; in addition 106 coastal and marine sites have been identified and prioritized as Important Coastal and Marine Biodiversity Areas (ICMBAs) to take care of marine species conservation .

Classification of Marine Protection area

- **Category I:** Covers National Parks and Sanctuaries having entire areas in intertidal/sub-tidal or mangroves, coral reefs, creeks, seagrass beds, algal beds, estuaries, and lagoons.
- **Category II:** Includes Islands, which have major parts in the marine ecosystem.
- **Category IIIA:** includes sandy beaches beyond the intertidal line but occasionally interacting with the seawater.
- **Category IIIB:** Includes evergreen or semi-evergreen forests adjutant to sea.

Examples of MPAs part of UNESCO sites

- **Gulf of Kachchh Marine National Park (Gujarat):** Protects a unique ecosystem in the Gulf of Kachchh, including mangroves, coral reefs, and marine life like dolphins and whales.
- **Gulf of Mannar Marine National Park (Tamil Nadu):** Known for its coral reefs, seaweed beds, and diverse marine life, including endangered sea turtles.

HIGH SEAS BIODIVERSITY TREATY

Why in News: The director general of the International Union for Conservation of Nature (IUCN), urged countries worldwide “to strive for a fully functional High Seas Biodiversity Treaty” on World Oceans Day 2024 (8 June).

Key Details

- **Purpose:** The Biodiversity Beyond National Jurisdiction Treaty or High Seas Biodiversity Treaty aims to conserve and sustainably use marine biodiversity beyond national jurisdiction (high seas), which constitute about 50% of Earth’s surface.
- **Need:** High seas are vulnerable to overfishing, habitat destruction, climate change impacts, and lack of effective governance, necessitating international cooperation for conservation.
- **Negotiation Process:** Negotiations began in 2018 under the United Nations Convention on the Law of the Sea (UNCLOS), involving multiple stakeholders including governments, scientists, and NGOs.
- **Effective:** It will only enter “into force” once 60 countries have signed up and legally passed the legislation in their own countries.
- India is yet to sign the treaty, however, it had demanded for its implementation at the G20 New Delhi Leaders’ Declaration held in September 2023.



About High sea

Definition: The high seas refer to the portion of the ocean beyond any country’s exclusive economic zone (EEZ), typically starting 200 nautical miles from the coast.

Legal Status: Considered international waters under the United Nations Convention on the Law of the Sea (UNCLOS), where no single country exercises sovereignty.

Freedom of Use: States enjoy freedoms such as navigation,

overflight, laying of cables and pipelines, fishing, and marine scientific research on the high seas.

Extent: Covering about 64% of the ocean’s surface and about 95% of its total volume, the high seas are vast and crucial for global marine biodiversity and ecosystem health.

Existing laws/regulations on HIGH SEAS

- **Law of the Sea Convention (UNCLOS):** Sets the basic legal framework for all ocean spaces, including freedom of navigation and resource exploration rights in international waters (beyond Exclusive Economic Zones).
- **International Maritime Organization (IMO) Regulations:** Address safety, pollution prevention, and liability for ship operations on the high seas.
- **Treaties on Specific Issues:**
 - **Pollution Control:**
 - ◆ London Convention on Dumping of Wastes at Sea (LCDS).
 - ◆ International Convention for the Prevention of Pollution from Ships (MARPOL).
 - **Fishing Sustainability:**
 - ◆ UN Agreement on Straddling and Highly Migratory Fish Stocks (UNFSA).
 - ◆ Convention on the Conservation of Migratory Species of Wild Animals (CMS).
 - **Resource Management:**
 - ◆ International Seabed Authority (ISA) Regulations on Prospecting and Exploration of Mineral Resources in the Area.

Threats For High Sea

- **Overfishing:** A 2023 report by The Pew Charitable Trusts found that over 60% of commercially fished stocks on the high seas are classified as overfished.
- **Biodiversity loss:** Unsustainable fishing practices like bottom trawling can destroy fragile deep-sea ecosystems and threaten commercially valuable fish populations.
- **Pollution:** The United Nations Environment Programme (UNEP) estimates that 8 million tons of plastic enter the ocean each year, accumulating in the high seas.
- **Climate Change:** Rising ocean temperatures acidify the water, harming marine food webs. A 2022 IPCC report states ocean heat content has reached record highs.
- **Destructive Fishing Practices:** Practices like shark finning, where fins are removed and the animal discarded, threaten entire shark populations important for maintaining healthy marine ecosystems.
- **Seabed Mining:** Extracting minerals from the deep seabed could disrupt delicate ecosystems and introduce pollution into the water column.
- **Deep-Sea Geoengineering:** Theoretical proposals to address climate change by manipulating the

ocean environment have uncertain environmental consequences.

Significance of the High Sea Treaty

- **Vast Ecosystem:** The high seas, encompassing over 64% of the global ocean, teem with life.
- **Environmental Importance:** Microscopic marine plants (phytoplankton) produce nearly half of Earth's oxygen.
- **Biodiversity:** While whales undertake epic migrations across vast stretches of international waters.
- **Climate Regulation:** The high seas act as a giant carbon sink, absorbing an estimated 25% of human-caused CO₂ emissions each year.
- **Economic Engine:** Food security. The Food and Agriculture Organization (FAO) estimates that marine capture fisheries provide nearly 20% of the animal protein consumed globally.
- **Scientific Importance:** Largely unexplored, holding immense potential for scientific discoveries. Unique ecosystems like hydrothermal vents harbour extremophile organisms with potential applications in medicine and biotechnology.
- **Navigation & Connectivity:** Essential for international shipping. Over 90% of global trade travels by sea, relying on freedom of navigation on the high seas.
- **Internet connectivity:** Undersea cables laid on the high seas connect continents, forming the backbone of global internet communication.

Conclusion

In the evolving context of the High Seas Treaty, international efforts converge to protect marine biodiversity, promote sustainable ocean governance, and ensure equitable resource management beyond national boundaries.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. The high seas refer to the portion of the ocean beyond any country's exclusive economic zone (EEZ).
2. Rising ocean temperatures acidify the ocean water.
3. Fishing practices like bottom trawling can destroy fragile deep-sea ecosystems.
4. The high seas act as a giant carbon sink, absorbing an estimated half of human-caused CO₂ emissions each year.

Which of the above statements is/are correct?

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

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

Descriptive Question

Q. In the context of global environmental governance, how can the High Seas Treaty balance the imperative of conserving marine biodiversity with the diverse economic interests and regulatory complexities associated with sustainable management of international waters? (15 marks) (250 words)

ANTARCTIC TREATY

Why in News: The 26th Meeting of the Committee for Environmental Protection (CEP 26) and the 46th Antarctic Treaty Consultative Meeting (ATCM 46) were held in Kochi, Kerala, from May 20–30, 2024.

Key Points

- **Host:** Organised by the Ministry of Earth Sciences (MoES) through the National Centre for Polar and Ocean Research (NCPOR).
- **Attendance:** A total of 404 delegates registered, with 328 attending in person and 76 virtually, representing all 56 ATCP members.
- **Key Discussions:**
 - Operation of the Antarctic Treaty System.
 - Liability issues related to Antarctic activities.
 - Biological prospecting regulations.
 - Information exchange and data sharing protocols.
 - Sustainable tourism development framework for the continent.

Increasing Importance of the Antarctica

- **Environmental Monitoring:** Critical indicator of global climate change and atmospheric observation. For example, (June 2024) highlights record-low winter sea ice extent around Antarctica, potentially linked to human-caused warming.
- **Resource Potential:** Holds valuable minerals and potential for oil and gas, raising interest in responsible exploration. Debates are ongoing regarding regulations for krill harvesting, a crucial element in the Southern Ocean food chain.
- **Scientific Research:** Unique environment offers unparalleled opportunities in various scientific fields (e.g. IceCube Neutrino Observatory).
- **New Discoveries:** Scientists recently discovered a massive subglacial lake beneath the Denman Glacier, hinting at hidden water systems that could impact ice sheet stability.
- **Geopolitical Interests:** Growing interest from nations seeking influence and potential resource access. (e.g. China's new research station).
- **Global commons:** The 46th Antarctic Treaty Consultative Meeting (ATCM 46) held in May 2024 emphasised the

importance of international collaboration for managing Antarctica's future.

- **Indicator of biodiversity:** with ecosystems like penguin and krill populations reflecting environmental health.
- **Tourism and Adventure:** Untouched landscapes attract adventure tourists (IAATO recorded over 100,000 visitors in 2022-23). New regulations are being proposed to ensure sustainable tourism practices that minimise environmental impact in Antarctica.

About Antarctic Treaty

Established: Signed in 1959, entered into effect in 1961.

Membership: Currently, 56 countries are Consultative Parties. Consultative Party status requires a significant scientific research program in Antarctica. India joined it in 1983.

Purpose:

- Established to ensure Antarctica is used for peaceful purposes only.
- Prohibits military activity, nuclear explosions, and the disposal of radioactive waste.
- Promotes international scientific cooperation.
- Sets aside potential territorial disputes.

Key Provisions:

- **Peaceful Use (Article 1):** Antarctica shall be used exclusively for peaceful purposes. Military activity, such as the establishment of military bases or weapons testing, is prohibited.
- **Freedom of Scientific Investigation (Article 2):** Scientific research in Antarctica shall be facilitated and freely conducted. International scientific cooperation is encouraged.
- **Freedom of Information (Article 3):** Information regarding Antarctica, including scientific programs and results, shall be exchanged and made freely available.
- **Prohibition of Nuclear Explosions and Disposal of Radioactive Waste (Article 5):** Any nuclear explosions or disposal of radioactive waste material in Antarctica is prohibited.
- **Inspection System (Article 7):** Consultative Parties (countries with a substantial scientific research program) have the right to designate observers to inspect stations, equipment, ships and aircraft operating in Antarctica to ensure observance of the Treaty.
- **Dispute Settlement (Article XI):** Disputes concerning the interpretation or application of the Treaty shall be settled peacefully by the Consultative Parties.

43rd Indian Scientific Expedition to Antarctica (43-ISEA):

- **Focus:** Climate change and its impact on Antarctica.
- **Collaboration:** Scientists from Mauritius and Bangladesh join India.
- **Research themes:** Climate processes, ice dynamics, sea level rise, paleoclimate studies, surface processes.

- **New initiative:** Geological Exploration of Amery Ice Shelf (GeoEAIS).
- **Other areas of study:** Crustal evolution, environmental processes, ecosystems, atmospheric observations, oceanography.
- **Significance:** International collaboration for environmental stewardship in polar regions.

India in Antarctica

- **Research Stations:**
 - Established Dakshin Gangotri station in 1983, the first Indian research station in Antarctica.
 - Operates a second station, Maitri, since 1989.
 - Stations support diverse scientific research programs (e.g., glaciology, atmospheric science, biology).
- **Research Programs:**
 - Conducts research in various fields, including:
 - ◆ Climate change and its impact on Antarctic ice sheets.
 - ◆ Geology and mineral resources.
 - ◆ Upper atmosphere and cosmic rays (e.g., studies with the Maitri Cosmic Ray Observatory).
 - ◆ Marine biology and the Southern Ocean ecosystem.
- **Membership in Antarctic Treaty System:**
 - A Consultative Party to the Antarctic Treaty since 1983, demonstrating commitment to peaceful and scientific endeavours.
 - Participates actively in Antarctic Treaty Consultative Meetings (ATCMs) to shape the future of Antarctic governance.
- **Logistics and Support:**
 - Utilises research vessels and chartered aircraft for transportation and resupply missions.
 - The Indian Antarctic Programme (IAP) coordinates research activities and logistics.
- **International Collaboration:**
 - Collaborates with other Antarctic Treaty nations on research projects and data sharing.
 - Example: joint research with Japan on the impact of climate change on Antarctic glaciers.
- **Environment**
 - Recent research by Indian scientists at Maitri Station focused on the impact of climate change on penguin populations.
 - India actively advocates for the creation of a Marine Protected Area (MPA) in the East Antarctic region to safeguard marine biodiversity.

Conclusion

The conclusion of ATCM-46 underscored collective commitments to environmental stewardship, sustainable practices, and scientific collaboration, affirming Antarctica's status as a protected zone for peace, research, and the global commons.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following research stations:

1. Dakshin Gangotri
2. Maitri
3. Himadri

How many of the above research stations are established by India in Antarctica?

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

Answer: (b) (1 & 2 only)

Descriptive Question

Q. Analyze the role of the Antarctic Treaty in promoting scientific research, environmental conservation, and international peace. What measures should be taken to strengthen the implementation of treaty objectives in light of emerging environmental and geopolitical challenges? [15 Marks] [250 words]

GREEN HYDROGEN

Why in News: Ministry of New and Renewable Energy (MNRE) expands Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme capacity to strengthen Green Hydrogen Mission.

Key Details

Objective

- MNRE has increased the annual allocation for green ammonia production from 5,50,000 to 7,50,000 tonnes per annum.
- Bidding of total available capacity of Green Ammonia intended for production and supply will be carried out through e-bidding followed by e-Reverse Auction process.
- Green Ammonia produced will be supplied to the fertilizer companies.

Incentive Mechanisms

- **Domestic Manufacturing of Electrolysers:** Financial incentives are provided to support the domestic manufacturing of electrolysers.

- **Green Hydrogen Production:** Incentives also encourage the production of green hydrogen.

Expected Outcomes by 2030

- Develop green hydrogen production capacity of at least 5 million metric tonnes (MMT) per annum.
- Add approximately 125 GW of renewable energy capacity.
- Create over 6 lakh jobs.
- Reduce fossil fuel imports by over ₹1 lakh crore.
- Avert nearly 50 MMT of annual greenhouse gas emissions.

About Green Ammonia

- **Production Process:** Produced through a process called **Haber-Bosch synthesis using hydrogen (H₂) and nitrogen (N₂)**. Green ammonia production involves electrolysis to generate hydrogen from renewable sources like wind or solar power.
- **Environmental Benefits:** Significantly reduces carbon dioxide (CO₂) emissions compared to traditional ammonia production.
- **Applications:** Used as a fertilizer in agriculture due to its high nitrogen content. Potential applications in energy storage and transportation as a carbon-neutral fuel.
- **Global Initiatives:** Countries like Norway and Australia are investing in green ammonia production facilities.

Types of Hydrogen

THE HYDROGEN COLOUR SPECTRUM

GREEN	BLUE	GREY
Hydrogen produced by electrolysis of water, using electricity from renewable sources like wind or solar. Zero CO ₂ emissions are produced.	Hydrogen produced from fossil fuels (i.e., grey, black, or brown hydrogen) where CO ₂ is captured and either stored or repurposed.	Hydrogen extracted from natural gas using steam-methane reforming. This is the most common form of hydrogen production in the world today.
PURPLE/PINK	TURQUOISE	BROWN/BLACK
Hydrogen produced by electrolysis using nuclear power.	Hydrogen produced by thermal splitting of methane (methane pyrolysis). Instead of CO ₂ solid carbon is produced.	Hydrogen extracted from coal using gasification.
YELLOW	WHITE	
Hydrogen produced by electrolysis using grid electricity from various sources (i.e., renewables and fossil fuels).	Hydrogen produced as a byproduct of industrial processes. Also refers to hydrogen occurring in its (rare) natural form.	

Significance of Green Hydrogen

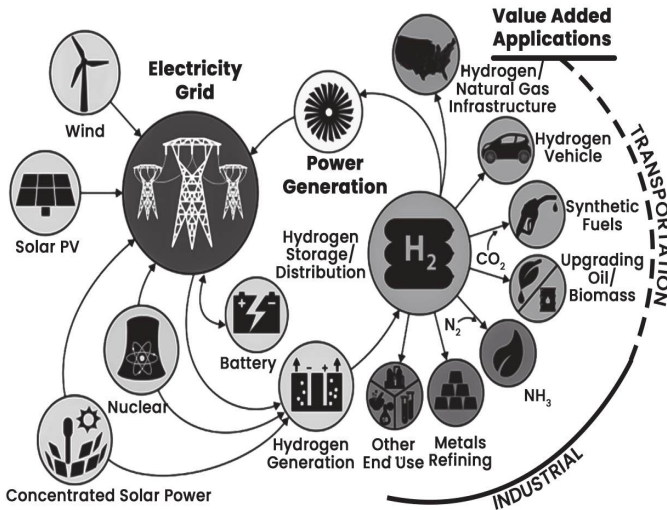
- **Clean Energy Source:** Produced using renewable electricity (e.g., wind, solar) through electrolysis, generating hydrogen (H₂) from water without carbon emissions. Electrolyzers can achieve efficiencies of up to 80-90.
- **Versatile Applications:** Used in industry (e.g., refining, chemicals), transportation (e.g., fuel cell vehicles), and power generation (e.g., grid balancing, energy storage). **Example:** Germany's GET H₂ initiative aims to develop a hydrogen infrastructure for industrial and mobility sectors.
- **Energy Transition Catalyst:** Facilitates integration of

renewable energy into sectors traditionally reliant on fossil fuels, reducing dependency on imported fuels.

- **Export potential:** Australia’s National Hydrogen Strategy targets hydrogen exports to Asia, aiming to build a hydrogen export industry by 2030.
- **Economic Potential:** Global hydrogen market could reach \$2.5 trillion by 2050, with green hydrogen playing a crucial role in this growth.

Applications of Green Hydrogen

Future H₂ at Scale Energy System



- **Transportation:** Green hydrogen can power fuel cell electric vehicles (FCEVs) and heavy-duty trucks. For example, Germany’s Alstom Coradia iLint trains run on hydrogen fuel cells.
- **Industry:** Industries like steel, ammonia, and chemicals can use green hydrogen as a feedstock or for heating processes.
- **Energy Storage:** Hydrogen can store excess renewable energy for later use, helping balance the grid.
- **Power Generation:** Hydrogen can be burned in gas turbines or used in fuel cells to generate electricity.

Challenges in scaling up green hydrogen production in India

- **High Initial Investment:** Electrolyser costs are a significant barrier, with current prices around \$800-\$1,200 per kW.
- **Technological Maturity:** Current electrolyzer efficiency ranges from 60% to 80%, impacting overall hydrogen production costs.
- **Cost Competitiveness:** Green hydrogen production costs are currently higher than grey or blue hydrogen.
- **Infrastructure Development:** Limited hydrogen refueling stations and storage facilities.
- **Policy and Regulatory Framework:** Lack of specific policies and incentives for green hydrogen production and consumption.

- **Skill Development:** Training programs and collaborations with technical institutions are necessary to build a skilled workforce for the hydrogen sector.
- **Global Competition:** Global advancements in green hydrogen production and export markets pose competition. The European Union’s Hydrogen Strategy plans to install 40 GW of electrolyzers by 2030.

Domestic and Global initiatives to boost green hydrogen production

- **National Green Hydrogen Mission:** Launched on January 4, 2023, to develop green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum by 2030.
- **Hydrogen Council:** A global initiative promoting hydrogen as a key solution for a low-carbon future.
- **The Green Hydrogen Catapult:** A coalition of green hydrogen market leaders, convened with the support of the UN High-Level Climate Champions and RMI.
- **Green Hydrogen for Scotland:** A project aiming to produce hydrogen from offshore wind energy.

Way Forward

- **Policy Framework:** Rationalisation of green hydrogen regulations, and certification standards to generate the demand and attract investments. For example, Green Energy Open Access Rules(GOAR)-2022.
- **Financial Support:** Alongwith the financing options of debt and equity, green financing facilities like Green Bonds & Sovereign Loans can be explored.
- **Renewable Energy Integration:** Increasing share of solar/ wind power for electrolysis-based hydrogen production.
- **Infrastructure Development:** Creating a comprehensive infrastructure network of Green Hydrogen Hubs and refuelling stations to address the green hydrogen supply chain issues.
- **Intra- industry collaboration:** Engage diverse energy related sectors (steel, transport, fertiliser) for adoption and utilisation of low cost green hydrogen.
- **Focus on skill development:** Through skilling, upskilling and reskilling of trained workforce in hydrogen technologies.
- **International cooperation and collaboration:** Collaborate globally on knowledge sharing and technology advancement.

Conclusion

In embracing green hydrogen, India pioneers a sustainable energy future, surmounting initial hurdles with technological advancements and strategic investments to lead in global decarbonization efforts and economic transformation.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

1. Hydrogen is the most abundant element in the universe but rarely occurs in its pure form on Earth.
2. Green hydrogen is being explored as a storage solution for renewable energy surplus, helping to balance grid fluctuations and support energy security.

Which of the statements given above is/are correct?

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

Answer: (c)

Descriptive Question

Q. "Examine the feasibility and challenges of India's shift towards a green hydrogen economy, evaluating its impact on energy security, economic sustainability, and international climate commitments." [15 Marks] [250 words]

- **Differences from Apes:** Apes are mostly tailless and bigger than monkeys which have narrower chests and a smaller frame.

Conservation Challenges

- **Habitat Fragmentation:** Due to a railway track running through Hollongapar sanctuary.
- **Illegal poaching and hunting:** Habitat destruction and hunting are other major threats leading to declining populations of both the Hoolock Gibbon species in India.

Conservation Efforts

- **Government Initiatives:** The Wildlife Institute of India has designed bridges to allow for natural integration with the forest canopy. Canopy bridges are a crucial conservation strategy for Hoolock Gibbons, as they minimize their need to descend to the ground where they are more vulnerable.
- **Local level initiatives:** Monitoring of the Hoolock Gibbon population will be conducted through:
 - Collection of behavioural data by trained local communities and forest rangers.
 - Deployment of camera traps.
 - Potential population and genetic studies to assess the effectiveness of the conservation measures.
 - Legislative measures: Protection under Wildlife Protection Act prohibits their hunting and illegal trade.

HOOLOCK GIBBON

Why in News: Northeast Frontier Railway (NFR) is constructing environmentally friendly canopy bridges to ensure safety and facilitate movement of Hoolock Gibbon apes in Hollongapar Gibbon Sanctuary, Assam.



Key Details

About Hoolock Gibbon

- The tailless Hoolock Gibbon is the only ape species in India.
- It is the flagship species of the Hollongapar sanctuary.

IUCN Status:

- Western Hoolock Gibbon is Endangered
- Eastern Hoolock Gibbon is Vulnerable

Indian (Wildlife) Protection Act 1972: Schedule 1

- **Distribution:** Western Hoolock Gibbon is spread across the north eastern states between the river Brahmaputra and Dibang river. The Eastern Hoolock Gibbon is found in parts of Arunachal Pradesh and Assam.
- **Behavioural Characteristics:** Hoolock Gibbons are arboreal animals, spending most of their time in the upper canopy of tall trees. The Gibbon is known for vocalisation and gets its name from hanging out on the hollong (*Dipterocarpus macrocarpus*).

Primates of India

India boasts a remarkable diversity of primates, encompassing over **24 species**. These include **langurs, macaques, lorises**, and even the impressive Hoolock Gibbon, India's sole ape species. However, many of these primates face significant threats. The majestic **Lion-tailed Macaque**, restricted to the Western Ghats, is critically endangered. The **Kashmir Gray Langur**, found in the Himalayan foothills, is another endangered species struggling with habitat loss. Even the **Bengal Slow Loris**, the only loris native to India, is classified as vulnerable due to the illegal pet trade and habitat destruction. The vibrant **Phayre's Leaf Monkey**, inhabiting Northeast India and parts of Myanmar, is yet another endangered primate in this rich ecosystem.

Conclusion

The construction of innovative canopy bridges in Assam's Hollongapar Gibbon Sanctuary represents a significant step towards the conservation of the endangered Hoolock Gibbon. These bridges address the challenge of habitat fragmentation caused by the railway track, allowing safe passage for the apes within the forest canopy. The carefully designed bridges, coupled with population monitoring efforts, offer a promising solution for protecting India's only ape species.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to 'Hoolock Gibbon,' consider the following statements:

1. It is the only ape species found in India.
2. Both the Western Hoolock Gibbon and Eastern Hoolock Gibbon are listed as 'Endangered' on the IUCN Red List.
3. This species lives in tropical and subtropical forests in the southeastern part of Asia.
4. Gibbon is the smallest and fastest among all the Apes.

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 only)

Descriptive Question

Q. Enumerate the various primates found in India and protection provided them as per the Wildlife protection Act, 1972. Also discuss the steps towards the conservation of the endangered Hoolock Gibbon. [10 marks][150 words]

GLOBAL SOIL PARTNERSHIP (GSP)

Why in News: In a step towards combating soil degradation, the Food and Agriculture Organization of the United Nations (FAO) and its Global Soil Partnership (GSP), have launched the Recarbonization of Agricultural Soils (RECSOIL) initiative in Armenia.

Key Details

About Global Soil Partnership

- **Established:** By the UN Food and Agriculture Organization (FAO) in December 2012.
- **Headquarters:** FAO Headquarters (Rome, Italy).
- **Purpose:** To develop a strong interactive partnership and enhanced collaboration and synergy of efforts between all stakeholders
- **Membership:**
 - Governmental Organizations (GOs), Intergovernmental Organizations (IGOs), Non-Governmental Organisations (NGOs), Research Institutions, Private Sector, Civil Society, Farmer Associations, Donors, Each member country of the FAO is automatically a partner to the GSP.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Global Soil Partnership (GSP):

1. It was launched by the UN Food and Agriculture Organization (FAO) in 2012.
2. Each member country of the FAO is automatically a partner to the GSP.

Which of the statements given above is/are correct?

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

Answer: (c)

Descriptive Question

Q. Soil is important for food security, climate change adaptation and mitigation & poverty reduction, critically evaluate? [10 marks] [150 words]

ECO-SENSITIVE ZONES IN WESTERN GHATS

Why in News: Recently, Karnataka, Maharashtra and Goa have requested the Central Government to reduce the extent of proposed eco-sensitive areas (ESA) in Western Ghat to allow development works.

Key Details

- **Issue:** Karnataka, Maharashtra and Goa disagree with the extent of Ecologically Sensitive Areas (ESAs) proposed in the Western Ghats.
- Ecologically Sensitive Areas (ESA), spread over 56,825 sq km in the western Ghats as notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC) in the first draft, issued in March 2014.
- An Expert Committee was appointed by the Centre to finalise a draft notification in 2022. The current draft is in the fifth version but the consensus has not been built yet between states and centre.
- **Expert Committee:** Appointed in July 2022 to finalise the draft notification.
 - Led by Sanjay Kumar, former Director General of Forests.
 - Considers state demands but prioritises ecological protection and a uniform approach.
 - To submit a report to the Environment Ministry by September.
- **Ecologically Sensitive Areas (ESAs):** Notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC).

- **Aim:** Protect biodiversity in areas with unique biological resources requiring special conservation efforts.
- **Eco-Sensitive Zones (ESZs):** Designated by MoEF&CC around Protected Areas.
 - **Purpose:** Manage and conserve biodiversity by providing buffer zones.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which one of the following committees is not related to the Western Ghats conservation efforts:

- (a) Expert Committee led by Sanjay Kumar
- (b) High-Level Working Group under the Chairmanship of Dr. Kasturirangan
- (c) Madhav Gadgil Committee
- (d) Western ghats development committee was constituted under Dr. D.P. Agrawal.

(p) :।ᄁᄁᄁᄁ

Descriptive Question

Q. "Policy differences among various competing sectors and stakeholders result in lack of 'sustainable conservation efforts' towards the environment." Comment with reference of Western ghats. (10 marks) (150 words)

- These mushrooms contain toxins and are therefore considered inappropriate for human consumption.

Other Organisms Showing Bioluminescence Properties

- Bioluminescence is found in a wide variety of organisms, including bacteria, fungi, insects, fish, and jellyfish. Example:
 - **Sea Sparkle:** Bioluminescence was witnessed along the Dakshina Kannada-Udupi coast due to the bloom of Dinoflagellates (Noctiluca scintillans), a type of marine plankton.

Bioluminescence as a Bioindicator of Global Warming

- According to scientists, the periodic sightings of bioluminescence in waters along Mumbai's beaches by the algal patches may be a consequence of algal bloom caused by coastal pollution in the ocean and global warming.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. The term, "Sea Sparkle" is talked about in the context of

- (a) Gamma-ray burst
- (b) Polymetallic nodules
- (c) Supernova
- (d) Bioluminescence

(p) :।ᄁᄁᄁᄁ

BIOLUMINESCENT MUSHROOMS

Why in News: Recently, a rare species of bioluminescent mushrooms was discovered in the forest of Kasaragod.

What are Bioluminescent Mushrooms?

- These are **fungi** species called **Filoboletus manipularis** which emit bright green light produced by energy released from a biochemical process involving luciferin (a pigment) and luciferase (an enzyme), with oxygen playing a critical role.
- **Bioluminescence** is the property of the production and emission of light by a living organism.
- This mushroom thrives in **tropical and humid environments** rich with nutrients necessary for its unique glowing properties.
- This mushroom acts as a **decomposer** and gets its nutrients by breaking down dead and decaying material on the forest floor.
- This glowing mechanism is an adaptation thought to attract insects, "which help disperse the mushroom's spores" to new locations, helping their reproduction.

BURP TAX

Why in News: Recently, New Zealand removed the 'burp tax' on livestock in the backdrop of farmers' protest.

Key Details

- Introduced in 2022, the 'Burp Tax' targeted to curtail methane emissions from ruminant species like cows and sheep when they burp or fart.
- Methane is a greenhouse gas, which traps the heat from the sun in the Earth's atmosphere, contributing to climate change.
- Nearly half of New Zealand's greenhouse gas emissions come from the country's cattle which is 10 million cattle and 25 million sheep.
- Natural processes account for 40% of methane emissions, with **Wetlands being the largest natural source**.

What are Ruminants and why do they emit methane?

- Ruminant species are hooved grazing or browsing herbivores that chew cud. Examples - cows, sheep, goats, and buffaloes.

QUANTUM SCIENCE AND TECHNOLOGY

Why in News: The United Nations has designated the year 2025 as the 'International Year of Quantum Science and Technology'. 2025 will mark the 100 years of Heisenberg's Uncertainty Principle.

Quantum Technology

Quantum Technology is based on the **principles of Quantum mechanics** developed in the early 20th century to describe nature at the scale of atoms and elementary particles.

Underlying principles:

- **Superposition:** A quantum system can exist in multiple states simultaneously.
- **Entanglement:** 2 or more particles become correlated in a way that one particle instantly influences the state of another irrespective of distance between them.
- **Wave-particle duality:** Quantum objects exhibit both wave-like and particle-like behaviour.
- **Uncertainty principle:** It is not possible to know both the exact position and exact momentum of a particle at the same time.

Domains of Quantum Technologies:

1. **Quantum Communication** Involves the use of quantum entanglement & superposition to enable secure communication channels and novel ways to transmit information.

Application: Quantum Key Distribution for secure communication networks, unbreakable encryption and quantum internet. **Example:** BB84 protocol; Micius Satellite of China

2. **Quantum Computation** Uses qubits (quantum bits) that can be in superposition & entangled with each other. This enables the performance of complex computations much faster than classical computers. **Application:** Cryptography; large scale simulations; solving optimization problems. **Example:** Shor's algorithm (quantum algorithm for finding prime factors of an integer); Grover's algorithm (for searching unsorted databases)
3. **Quantum Simulation** It helps simulate complex quantum systems that are difficult to model with classical computers. **Application:** Designing new materials; studying complex reactions; understanding

high temperature superconductors. **Example:** Simulating molecular behaviours for drug discovery; exploring novel states of matter

4. **Quantum Sensing & Metrology** Measuring physical quantities with extreme precision and sensitivity. **Application/Examples:** Atomic clocks; Medical imaging (MRI); Detecting gravitational waves; Environmental monitoring.

National Quantum Mission

Aim: To seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT). This will accelerate QT led economic growth, nurture the ecosystem in the country and make India one of the leading nations in the development of Quantum Technologies & Applications (QTA).

- Mission Implementation includes setting up of four Thematic Hubs (T-Hubs) in top academic and National R&D institutes in the domains:

1. Quantum Computing
2. Quantum Communication
3. Quantum Sensing & Metrology
4. Quantum Materials & Devices

The hubs which will focus on generation of new knowledge through basic and applied research as well as promote R&D in areas that are mandated to them.

Other Initiatives and Programs by Government of India

- Quantum Frontier mission of the PM-STIAC
- Department of Science & Technology has set up Quantum-Enabled Science & Technology (QuEST) – a research program to build quantum capabilities.

Challenges with respect to Quantum Technology

- **Scalability:** Scaling up quantum computers to hundreds or thousands of qubits while maintaining high levels of coherence and low error rates remains a major challenge.
- **Error Rates and Decoherence:** Qubits are highly susceptible to errors due to decoherence and noise from the environment.
- **Hardware Development:** Developing high-quality quantum hardware, such as qubits and control electronics, is a major challenge.

- **Software & Algorithms:** Quantum algorithms and software development tools are still in their infancy.
- **Infrastructure & Costs:** Development of quantum infrastructure remains an expensive endeavour.
- **Lack of Trained Professionals:** There is a shortage of skilled professionals and training institutions.
- **Ethical Considerations:** Data privacy and security; Inequality & Accessibility.

Classical Computing	Quantum Computing
Calculates with transistors that can have values either 0 or 1	Calculates with Qubits, that can have values 0 or 1 or both simultaneously
Power increases linearly with the number of transistors	Power increases exponentially in proportion to the number of Qubits
Have lower error rates	Have high error rates
Operates at room temperature	Operates at ultracold temperature
Less secured to work with	Much secured to work with
Suited for everyday processing tasks	Well suited for complex tasks like optimization problems, data analysis and simulations

Terminologies Related to Quantum Technology	
Term	Meaning
Algorithm	A set of rules or steps that a computer follows to solve a problem or perform a task.
Coherence	Refers to a situation where the property of particles or systems maintain a stable and predictable phase relationship.
Decoherence	The loss of quantum coherence, which is the ability of a quantum system to exist in multiple states simultaneously.
Entanglement	Phenomenon in quantum mechanics where two or more particles become correlated in such a way that the properties of one particle depends on the properties of the other particle, regardless of the distance between them.
Entropy	The term to quantify randomness within a system
Fidelity	The degree to which a quantum state is preserved during a quantum operation or measurement.
Hashing	A mathematical function that takes an input (such as a message or data) and produces a fixed-length output, known as a hash or message digest.
Jitter	Refers to the variability in timing or amplitude of a signal, which can occur due to various factors such as noise, interference, or distortion.
Lifetime	Refers to the characteristic timescale over which a quantum state or property persists or decays.
Measurement	The process of obtaining information about a property of a quantum system.
Oracle	A function used in some quantum algorithms to provide information about the problem being solved.
Pseudo random number generator (PRNG)	A deterministic algorithm that generates numbers that appear to be random but repeat after a while.
Qubit	The basic unit of quantum information, analogous to a classical bit in a classical computer.
Quantum states	A complete description of a quantum system in quantum mechanics.
Quantum key distribution (QKD)	A method of secure communication that generates and distributes random cryptographic keys.
Seed	An initial positive integer used by a PRNG or in simulations to generate a reproducible number stream that appears to be random.

Superposition	A property of a quantum system to exist in multiple states simultaneously, until the quantum system is measured.
True random number generator (TRNG)	A device that generates random numbers by collecting and measuring random physical phenomena.
Uncertainty principle	A principle in quantum mechanics that states that certain pairs of physical properties, such as position and momentum, cannot be precisely measured simultaneously.
Virtual qubits	Virtual qubits are not actual physical qubits but are instead a mathematical construct used to simulate quantum circuits and algorithms on classical computers.
Zeno effect	A phenomenon in quantum mechanics that occurs when a quantum system is observed continuously, preventing it from undergoing any change or evolution.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following best describes Heisenberg’s Uncertainty Principle?

- (a) It is impossible to know both the position and velocity of a particle with absolute certainty.
- (b) The speed of light in a vacuum is constant and independent of the observer’s motion.
- (c) Electrons orbit the nucleus in defined paths or orbits.
- (d) Energy cannot be created or destroyed, only converted from one form to another.

Answer: (a)

Descriptive Question

Q. What is quantum technology? Discuss the significance of the National Quantum Mission in creating a quantum technology ecosystem in India. [15 Marks] [250 Words]

SUPERCOMPUTERS

Why in News: Researchers from IIT Bombay and C-MET, Pune have developed ceramic-based cold plates as an efficient alternative to the conventionally used copper for making cold-plates to cool supercomputers.

Key Details

- Supercomputing is a form of high-performance computing that determines or calculates by using a powerful computer, a supercomputer, reducing overall time to solution.
- Supercomputing technology comprises supercomputers, the fastest computers in the world. Supercomputers are made up of interconnects, I/O systems, memory and processor cores.
- Unlike traditional computers, supercomputers use more than one central processing unit (CPU). These CPUs are grouped into compute nodes, comprising a processor or a group of processors—symmetric multiprocessing (SMP)—and a memory block. At scale, a supercomputer can contain tens of thousands of nodes. With interconnect communication capabilities, these nodes can collaborate on solving a specific problem. Nodes also use interconnects to communicate with I/O systems, like data storage and networking.
- Power consumption in modern supercomputers is very high and the data centres require cooling systems & other suitable facilities to house a supercomputer.

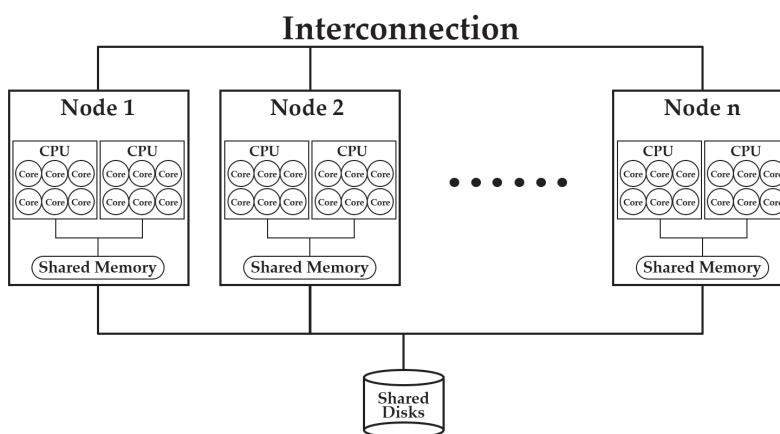
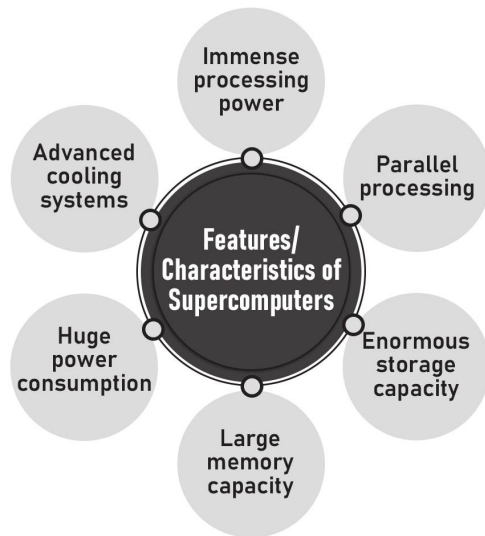


Fig. Schematic of typical architecture of a modern supercomputer

How fast is supercomputing?

Supercomputing is measured in floating-point operations per second (FLOPS), are an indicator of computers processing speed. Petaflops are a measure of a computer's processing speed equal to a thousand trillion flops. And a 1-petaflop computer system can perform one quadrillion (10¹⁵) flops. From a different perspective, supercomputers can have one million times more processing power than the fastest laptop.



Types of Supercomputers

The supercomputers are classified based on their architecture and usage.

- **General Purpose Supercomputers:** Designed to solve a wide range of problems across various disciplines. There are three main categories of general purpose supercomputers:
 - **Vector Processing Supercomputers:** Uses vector processors that can perform the same operation on multiple data points simultaneously. Example - Cray1
 - **Tightly Connected Cluster Computers:** A group of connected computers that work together as a unit. Example - Beowulf cluster
 - **Commodity Computers:** A large number of commodity PC's interconnected by high-bandwidth low-latency local area networks.
- **Special Purpose Supercomputers:** Designed to solve a specific type of problem very efficiently.

Supercomputing and AI

Because supercomputers are often used to run artificial intelligence programs, supercomputing has become synonymous with AI. This regular use is because AI programs require high-performance computing that supercomputers offer. In other words, supercomputers can handle the types of workloads typically needed for AI applications.

Applications of Supercomputer

- **Meteorology:** Weather forecasting; Research on climate & global warming.
- **Molecular Modelling:** Determining the structures & properties of biological compounds; Drug discovery
- **Performing Simulations:** Disaster Management; Testing new weapons
- **Finance:** Economic modelling; Algorithmic Trading
- **Big Data Analytics:** Genomics; Data mining
- **AI & Machine Learning:** Training the AI algorithms
- **Entertainment:** Visual effects (VFX); Animations
- **Identifying next-generation materials** for better batteries, more resilient building materials and more efficient semiconductors.
- **Understanding patterns of disease** by identifying patterns in the function, cooperation and evolution of human proteins & cellular systems.

Challenges with respect to developing supercomputers

- **High Costs:** Supercomputers are expensive to develop, operate and maintain.
- **Energy Consumption:** Supercomputers consume massive amounts of energy leading to high operating costs and environmental concerns.
- **Cooling Requirements:** Supercomputers need sophisticated cooling systems to tackle the heat generated during processing.
- **Software Optimization:** Development of effective softwares and software ecosystem for supercomputers remains a challenge.
- **Skilled Workforce:** Shortage of skilled professionals.
- **Cybersecurity:** Supercomputers need to be secured against cyber threats to protect sensitive data and intellectual property.
- **Regulatory:** Involvement of multiple agencies.

National Supercomputing Mission (NSM)

- Funded by Ministry of Electronics and Information Technology (MeitY) and Department of Science and Technology (DST).
- The Mission envisages empowering our national academic and R&D institutions spread over the country by installing supercomputers of various capacities.
- Access to these supercomputers is provided through the National Knowledge Network (NKN).
- The Mission also includes development of highly professional High Performance Computing (HPC) aware human resources for meeting challenges of development of these applications.
- The Mission is steered jointly by the Department of Science and Technology (DST) and Department of Electronics and

Information Technology (DeitY). The mission is implemented by Centre for Development of Advanced Computing (C-DAC), Pune and the Indian Institute of Science (IISc), Bengaluru.

National Knowledge Network is another programme of the government which connects academic institutions and R&D labs over a high speed network.

Private Sector

Reliance and NVIDIA Partner to Advance AI in India, for India. The companies to Build Supercomputing Infrastructure to Support Exponential Computational Demands of AI.

Way Forward

• **Institutional Framework**

- Establishment of a central governing body dedicated to supercomputing.
- Fostering Public-Private partnerships between government bodies, private companies and academic institutions. For example, C-DAC has partnered with MosChip® Technologies, and Socionext Inc. for the

design and development of a High-Performance-Computing (HPC) Processor.

- Establishment of specialised institutions and centres of excellence.

• **Regulatory Measures**

- Establishing ethical guidelines for use of supercomputers to enhance confidence in the technology.
- Implementation of robust data privacy and cybersecurity regulations to protect sensitive information.
- Developing and enforcing standards for supercomputer hardware and software to ensure interoperability & efficiency.

- **Research and Development:** Increase funding for R&D and talent development. For example, Indian Government signed a deal in December 2018 with France to procure high-performance computers worth ₹4,500 crore by 2025.

Difference Between Supercomputer and Quantum Computer

	Supercomputer	Quantum Computer
Architecture and Operating Principles	Based on classical computing principles, using traditional binary bits.	Use quantum bits (qubits) and leverage quantum phenomena (superposition, entanglement etc.)
Hardware	Traditional silicon based processors and parts.	Specialised quantum hardware.
Processing Power	Performance is measured in FLOPS.	Performance is measured in qubits & quantum operations per second.
Scalability and Level of Development	Highly scalable with established technology & infrastructure.	Advancing and developmental technology.

TOP500

It is a project that ranks the 500 most powerful non-distributed computer systems in the world. It was established in 1993. The list is updated twice a year in June and November.

Most powerful supercomputer in the world (June 2024): Frontier (USA)

Indian Supercomputers in Top500 list (June 2024)

1. **AIRAWAT (Rank-110)** - AI Supercomputer manufactured by Netweb Technologies; installed at C-DAC Pune
2. **PARAM Siddhi (Rank-185)** - Installed at C-DAC
3. **Pratyush (Rank-230)** - Civilian supercomputers, installed at Indian Institute of Tropical Meteorology (IITM), Pune
4. **Mihir (Rank-388)** - Installed at National Center for Medium Range Weather Forecast (NCMRWF), Noida
India's first supercomputer - PARAM 8000 - developed by C-DAC

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding the objectives of National Supercomputing Mission (NSM):

1. To make India one of the world leaders in Supercomputing and to enhance India's capability in solving grand challenge problems of national and global relevance.
2. To empower our scientists and researchers with state-of-the-art supercomputing facilities and enable them to carry out cutting-edge research in their respective domains.
3. To minimise redundancies and duplication of efforts, and optimise investments in supercomputing.
4. To attain global competitiveness and ensure self-reliance in the strategic area of supercomputing technology.

How many of the above statements are correct?

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

Descriptive Question

Q. Highlight the differences between a supercomputer and a quantum computer. Discuss the significance of supercomputers in scientific research and national development. [15 Marks] [250 Words]

NANOTECHNOLOGY

Why in News: Recently, Indian Institute of Technology Madras (IIT Madras) Researchers have shown that common minerals can be broken by water microdroplets to make corresponding nanoparticles.

Key Details

- Microdroplet showers composed of nanoparticles and molecules falling on Earth may be of importance to the chemical and biological evolution of the planet.
- Atmospheric water droplets can be charged due to ionic species present in them and by contact electrification. Disintegration of minerals make nascent surfaces and on such surfaces, different types of catalysis may occur, forming new molecules. These processes could be important in the origin of life.
- During the research it was found that pieces of minerals such as river sand, ruby and alumina, which are very hard minerals, incorporated in tiny charged water droplets break spontaneously to form nanoparticles, in milliseconds.
- Computer simulations suggested that the phenomenon may occur by a process called '**proton- induced slip**', in which atomic layers in the minerals slip between each other, assisted by protons. In tiny water droplets, protons and other reactive species are known to exist.
- **Future Application of the Research**
 - This finding offers a transformative technique for soil formation, dramatically accelerating natural weathering processes from centuries to moments.
 - This method advances nanotechnology and materials science, enabling sustainable and efficient nanoparticle production with broad industrial applications.

Nanotechnology

- Nanotechnology is the understanding and control of matter at the nanoscale, at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications.

- Matter can exhibit unusual physical, chemical, and biological properties at the nanoscale, differing in important ways from the properties of bulk materials, single atoms, and molecules.

Nanoparticles

- A nanoparticle is a minute fragment of matter that is less than 100 nm in diameter. Despite its miniscule size, a nanoparticle behaves as a whole unit with regard to its properties and transport.
- Nanoparticles are unique in the sense that they form the link between bulk material and materials at the atomic or molecular scale.
- Bulk materials usually retain their properties regardless of size. However, when the materials are reduced to the nanoscale, their physical and chemical properties change depending on size.

Nanomaterials can be subdivided into four major types:

- **Zero-dimensional nanomaterials:** All the dimensions are in nanometer scale. e.g. nanoparticles
- **One-dimensional nanomaterials:** Any one of the three dimensions is of nanometer scale. e.g. nanorods, nanowires
- **Two-dimensional nanomaterials:** Any two of the three dimensions are of nanometer scale. e.g. nanosheets, nanoplates, nano-coatings
- **Three-dimension nanomaterials:** Three dimensions are larger than 100 nm and electrons are not confined in any direction. e.g. nanoflowers, nanocubes, nanocages.

Applications of Nanotechnology

Everyday Materials and Processes

- Clear nanoscale films on eyeglasses, computer and camera displays, windows, and other surfaces can make them water- and residue-repellent, anti reflective, self-cleaning, resistant to ultraviolet or infrared light, anti fog, antimicrobial, scratch-resistant, or electrically conductive.
- Nanoscale materials are beginning to enable washable, durable "smart fabrics" equipped with flexible nanoscale sensors and electronics with capabilities for health monitoring, solar energy capture, and energy harvesting through movement.
- Nanostructured ceramic coatings exhibit much greater toughness than conventional wear-resistant coatings for machine parts.
- Nano-engineered materials make superior household products such as degreasers and stain removers; environmental sensors, air purifiers, and filters; antibacterial cleansers; and specialised paints and sealing products, such a self-cleaning house paints that resist dirt and marks.

Electronics and IT Applications

- **Transistors** have gotten smaller and smaller through nanotechnology.

- **Nanoparticle copper** suspensions have been developed as a safer, cheaper, and more reliable alternative to lead-based solder and other hazardous materials commonly used to fuse electronics in the assembly process.
- **Ultra-high definition displays** and televisions are now being sold that use **quantum dots** to produce more vibrant colours while being more energy efficient.

Medical and Healthcare Applications

- **Gold nanoparticles** as probes for the detection of targeted sequences of nucleic acids, and gold nanoparticles are also being clinically investigated as potential treatments for cancer and other diseases.
- Nanotechnology is being studied for both the diagnosis and treatment of **atherosclerosis**, or the buildup of plaque in arteries.
- **Better imaging and diagnostic tools** enabled by nanotechnology are paving the way for earlier diagnosis, more individualised treatment options, and better therapeutic success rates.
- **Nanomedicine** researchers are looking at ways that nanotechnology can **improve vaccines**, including vaccine delivery without the use of needles.

Energy Applications

- Nanotechnology is improving the **efficiency of fuel production** from raw petroleum materials through better catalysis.
- Carbon nanotube “scrubbers” and membranes to separate carbon dioxide from power plant exhaust.
- Developing **wires** containing **carbon nanotubes** that will have much lower resistance than the high-tension wires.
- Developing new kinds of **batteries** that are quicker-charging, more efficient, lighter weight, have a higher power density, and hold electrical charge longer.

Environmental Remediation

- Rapid, low-cost detection and treatment of impurities in water.
- **Nanotechnology-enabled sensors** and solutions to detect and identify chemical or biological agents in the air and soil with much higher sensitivity.
- Cleaning up **oil spills** by water-repellent nanoparticles.

Implications of Nanotechnology

- **Dual use:** Many nanotechnologies will have both civilian and military purposes. The same techniques used to create life-saving pharmaceuticals can also be used to create deadly poisons.
- **Environmental concerns:** Threat of **nano pollution** generated by toxic wastes from nanomaterial manufacturing. Increased risk of bioaccumulation and biomagnification of nano pollutants.
- **Risks to human health:** Nanoparticles have a high potential to accumulate inside the human body and affect different metabolic pathways in the body.

Gray Goo: It is a hypothetical global catastrophic scenario of nanotechnology in which out-of-control self-replicating nanobots destroy the biosphere by endlessly producing replicas of themselves and feeding on materials necessary for life.

About Quantum Nanoscience

- Nanoscale systems are ideally suited to study quantum mechanical effects and explore these as resources for emerging quantum technology such as quantum sensing, communication or computing.
- Nanotechnology and quantum computing can collaborate in several ways to enhance each other’s capabilities and to address global challenges.
- Nanotechnology can provide the fabrication and manipulation tools to create and control qubits and quantum devices at the nanoscale, such as quantum dots, nanowires, and nanophotonic circuits.
- Quantum computing can provide the computational power and algorithms to simulate and optimise nanoscale phenomena and systems, such as molecular dynamics, nanoelectronics, and nanomaterials.

NOBEL PRIZE IN CHEMISTRY 2023 was awarded jointly to Mounji G. Bawendi, Louis E. Brus and Alexei I. Ekimov “for the discovery and synthesis of quantum dots.” These tiny particles known as nanoparticles are unique in a sense that their size determines their properties.

Application of Quantum dots:

- To track tumour tissue in the body.
- In Photovoltaic devices to boost the energy conversion efficiency.
- The catalytic properties of quantum dots to drive chemical reactions.
- Quantum dots can be attached to biomolecules to map cells and organs.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Which of the following can be achieved by the use of nanotechnology?

1. Targeted drug delivery
2. Reducing Air Pollution
3. Making water-proof fabric
4. Improve packaging material for better shelf life of food products

Which of the statements given above are correct?

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

Answer: (d)

Descriptive Question

Q. Critically analyse the emergence of nanotechnology as a tool for betterment of the world and humanity. [10 Marks] [150 Words]

JAMES WEBB TELESCOPE

Why in News: NASA's James Webb Space Telescope (JWST) has discovered the earliest-known galaxy, dating back to just 290 million years after the Big Bang.

Key Details

- **Cosmic Dawn:** This discovery sheds light on the "Cosmic Dawn" which is the universe's first few hundred million years.
- **Brighter Than Expected:** The galaxy is surprisingly bright and large for its age, measuring about 1,700 light-years across. JWST observed this galaxy at a time when the universe was only 2% of its current age.
- **Significance of the Discovery:** This finding challenges previous assumptions about galaxy formation in the early universe which did not expect such big and this bright a galaxy.
- **Theory for Luminosity:** Now scientists are theorizing that the early galaxy's excessive luminosity could be due to either:
 - A larger number of stars than expected, or
 - Brighter stars than those observed today.
- **Unique Nature of Early Universe:** The early universe's environment likely played a role in this luminosity and size:-
 - Denser and richer in gas compared to today.
 - Chemical composition closer to the Big Bang's remnants containing hydrogen, helium, and lithium.
- **Comparison to Present-Day Galaxies:** While large for an early galaxy, it's dwarfed by modern galaxies like the Milky Way.

The James Webb Space Telescope (JWST)

Launched in December 2021, JWST has become a game-changer in our understanding of the early universe.

Location: Currently positioned at the Sun-Earth L2 Lagrange point, 1.5 million km beyond Earth's orbit.

International Collaboration: It was designed by U.S. National Aeronautics and Space Administration (NASA) along with European Space Agency (ESA) and Canadian Space Agency (CSA)

Expand Research: Conducts infrared astronomy, enabling observations of objects invisible to the Hubble Space Telescope.

Technological Marvels:

- **High-Resolution and High-Sensitivity Instruments:** Allow for viewing faint and distant objects.

- **Massive Primary Mirror (6.5 meters):** Enables collection of light from the faintest and farthest galaxies/stars.

Looking Back in Time:

- Telescopes reveal objects as they existed in the past, not their current state.
- JWST's capabilities allow us to peek back 13.5 billion years, observing the formation and initial light emission of the universe's first objects.

Conclusion

Studying this early galaxy through JSWT can reveal the unique conditions of the early universe and the processes that shaped galaxies, black holes, stars, and potentially exoplanets. This will help us gain insight into what it is that allowed various planets to flourish.

Expected Questions for UPSC CSE**Prelims MCQ**

Q. Consider the following statements about James Webb Space Telescope

1. It is solely led by NASA
2. It works on infrared astronomy principle
3. It can help in revealing unique conditions of early universe

How many of the above statements are correct?

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

(b) Answer

Descriptive Question

Q. Launched on 25th December, 2021, James Webb Space Telescope has been much in the news since then. What are its unique features which make it superior to its predecessor Space Telescopes? What are the key goals of this mission? What potential benefits does it hold for the human race? (PYQ UPSC Mains 2022)

**NEW LAUNCH VEHICLES:
AGNIBAN & PUSHPAK**

Why in News: Agnikul Cosmos, an IIT Madras incubated startup, successfully launched its "Agnibaan" rocket in a mission dubbed SOrTeD (Suborbital Technology Demonstrator). Also, ISRO successfully demonstrated the landing of the Pushpak reusable launch vehicle for the third time.

Key Details

Agniban: It is world's most integrated single shot 3D printed launch vehicle

- **Reusable Mobile Launchpad:** “Dhanush” designed for easy transport across the globe
- **India’s First Semi-Cryogenic Engine:** 3D-printed “Agnilet” uses sub-cooled oxygen as fuel.
- **Two Stage Vehicle**
- **Lift small satellites:** ranging from 30 kg to 300 kg
- **Go upto Lower Earth Orbit:** Upto 700 km
- **Dimensions of Rocket:** 14 ton, 18 metres long, diameter of 1.3 meters and has a lift-off mass of 14,000 kg.
- **3D-Printed Components:** This allows Agnikul to claim a production rate of one rocket per month, allowing it to be rapidly assembled.



Pushpak: India’s reusable launch vehicle (RLV) is designed to take satellites up to space and return and land on a runway like an aeroplane



- **Winged Vehicle** for horizontal landing

- **Indigenously Developed:** The technology uses MultiSensor including Inertial sensor, Radar altimeter, Flush air data system, Pseudolite system and Navigation with Indian Constellation (NavIC). It also has indigenous systems for navigation, landing and deceleration systems for high speed autonomous landing.
- **Autonomous:** RLV Landing Experiment (LEX) demonstrated software to land autonomously in challenging atmospheric conditions.
- **Next Test for Orbital Re-Entry:** So far testing has been by releasing it from an aircraft, now it will be tested after Orbital Re-entry.

Benefits of Pushpak RLV

- Reduce costs by 80% of existing launches.
- Make missions resource efficient
- Low lift-to-drag (L/D) ratio allows steeper landings in shorter runways.

How Pushpak RLV is different from Multi-Stage Rockets:

Traditionally in multi stage rockets, the first stage is discarded after lift off to reduce weight of the rocket. In RLV, the first stage detaches from the rocket but returns to earth. It can then be refurbished for subsequent launches.

How Pushpak RLV is different from other Reusable Rockets:

USA based companies SpaceX’s Falcon and Blue Origin’s New Shepard land vertically, while Pushpak RLV lands horizontally like a plane.

ISRO’s Launch Vehicle Programme:

Indian Space Research Organisation (ISRO) has diverse launch vehicles which carry various payloads (satellites) to space upto various orbits to cater to different mission requirements

Launch Vehicle	Stages & Fuel Used	Purpose and Orbit
Pushpak Reusable Launch Vehicle (RLV)	Two stage	Take smaller satellites to Lower Earth Orbit (LEO)
Small Satellite Launch Vehicle (SSLV)	3 Stage Solid Propellant fuel	Compact and cost-efficient for smaller satellites upto 500kg payload in LEO.
Polar Satellite Launch Vehicle (PSLV)	4 Stages: Stage 1: Solid Stage2 : Liquid- Vikas Engine. Stage3: Solid Stage 4: Liquid	Workhorse of ISRO, capable of placing multiple payloads. Can serve Sun Synchronous Polar Orbit, Geosynchronous and Geostationary orbits. Used for Earth Observation, Geo-stationary, Navigation, Lunar and Interplanetary missions
Geosynchronous Satellite Launch Vehicle (GSLV)	Three stage vehicle: First solid, second liquid and the upper most cryogenic engine.	For communication satellites that operate from Geostationary orbits. Also serves heavy payloads to lower earth orbit.
Geosynchronous Satellite Launch Vehicle Mk-III (LVM3)	Three stage vehicle: First solid, second liquid and the upper most cryogenic engine.	For the Human Space Programme, Communication Satellites. Put payload in Geosynchronous Transfer Orbits, LEO

Various Space Orbits

Name of Orbit	Description	Purpose
Low Earth Orbit (LEO)	This orbit is 160 to 1000km from Earth. Satellites placed in LEO can have a tilted plane. They follow many different routes and not bound to follow a fixed path across the Earth.	There closeness allows them to capture high-resolution images which is why they are used for satellite imaging. International Space Station is located here for ease of access of astronauts.
Medium Earth Orbit (MEO)	Around 2000-36,000km from Earth.	Communication and navigation satellites like the Global Positioning System (GPS) are placed in MEO.
Geostationary Orbit (GEO) or Geosynchronous Equatorial Orbit	The satellite appears to hover at the same spot in the sky at all times as their orbital period matches the earth's rotation period.	They are perfect for communication and weather monitoring as antennas on Earth can point directly at them without having to redirect. GEO is used by satellites that need to stay constantly above one particular place over Earth. GEO satellites are directly overhead at the Earth's equator.
Geostationary Transfer Orbit (GTO)	A temporary elliptical orbit.	Used by satellites to travel from one orbit to another. Here satellites halt before they can be placed in their destination orbit, using relatively less energy
Polar Orbit & Sun Synchronous Orbit (SSO)	All other satellites travel west to east, but SSO travel north to south at a distance of 200 - 800km from Earth.	Because they're synchronized with the sun, they revisit the same spot at the same local time, making them ideal for imaging, spy, and weather missions.

Conclusion

There is a need to promote transparency for building trust and fostering collaboration with the influx of private sector in India's space industry. The Agnibaan launch vehicle by Agnikul marks a significant achievement for India's private space sector. However, it should now seek to improve communication of test flight parameters, which has traditionally been a limitation of ISRO projects.

Galaxeye Space, housed at IIT-Madras, has successfully tested a synthetic aperture radar (SAR) it created on a National Aerospace Laboratories High-Altitude Platform (HAP).

About High-Altitude Platform Station

- The International Telecommunications Union (ITU) Radio Regulations (RR) define HAPS as radio stations located on an object at an altitude of 20-50 kilometres and at a specified, nominal, fixed point relative to the Earth.
- HAPS can be unmanned aerial vehicles (UAVs) or aerostatic platforms (like airships or balloons).
- They can be moved or made to hover over a certain country or region. They are cheaper compared with satellites.
- HAPS can run entirely on solar power, and can remain in the air for months on end. favourable for observation and surveillance activities.
- The global High-Altitude Platform Station market was valued at US\$ 8 million in 2023 and is anticipated to reach US\$ 634.9 million by 2030.
- India's High Altitude Platform (HAP) program aims to develop a full-scale high-altitude platform by December 2025.
- The National Aerospace Laboratories (NAL) is leading the project in collaboration with Hindustan Aeronautics Limited (HAL) and NewSpace Research and Technologies.
- **Working mechanism**

➤ **Balloons:** Helium-filled high-altitude balloons.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. What is the primary technology behind the Pushpak Rocket that distinguishes it from other rockets?

(a) It uses liquid fuel for its primary propulsion.

(b) It is entirely powered by lithium energy sources.

(c) It incorporates reusable technology for multiple flights.

(d) It utilizes ramjet engine technology for hypersonic

(c) :Answer

HIGH-ALTITUDE PLATFORM STATION

Why in News: Recently, Bengaluru-based space startup

INDIA-USA DEFENCE COOPERATION

Why in News: India and the US have recently discussed co-producing American Javelin anti-tank missiles to fulfil Indian military requirements.

Key Details

About Javelin anti-tank missiles

- Developed by Raytheon and Lockheed Martin.
 - **Warhead:** High-explosive anti-tank (HEAT) with tandem charge.
 - **Engagements:** Over 5,000 successful engagements.
 - **Combat Debut:** Iraq (2003) and Russo-Ukrainian War.
 - **Range:** 65 metres to 4,000 metres in most operational conditions (increased from earlier models 2.5 kilometres.)
 - **Warhead:** Tandem-shaped charge, multi-purpose warhead for defeating various targets
 - **Guidance:** Imaging infrared seeker for lock-on before launch and automatic self-guidance
 - **Firing Mode:** Shoulder-fired and deployable from various platforms.
 - **Man-Portable:** Javelin's portability allows for greater flexibility in deploying troops and engaging in close-quarter combat situations.
 - **Fire-and-Forget:** The launch-and-leave system minimises soldier exposure to enemy fire, improving survivability.
 - **Combat Debut:** The Javelin made its combat debut in Iraq in 2003 and gained prominence during the Russo-Ukrainian War.
- #### India-US Defence Cooperation
- **Framework and Policy**
 - **New Framework for India-US Defence Cooperation:** Renewed for ten years in 2015.
 - **Major Defence Partnership (MDP):** Designated in 2016, signifying a high level of cooperation.
 - **Tier-1 Designation:** Achieved in July 2018, simplifying US export controls for India.
 - **Dialogue Mechanisms**
 - **2+2 Ministerial Dialogue:** Highest level forum, co-chaired by Foreign & Defence Ministers (India) and Secretaries of State & Defence (US). Last held in April 2022.
 - **Defence Policy Group (DPG):** Discusses strategic issues, led by Defence Secretary (India) and Under Secretary of Defence (Policy) (US). Last held in May 2023.
 - **Defence Procurement**
 - Growing market: US\$20 billion worth of procurements from the US.
 - Major US platforms: C-130J, C-17, Apache, Chinook, MH60R helicopters, P8I maritime patrol aircraft.
 - **Key Agreements (2016-2020)**
 - Logistics Exchange Memorandum of Agreement (2016)
 - ◆ Since 2022, US Navy ships visit Indian shipyards for repairs.
 - Communications Compatibility and Security Agreement (2018)
 - Industrial Security Agreement (2019)
 - Basic Exchange and Cooperation Agreement (2020)
 - Memorandum of Intent for Defense Innovation Cooperation (2018)
 - **Industrial Cooperation**
 - **India-US Defence Industrial Cooperation Roadmap (May 2023):** Aims to accelerate technology transfer and co-production.
 - **India-US Defence Acceleration Ecosystem (INDUS-X) (June 2023):** Network to promote joint innovation in defence technologies.
 - **Military Exercises**
 - Bilateral exercises: Yudh Abhyas (Army), Vajra Prahar (Special Forces), Malabar (Navy), Cope India (Air Force), Tiger Triumph (Tri-services).
 - Multilateral exercises: Red Flag, RIMPAC, CUTLASS Express, Sea Dragon, Milan.
 - **Other Important Events**
 - INS Satpura became the first Indian warship to visit the US mainland (San Diego) in August 2022.
 - India joined the Combined Maritime Force (CMF) as an Associate Partner in April 2022.
 - **Counter-Terrorism Cooperation**
 - **India-US Joint Working Group on Counter-Terrorism:** Facilitates information exchange, capacity building, and operational cooperation.

- **Homeland Security Cooperation**
 - Homeland Security Dialogue (HSD) established in 2010 at the Ministerial level.
 - Five joint sub-groups under HSD address border security, law enforcement cooperation, and capacity building.
- **Counter-Narcotics Cooperation**
 - Fourth bilateral Counter Narcotics Working Group meeting held in Washington D.C. (July 2023).
 - India joined the US-led Global Coalition on Synthetic Drugs.
- **Cyber Security Cooperation**
 - India-US Cyber Framework signed in September 2016.
 - India-US Cyber Dialogue held in Washington D.C. (September 2022).
 - India participated in the US-led Counter Ransomware Initiatives meeting in November 2022.

Challenges associated with India-US Defence Partnership

- **Russia Factor:** US aims to limit India’s reliance on Russia for arms for example, US sanctions on Russia impacting future Indian purchases.

India’s Important Defence Deals with Russia

1. **S-400 Triumf Air Defence System:** A long-range surface-to-air missile system.
2. **Sukhoi Su-30MKI Fighter Jets:** Multirole fighters are a product of Indo-Russian co-production.
3. **INS Vikramaditya Aircraft Carrier:** This refurbished Soviet-era carrier is the flagship of the Indian Navy, showcasing India’s dependence on Russia for its sole operational carrier.
4. **Kamov Helicopters:** India operates a large fleet of various Kamov helicopters, including the Ka-31 for airborne early warning and the Ka-226 for light utility transport (future production to be localised in India).
5. **AK-203 Assault Rifles:** A recent deal aims to produce millions of these next-generation Kalashnikov rifles in India, modernising the Indian Army’s infantry weaponry.
6. **Nuclear Submarines:** India leases Chakra-class nuclear submarines from Russia, crucial for developing its own nuclear submarine program and strategic deterrence capabilities.
7. **Missile Technology Cooperation:** India and Russia have a long history of collaboration on missile technology, including co-development of the BrahMos supersonic cruise missile.

- **Tech Transfer Limits:** US export controls and technology leak concerns restrict access for India.
- **Interoperability Issues:** Differences in doctrines and equipment can hinder seamless joint operations.
- **India’s Balancing Act:** Maintaining strategic autonomy limits cooperation on certain US initiatives
- **Domestic Politics:** Opposition may criticise close US ties, fearing reduced strategic independence.

Conclusion

Ashley Tellis, a prominent strategic affairs expert states, “The defence relationship between India and the United States has transformed significantly, evolving from a relationship based on estrangement during the Cold War to one anchored in strategic alignment in the 21st century.”

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements,

Statement-I: India leases Chakra-class nuclear submarines from the United States of America.

Statement-II: The United States of America and India signed Logistics Exchange Memorandum of Agreement in 2016.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.
- (b) Both Statement-I and Statement-II are correct 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.

(d) **Answer:**

Descriptive Question

Q. Discuss the India-US Defence initiatives in detail particularly weapon purchase and anti-terror initiatives. Evaluate the foreign policy balance required for India to engage with Russia and USA in the present scenario. [10 Marks] [150 Words].

CYBERSPACE WARFARE IN DEFENCE

Why is News: Chief of Defence Staff Gen Anil Chauhan released the Joint Doctrine for Cyberspace Operations during the Chiefs of Staff Committee (COSC) meeting held on June 18, 2024, in New Delhi.

About Joint Doctrine for Cyberspace Operations

- The Joint Doctrine will guide Commanders in conducting Cyberspace Operations in today’s complex military operating environment.

- This doctrine lays emphasis on understanding military aspects of cyberspace operations and provides conceptual guidance to commanders, staff and practitioners in the planning, and conduct of operations in cyberspace, as also to raise awareness in our warfighters at all levels.

Need for the Joint Doctrine

- **Integration among Indian Armed Forces:** Development of Joint Doctrine is an important aspect of Jointness and Integration, a step which is being actively pursued by the Indian Armed Forces.
- **Cyberspace as a domain of warfare:** In addition to the traditional domains of warfare including land, sea, and air. Cyberspace has emerged as a crucial and challenging domain in modern warfare. Unlike territorial limits in

the domains of land, sea, and air, cyberspace is a global common and hence has shared sovereignty.

- **Impact of attack in cyberspace:** Hostile actions in cyberspace can impact the Nation’s economy, cohesion, political decision making, and the Nation’s ability to defend itself.
- **Dovetailing cyberspace operations in National Security fabric:** To evolve the ‘Ends,’ ‘Ways’ and ‘Means’ to create advantage and influence events in all other operational environments and across all instruments of power.

Cyber Warfare

Cyber warfare is usually defined as a cyber attack or series of attacks that target a country. It has the potential to wreak havoc on government and civilian infrastructure and disrupt critical systems, resulting in damage to the state and even loss of life.

Type of Cyber Attack	Meaning
Espionage	Monitoring other countries to steal their secrets.
Sabotage	Deliberate & malicious acts that result in the disruption of the normal processes and functions or the destruction or damage of equipment or information.
Denial-of-service (DoS) Attacks	Prevent legitimate users from accessing a website by flooding it with fake requests and forcing the website to handle these requests.
Electrical Power Grid Attack	Attacking the power grid allows attackers to disable critical systems, disrupt infrastructure, and potentially result in bodily harm. It can disrupt communications and render services such as text messages & communications unusable.
Propaganda Attacks	Attempts to control the minds and thoughts of people living in or fighting for a target country. Propaganda can be used to expose embarrassing truths, spread lies to make people lose trust in their country, or side with their enemies.
Economic Disruption	Attacking computer networks of economic establishments such as banks, stock markets to steal money or block people from accessing the funds they need.
Surprise Attacks	Cyber equivalent of attacks like Pearl Harbor. The point is to carry out a massive attack that the enemy isn’t expecting. This can be done to prepare the ground for a physical attack in the context of hybrid warfare.

Grey Zone Warfare

Grey zone warfare generally means a middle, unclear space that exists between direct conflict and peace in international relations.

The grey zone describes a set of activities that occur between peace (or cooperation) and war (or armed conflict).

Hybrid Warfare

Hybrid warfare combines conventional and unconventional methods, including military operations, cyber warfare, disinformation campaigns, and economic pressure.

- Generally, India’s approach to cyberspace has been cautious and slow, working gradually and in piecemeal—identifying cyber risks and threats, establishing institutions and policies, and using diplomacy to deflect rules that constrain domestic powers.
- India’s cyber response is largely shaped and governed by the **2008 Information Technology Amendment Act** with cyber responsibilities spread across a litany of national and state agencies. This fragmentation has constrained India’s cyber preparedness and stymied the growth of a partnership between the government and the private sector to identify and root out rising threats and risks online.
- Sufficient budgetary allocation is being provided for Cyber operations and capability development from 2019.
- Institutional conditions exist for India to adopt and

Cyber Operations in India’s Military Strategy - From Defensive to Offensive

- India’s overall cyber approach has largely been **defensive** and domestic, focusing on fixing internal gaps before venturing to counter foreign threats.

deploy an **offensive** cyber approach into its military strategy, this approach allows India to **proactively** identify and eliminate various cyber threats before they strike Indian targets.

- India has the necessary institutional conditions including infrastructure, cyber agency, and private sector expertise to adopt a viable offensive cyber approach. However, it lacks one fundamental aspect that could affect its ability to conduct offensive cyber operations abroad—a pronounced cybersecurity strategy. The new joint doctrine will enable India to overcome this challenge.

Offensive Cyber Operations

- These operations are conducted by states using computer activities, digital tools and instruments to disrupt, degrade and destroy cyber threats.
- They vary from using software to disrupt critical physical infrastructures like power grids and ports, to malware that targets dissidents or journalists or ransomware that demands payment to return data. Some cyber operations are designed to seek domestic influence or sabotage an adversary.
- Offensive cyber operations can help obtain or exploit information on an adversary’s network, particularly related to military strategy. They can be used in conjunction with other military capabilities to soften and penetrate the adversary’s defences in certain conflict situations.

Way Forward: Towards an Offensive Cyber Strategy

- Adequate physical infrastructure to adopt an offensive cyber strategy, specifically sufficient intelligence, surveillance and reconnaissance (ISR) capabilities. These ISR capabilities must be ubiquitous, real-time, persistent and capable of executing a strike when necessary.
- Cyber institution or agency that manages, runs and executes cyber operations.
 - In 2021, India established the Defense Cyber Agency, which appears to resemble a cyber command that can undertake offensive cyber operations, hack and disrupt networks and mount surveillance operations.
 - National Cyber Coordination Centre (NCCC), launched in 2014, helps synchronise efforts among various government agencies tasked with cyber responsibilities.
- Work with the private sector to develop a viable offensive cyber operations structure, given their ability to significantly influence the nature, execution and success of cyber operations.
 - India has a robust and dynamic information technology sector that can support its cyber operations.

Cyber Terrorism

- Cyber terrorism (also known as digital terrorism) is defined as disruptive attacks by terrorist organisations against computer systems with the intent of generating alarm, panic, or the physical disruption of the information system.
- The mainstream idea of cyber terrorism is the hacking of government or private servers to access sensitive information or even syphon funds for use in terror activities. However, there is currently no universally accepted definition of cyber terrorism.

Cyber Weapons

- A cyber weapon could be defined as a computer code that is used or designed to be used, with the aim of threatening or causing physical, functional or mental harm to structures, systems or living beings.
- In theory a cyber weapon can have a wide range of possibilities from Denial of Service attacks (which typically have a low level of penetration) to, “tailored” malware like the Stuxnet characterised by high intrusiveness and a low rate of collateral damages.

Cyber Warrior

- A cyberwarrior is an individual who participates in cyberwarfare, motivated either by personal, patriotic, or religious reasons. While the term is often used to describe people who perform attacks on computer systems, cyberwarriors also include the defence force employed by governments and businesses.
- They are highly skilled professionals in the information technology or information security industry.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following pairs:

1. Cyber War	Use of digital attacks by a country to damage the information systems of another country.
2. Grey Zone War	Activities and tactics that fall between traditional war and peace.
3. Hybrid War	Conflict that combines conventional military force with non-traditional or unconventional methods.

How many of the pairs given above are correctly matched?

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

Answer: (c) All three

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the 'Nagstra-1,' consider the following statements:

1. It is an indigenously produced Surface-to-Air Missile (SAM).
2. It has an electric propulsion system.
3. With an abort feature it can be called back and safely landed using a parachute system.

How many of the above statements are correct?

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

Answer: (b) and (c) only

ISKANDER MISSILE SYSTEM

Why in News: Recently, Russia has claimed to have destroyed critical military assets of Ukraine using its Iskander-M ballistic missiles.

About Iskander Missile System

- Russian manufactured missile systems capable of firing both ballistic and cruise missiles, both conventional and nuclear types.
- It was first deployed by Russia in 2006.

Variants of Iskander Missile System

- It is a Ballistic Missile, developed exclusively for the Russian defence forces.
- The systems have a range of up to 500 km (310 miles) with 5-7 metres accuracy.

Iskander-K Missile

- It is Cruise missile version of the Iskander missile with a range of up to 500 km (310 miles).
- It can carry both conventional as well as nuclear warheads.

Iskander-E Missile

- It is an export version of the Missile with a maximum 280 km of range to comply with the Missile Technology Control Regime (MTCR) guidelines.
- It can carry both conventional as well as nuclear warheads.
- All of the above versions can carry both conventional (high-explosive, cluster munitions, fuel-air explosives) as well as nuclear warheads.

Guidance System: All versions use Inertial navigation and satellite navigation systems (Russian GLONASS System).

Launch Platform for above missiles: Mobile Transporter Erector Launcher (TEL), which provides high mobility and quick deployment.

Strategic Importance

- **Flexibility:** The ability to launch both ballistic and cruise missiles allows for a broad range of tactical and strategic missions.
- **Geopolitical Impact:** Deployment of the Iskander system in regions such as Kaliningrad has raised concerns among NATO members and neighbouring countries due to its potential to strike targets in Europe.

EXPECTED QUESTION FOR UPSC CSE

Prelims MCQ

Q. With reference to the 'Iskander Missile System,' consider the following statement:

1. It is capable of firing both ballistic and cruise missiles.
2. It is capable of carrying both conventional as well as nuclear warheads.
3. Recently, the Iskander-M Missile has been used by Iran against the Israel Defense Forces (IDF) in Gaza.

How many of the above statements are correct?

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

Answer: (b) and (c) only

TARANG SHAKTI 2024

Why in News: The Indian Air Force's first multinational air exercise, Tarang Shakti-2024, will be held in August, and is likely to see the participation of ten countries, in addition to a few others acting as observers.

Key Details

- The exercise is planned in two phases
 - **Phase 1:** Scheduled for the first two weeks of August in Southern India.
 - **Phase 2:** Scheduled for late August to mid-September in the Western Sector of India.
- **Participation:** Up to 10 countries are expected to participate with their frontline fighter jets, transport aircraft, and aerial refuelling systems. Some additional countries might join as observers.
- **Potential Participants:** While official confirmation is awaited, potential participants include Quad Members: Australia, United States, Japan.

- **Other Strategic Partner countries:** Russia, Singapore, Israel, France, Germany and the United Kingdom.

Expected Outcomes of the Tarang Shakti-2024

- **Enhanced Capabilities:** valuable training experience for pilots, ground crew, and support personnel and enhanced operational readiness and combat effectiveness.
- **Deterrence:** A successful multinational exercise showcases India's growing airpower and strengthens regional deterrence.
- **Strategic Partnerships:** Stronger military-to-military relationships are likely to develop among participating nations.
- Experience of ferrying long distances, while undertaking air-to-air refuelling enroute.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which one of the following statements is not true regarding the Tarang Shakti 2024 exercise:

- The Tarang Shakti 2024 exercise is planned in two phases.
- Up to 10 countries are expected to participate with their frontline fighter jets in the exercise
- France, Germany, Russia, Singapore, Israel, and the United Kingdom will join the exercise
- Air Forces of Myanmar and Sri Lanka will participate from BIMSTEC grouping.

Answer: (d)

JIMEX – 24

Why in News: Japan-India maritime exercise (Jimex 24) commenced at Yokosuka in Japan. Navies of both the countries will jointly hone their war fighting skills at sea and enhance their interoperability.

About Jimex 24

- **Bilateral Exercise:** JIMEX-24 is the eighth edition of a bilateral naval exercise between India and Japan.
- **Location:** Yokosuka, Japan (hosted by the Japan Maritime Self-Defence Force - JMSDF).

Participants:

- Japan Maritime Self-Defence Force (JMSDF): Participating vessel details might not be publicly available.
- Indian Navy: Represented by INS Shivalik (indigenous stealth frigate) and integral helicopter.
- Indian Naval Ship Shivalik mission deployed to the South China Sea and Pacific Ocean, it will also participate in Exercise Rim of Pacific (RIMPAC-24).

Exercise Phases:

- **Harbour Phase:** Includes professional interactions, sports activities, and social events to foster camaraderie.
- **Sea Phase:** Focuses on testing warfighting skills and improving interoperability through joint drills at sea. These drills might include:
 - ◆ Communication exercises
 - ◆ Anti-submarine warfare (ASW) drills
 - ◆ Surface warfare exercises
 - ◆ Search and rescue (SAR) operations

Significance:

- Enhances cooperation and interoperability between the Indian Navy and JMSDF.
- Provides an opportunity to learn from each other's best practices.
- It was started in 2012 in Japan.
- It is a symbol of the shared vision and commitment of India and Japan towards ensuring peace and stability in the Indo-Pacific region.
- The collaboration between navies is a reflection of the broader strategic partnership between two nations.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. The joint military exercise 'Jimex-2024', recently mentioned in the news is conducted between which of the following countries?

- India - USA
- India - France
- India - Australia
- India - Japan.

Answer: (d)

SOCIAL ISSUES

ANTIMICROBIAL RESISTANCE (AMR)

Why in News: The PA-100 AST System, a fast antimicrobial susceptibility testing tool developed by Sysmex Astrego to combat the worldwide danger of antimicrobial resistance, has won the UK's Longitude Prize on Antimicrobial Resistance (AMR).

Key Details

- The PA-100 AST System utilises a combination of nanofluidics and phase-contrast microscopy.
- A urine sample containing the suspected bacteria is channelled through a microchip with thousands of nanochannels.
- Individual bacteria become trapped within these channels, allowing for isolated observation and analysis.
- The system then exposes the trapped bacteria to various antibiotics and monitors their growth in real-time using phase-contrast microscopy.
- This rapid assessment helps determine the most effective antibiotic treatment for the specific infection.

About Antimicrobial Resistance (AMR)

Definition: World Health Organization (WHO) defines AMR as microorganisms (bacteria, viruses, fungi, parasites) that resist the effects of medications designed to kill or inactivate them. This resistance allows these microorganisms to survive and continue to multiply, causing infections that become difficult to treat.

Status on AMR

- **At Global level:** In 2021, a report by Lancet estimated that 4.95 million deaths were associated with bacterial AMR. It is estimated that global mortalities due to AMR will touch 10 million by 2050).
- **In India:**
 - **Deaths attributable to AMR:** According to a 2023 Institute for Health Metrics and Evaluation (IHME) study, an estimated 297,000 deaths in India were directly caused by AMR in 2019.
 - **Children: Particularly Vulnerable:** Children are especially vulnerable to AMR due to their developing immune systems and frequent exposure to infections.

REASONS BEHIND THE GROWTH OF AMR IN INDIA

1. Antibiotic Misuse and Overuse

- * Unregulated Access
- * Self-Medication
- * Livestock Antibiotic Use

2. Healthcare System Challenges

- * Hospital Hygiene Issues
- * Limited Wastewater Treatment
- * Overburdened System

3. Knowledge and Resource Gaps

- * Poor Public Awareness
- * Weak Regulatory Enforcement
- * Lack of Investment in R&D

4. Environmental Factors

- * Environmental Pollution

CONSEQUENCES OF AMR IN INDIA

1. Economic

- Higher healthcare costs (stays, antibiotics, care)
- Lost productivity (illness, absenteeism)
- Strained healthcare budgets

2. Social

- Increased mortality and morbidity
- Reduced quality of life (chronic infections)
- Psychological stress and anxiety
- Disrupted social and family life

3. Political

- Public health security threat (outbreaks)
- Burden on social welfare programs
- Potential international concern

4. Environmental

- Spread of resistant bacteria (wastewater, runoff)
- Emergence of "superbugs"
- Potential impact on ecosystems

Initiatives/steps taken by india to address the issue of amr

- **Institutional and Regulatory:** Establishment of the National Centre for Disease Control (NCDC) as the nodal agency for AMR surveillance and control.
- **Legislative Framework:** Antibiotics & Livestock Feed Regulation: Implementation of regulations to restrict the use of antibiotics as growth promoters in animal feed.
- **Monitoring and Surveillance:** Establishment of the National AMR Surveillance Network (NAMSN) to monitor AMR trends in human and animal pathogens.

- **Advisory and Public Awareness:** Issuing guidelines for antibiotic stewardship programs in hospitals to promote responsible use of antibiotics. Eg. red stripe campaign.
- **International Collaboration:**
 - **Global Action Plan Support:** Commitment to and participation in the World Health Organization's (WHO) Global Action Plan on AMR.
 - **Sharing Best Practices:** Collaboration with international agencies and other countries to share best practices in AMR control.
- **Community Outreach Programs:** Self-Help for Primary Health Care (SHIPHC) India conducts community awareness programs on health issues, including AMR.

Concerns and challenges related to issue of amr in india

- **Political:** In 2021, India allocated only USD 17 million to its national AMR action plan.
- **Economic:** AMR infections are often more expensive to treat due to longer hospital stays, stronger antibiotics, and potential complications.
- **Social:** Public Awareness Gaps lead to misuse and self-medication, fueling resistance. For example, a 2023 survey in India found that only 40% of respondents were aware of the dangers of AMR.
- **Environmental:** Improper wastewater treatment allows antibiotic residues and resistant bacteria to be released back into the environment, promoting the spread of AMR.

Measures to be taken to address the issue of amr in india

- **Preventive Measures:** Antibiotic Stewardship Programs, Expand hospital-based programs that promote responsible use of antibiotics. For example, Chennai's Apollo Hospitals implemented a successful antibiotic stewardship program, reducing unnecessary antibiotic use by 30%.
- **Livestock Antibiotic Management:** The Netherlands successfully reduced antibiotic use in livestock by 70% over two decades through a combination of regulations and farmer education.
- **Strengthen Surveillance Networks:** Invest in expanding and strengthening the National AMR Surveillance Network (NAMSN).
- **Improve Wastewater Treatment:** Allocate resources to upgrade wastewater treatment infrastructure especially in urban areas to prevent the release of antibiotic residues and resistant bacteria back into the environment.
- **Government Investment:** Increase national funding for research on new antibiotics, alternative therapies, and rapid diagnostics for targeted treatment of infections.
- **Public-Private Partnerships:** Engagement at 'AMR Industry Alliance', a global public-private partnership for policy making.
- **Replicating best practices:** Chile's "Guardianes Antibióticos" (Antibiotic Guardians) program focuses on empowering young people, specifically high school students, to become advocates for responsible antibiotic use.

Conclusion

The growing spectre of AMR in India demands a united front. By implementing a combination of preventive measures, robust detection systems, and investment in research alongside public awareness campaigns.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements carefully,

1. WHO defines AMR as Microorganisms that resist the effects of medications designed to kill or inactivate them.
2. Children are especially vulnerable to AMR due to their developing immune systems.
3. China's "Guardianes Antibióticos" (Antibiotic Guardians) program offers a unique and engaging approach to tackling AMR.

How many of the above statements are correct?

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

Answer: (b) [1 and 2 only]

Descriptive Question

Q. Analyse the global trends in Antimicrobial Resistance (AMR), including the factors contributing to its rise, the impacts on healthcare effectiveness, and the strategies countries can implement to mitigate its spread and manage its consequences effectively. [15 marks] [250 words]

HUMAN TRAFFICKING IN INDIA

Why in News: The NHRC has recommended that every state in India should have an 'anti-human trafficking nodal officer' as a high level, specifically not below the rank of a State Secretary or an Inspector General of Police, who shall coordinate with the government authorities by taking effective steps and measures to curb human trafficking.

Human Trafficking

- **Definition:** The illegal movement of people for forced labour, sexual exploitation, or organ removal.

- **Types:**
 - **Sex trafficking:** Forced prostitution, pornography, or other sexual acts.
 - **Labour trafficking:** Forced or compulsory labour in various sectors.
 - **Debt bondage:** People trapped in forced labour to repay fabricated debts.
 - **Organ trafficking:** Removal of organs or tissues for illegal sale or transplant.
- **Victims:** Anyone can be trafficked, but women, girls, and children are especially vulnerable.

Status of human trafficking in India

Gender:

- **Predominantly Women and Girls:** According to the National Crime Records Bureau (NCRB) of India, over 60% of identified trafficking victims in 2022 were women and girls.
- **Boys and Men:** While less common, boys and men are also trafficked for forced labour in sectors like agriculture, brick kilns, and begging rings.

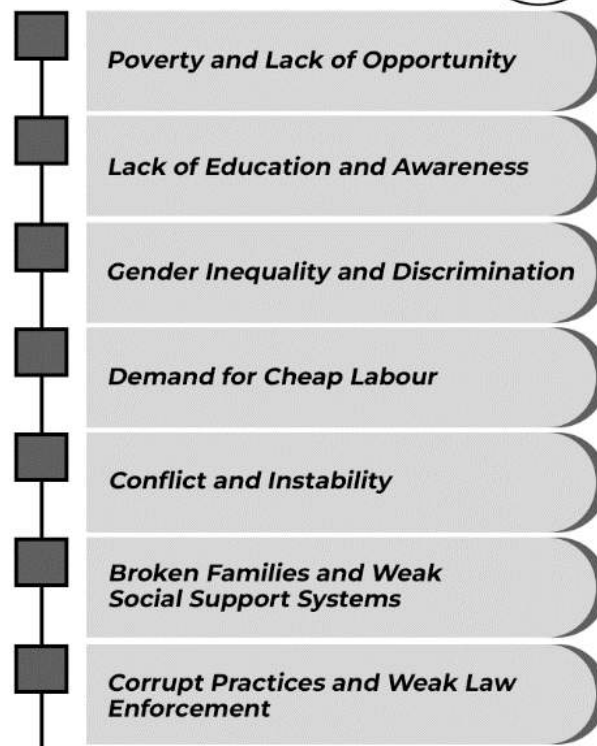
High Burden States

- Uttar Pradesh, Tamil Nadu, Jharkhand, and Gujarat are consistently reported to have high numbers of identified trafficking victims.
- These states have large populations, poverty, and porous borders, making them vulnerable.

About the ASHA Project (India)

- Offers a holistic approach to rehabilitation, for those trafficked in India
- **Vocational training:** Equips survivors with marketable skills for employment.
- **Legal aid:** Assists survivors in navigating the justice system and seeking compensation.
- **Counselling:** Provides mental health support to address trauma and rebuild emotional well-being.
- **Safe housing:** Provides temporary or long-term safe accommodation.
- **Target Audience:** Survivors of human trafficking in India.
- **Impact:** Empowers survivors through skill development, legal support, and trauma-informed care, facilitating reintegration into society.

Reasons for the Human Trafficking in India



Global Initiatives to Check Human Trafficking

- **United Nations Office on Drugs and Crime (UNODC):** Provides technical assistance and resources to support anti-trafficking efforts worldwide.
- **The Palermo Protocol:** A UN treaty establishing a global framework for preventing, suppressing, and punishing trafficking in persons.
- **Global Fund to End Modern Slavery:** Raises funds to support anti-trafficking programs, particularly in developing countries.

National level Laws/Schemes (India)

- **Immoral Traffic (Prevention) Act (ITPA), 1956:** A central law prohibiting trafficking for prostitution and other forms of exploitation.
- **National Plan of Action for Elimination of Trafficking in Human Beings (2016-2020):** A comprehensive strategy with a focus on prevention, rescue, rehabilitation, and reintegration of victims.
- **National Toll-Free Helpline (1098):** Provides a 24/7 confidential reporting mechanism for suspected trafficking cases.
- **Anti-Trafficking Units (ATUs):** Established in districts across India to investigate trafficking cases and rescue

victims.

- **SMILE Project (Support for Marginalised Individuals for Livelihood and Enterprise):** Scheme aims to empower marginalised individuals, including those vulnerable to trafficking, by providing skill development and livelihood opportunities.

Laws by the Indian states

- **The Goa Children’s Act, 2003:** This act defines trafficking and outlines specific offences related to trafficking of children in the state of Goa.
- **The Punjab Prevention of Human Smuggling Act, 2012:** This act in Punjab prescribes stricter punishments for traffickers and outlines measures for victim protection and rehabilitation.

Civil Society initiative in India

- **Project Udaan (Shakti Vahini):** A mentorship program connecting girls at risk with professional women mentors. (from Tamil Nadu).
- **SEWA’s (Self Employed Women’s Association) Livelihood Creation Program:** Provides microfinance and business training for women entrepreneurs, reducing vulnerability to trafficking (Example from Gujarat).

Challenges to Combat Human Trafficking in India

- **Hidden Crime:** Human trafficking often operates in the shadows, making it difficult to detect and measure its true scope.
- **Demand for Cheap Labour:** Industries, farms, and brothels that rely on cheap labour create a market for trafficked victims.
- **Vulnerability Factors:** Poverty, lack of education, and social marginalisation make individuals more susceptible to trafficking.
- **Corruption and Weak Law Enforcement:** Bribery and ineffective law enforcement allow traffickers to operate with impunity.
- **Interstate and International Networks:** Traffickers operate across porous Indian borders, making rescue and investigation complex.

Recommendations to Curb Human Trafficking

1. **Raising Awareness:** Civil societies can educate communities about trafficking methods and red flags. For example, street plays in local languages can effectively reach vulnerable populations.
2. **Strengthening Law Enforcement:** Increased police training, better inter-state coordination, and stricter penalties for traffickers can deter the crime.
3. **Empowering Vulnerable Populations:** Education, skill

development programs, and microfinance initiatives can create economic opportunities and reduce vulnerability.

4. **Victim Support Services:** Safe shelters, counselling, legal aid, and reintegration programs are crucial for survivors.
5. **Global Cooperation:** essential to disrupt trafficking networks and improve victim identification. For example, the Palermo Protocol is a global treaty that sets a framework for international cooperation in this area.

Conclusion

Human trafficking persists as a blight on humanity, yet as Nelson Mandela reminds us, “The greatest glory in living lies not in never falling, but in rising every time we fall.” We must persist in our efforts to combat this grave violation of human rights with unwavering resolve and compassion.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements carefully,

1. Immoral Traffic (Prevention) Act (ITPA), 2010 prohibited trafficking for prostitution and other forms of exploitation.
2. The Palermo Protocol A UN treaty establishing a global framework for illegal supply of arms.
3. The National Plan of Action for Elimination of Trafficking in Human Beings is operative from 2001.
4. Poverty, lack of education, and social marginalisation make individuals more susceptible to trafficking.

Select all incorrect statements from above statements:

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

Answer: (d) 1, 2 and 3 only.

Descriptive Question

Q. Discuss the socio-economic factors contributing to the persistence of human trafficking in India. Evaluate the effectiveness of existing legal and institutional frameworks in addressing this issue and suggest measures to strengthen efforts for combating human trafficking and ensuring justice for victims. [15 marks] [250 words]

OLD AGE PEOPLE IN INDIA

Why in News: HelpAge India report, 'Ageing in India: Exploring Preparedness & Response to Care Challenges', was released recently to commemorate 'World Elder Abuse Awareness Day' on June 15.

Issues with elderly population in India (As per report)

- **Financial Issues:**
 - Nearly 65% of elders struggle financially with current income and savings.
 - 32% have an annual income below ₹50,000.
 - Nearly 65% of respondents felt financially insecure.
 - Only 29% received financial support from family members.
- **Social Security and Healthcare:**
 - Only 29% access social security schemes, with higher rates among higher socio-economic categories (SEC B - 35% vs SEC C - 20%).
 - Over half (52%) face challenges with daily activities (bathing, dressing etc.).
 - 54% suffer from multiple Non-Communicable Diseases (NCDs).
 - Almost half (48%) had hypertension.
 - Similar proportion (43%) suffered from diabetes.
 - Most (79%) visited government health facilities in the past year.
- **Caregiving:**
 - Spouses/children were primary caregivers when elderly were bedridden.
 - More elderly lived with family in Tier II cities (66%) compared to Tier I (57%).
- **Elder Abuse:**
 - 7% of respondents reported facing elder abuse.
 - No significant variation by gender or age group.
- **Digital Literacy:**
 - 59% had no access to digital devices (smartphones most common).
 - Access dropped significantly with age (only 26% over 80 had any device).

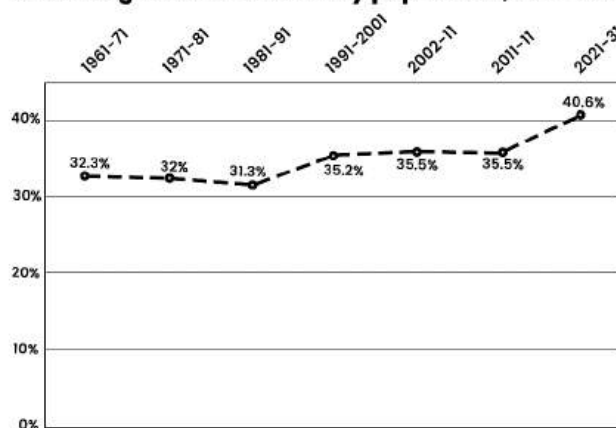
Solutions for Elderly Population Issues in India

- **Financial Security:** Extending social security coverage beyond the current limited scope, will ensure guaranteed

income particularly to vulnerable aged people.

- **Healthcare Access: Strengthening Public Healthcare:** Increasing investment in upgrading government hospitals and clinics to better serve the specific needs of the elderly.
- **Social Inclusion and Well-being: Active Ageing Programs:** Encouraging active lifestyles through accessible fitness programs, social centers, and recreational activities for seniors.
- **Urban Planning for Seniors:** Designing urban spaces that can cater to the physical limitations of the elderly, with features like wider sidewalks, accessible transportation, and senior-friendly housing options.
- **Role of NGOs and Private Sector:** Partner with NGOs and private companies to create innovative solutions for elderly care, such as assisted living facilities, day care centres, and home healthcare services.

Decadal growth of the elderly population, 1961-2031



Government Schemes for Elderly in India

- **Indira Gandhi National Old Age Pension Scheme (IGNOAPS):** Provides a monthly pension of ₹200 (increased to ₹500 for those above 80) to elderly below the poverty line (BPL).
- **National Programme for Elderly Well-being (NPEW):** Offers financial assistance to states for old-age homes, daycare centres, and other facilities for the elderly.
- **Senior Citizen Savings Scheme (SCSS):** A government-backed deposit scheme offering higher interest rates to senior citizens.
- **Pradhan Mantri Vayo Vandana Yojana (PMVVY):** Provides a guaranteed monthly pension to those aged 60 and above for ten years.
- **Rashtriya Vayoshri Yojana (RVY):** Distributes assistive living devices and aids to elderly individuals above 60 who are BPL.

Conclusion

“Through highlighting financial vulnerability and healthcare challenges, the study underscores the imperative for tailored policies to support dignified aging and enhance quality of life

for seniors in India.”

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. A Recent report titled ‘Ageing in India: Exploring Preparedness & Response to Care Challenges’, was in the news, it was released by?

- (a) Ministry of Social Justice
- (b) HelpAge India
- (c) Age well foundation
- (d) Abhilasha Foundation

Answer: (b)

Descriptive question

Q. Discuss the socio-economic challenges faced by senior citizens in India. Evaluate the effectiveness of government initiatives and propose measures to address these challenges for ensuring their well-being and social inclusion. [15 marks] [250 words]

KERALA MIGRATION SURVEY

Why in News: The Lok Kerala Sabha, a forum established by the state government for Keralites living overseas and in other states, hosted the unveiling of the Kerala Migration Survey (KMS) 2023 study.

Key Points of the Kerala Migration Survey (KMS) 2023

- **Student Migration on the Rise:** Doubled from 129,763 in 2018 to about 250,000 in 2023, indicating a shift in demographics with younger people leaving for education abroad.
- **Increase in Returning Emigrants:** The number of emigrants who returned home is estimated to be 1.8 million in 2023, a significant rise from 1.2 million in 2018, likely due to pandemic disruptions and stricter immigration policies.
- **Surge in Remittances:** Remittances to Kerala saw a significant rise post-pandemic, reaching Rs 2,16,893 crore in 2023 from Rs 85,092 crore in 2018 (a 154.9% increase).
- **Shift in Female Migration:** The proportion of female emigrants increased from 15.8% in 2018 to 19.1% in 2023, with a shift in destination from GCC countries to Europe and other Western nations.
- **Religious Distribution of Emigrants:** Muslims lead with 41.9% of emigrants, followed by Hindus (35.2%) and

Christians (22.3%).

- **GCC Still Dominant Destination:** The Gulf Cooperation Council (GCC) countries remain the most popular destination for emigrants from Kerala.
- **Family Migration:** The survey identified around 4.2 lakh cases of family migration.

Indian Workers in Gulf Countries

- **Large Diaspora:** Over 8.8 million Indians (NRIs) live in GCC nations, forming the biggest expat community (30% of total). UAE tops the list with 3.41 million, followed by Saudi Arabia (2.59 million). (Ministry of External Affairs).
- **Shifting Source States:** Traditionally, Kerala dominated blue-collar worker migration to the GCC. However, states like Uttar Pradesh and Bihar are increasingly becoming major contributors. (UAE-based Huntr).
- **Workforce Profile:**
 - **Age:** Most workers (around 70%) are blue-collar (low or semi-skilled) and fall in the prime working age group (20-40 years old).
 - **Gender:** Historically male-dominated, but women’s participation, especially in hospitality, is rising. (Huntr report).
 - **Education:** Varies from minimal schooling to vocational training and job-specific skills. Many come from low-income families seeking better financial opportunities.

Significance of Migrant workers in Gulf countries

- **For India:**
 - **Economic Pillar:** Remittances from Gulf countries, exceeding 25% of annual India diaspora inflows, are a major source of foreign exchange.
 - **Skill Uplift:** Working in the Gulf allows Indian workers to gain new skills (e.g., construction, healthcare) valuable upon their return.
 - **Soft Power Boost:** A large Indian diaspora strengthens diplomatic ties and trade (over \$100 billion annually) with Gulf nations.
- **For Gulf Countries:**
 - **Labor Lifeline:** Indian workers fill crucial labour shortages (e.g., nearly 20% of Kuwait’s workforce) in construction, healthcare, and hospitality.
 - **Cultural Mosaic:** Indian migrants enrich Gulf societies with their customs, traditions, languages, and cuisine.
 - **Economic Engine:** Indian workers boost key industries, create jobs for locals (supporting services), and increase consumer spending, contributing to economic growth.

Conclusion

The Kerala Migration Survey highlights the enduring socio-economic impact of international migration from Kerala,

underscoring its pivotal role in enhancing both household welfare and economic resilience.

[For details on Indian Migrant workers abroad refer to the e-Migrate Project article in the International Relations section.]

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Kerala Migration Survey:

1. It is launched by the international Migration Organization annually.
2. Kerala dominated blue-collar worker migration to the GCC countries.

Which of the statements given above is/are correct?

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

Answer: (b)

Descriptive Question

Q. Elaborate how migration affects educational opportunities and skill development among migrant families? Explain the difficulties faced by migrant workers about cultural adjustment and social acceptance? [15 marks] [250 words]

- **Porous borders** complement the situation of mass displacement by providing relatively easy passage to India.
- **Natural Disasters and Environmental Factors:** With increasing frequency of disasters such as cyclones, floods etc. due to climate change, the displacement of people will increase in future especially from low lying Bangladesh.
- **Lack of a Refugee Policy:** Being a non-signatory of 1951 Refugee Convention, India has not adopted international definition & standards related to refugees. This makes it difficult to differentiate refugees from economic migrants.

Refugee Policy Status in India

- India is a non-signatory to 1951 United Nations Refugee Convention and the 1967 Protocol, which help define the legal obligation of states to protect refugees.

Legal Framework for Refugees in India

- India is a non-signatory to 1951 United Nations Refugee Convention and the 1967 Protocol
- India does not have a national asylum policy.
- **The Foreigners Act (1946) and Registration of Foreigners Act (1939)** govern the entry and exit of all refugees, treating them as foreigners.
- Citizenship Amendment Act, 2019 aims to provide citizenship to religiously persecuted refugees (Hindus, Buddhists, Jains, Sikhs, Parsis, Christians) from Pakistan, Afghanistan and Bangladesh.

REFUGEE CRISIS IN INDIA

Why in News: About 5,400 people from Myanmar have taken shelter in Manipur's Kamjong district. World Refugee Day is celebrated on 20 June.

Definition of Refugee

According to the UNHCR, refugees are people forced to flee their own country and seek safety in another country. They are unable to return to their own country because of feared persecution as a result of who they are, what they believe in or say, or because of armed conflict, violence or serious public disorder.

Factors responsible for Refugee Crisis in India

- Political instability, conflicts and violence in neighbouring countries
 - Political turmoil (coups), civil wars and ethnic conflicts in neighbouring countries leads to mass displacement of people.
 - For example, Chinese Annexation of Tibet (1950s), Bangladesh Liberation War (1971); Sri Lankan Civil War (1980s-1990s) and Rohingyas from Myanmar.

Challenges Associated With Refugee Crisis Management in India

- **Security:** Infiltration by extremist groups in refugee camps.
- **Border Management:** Porous borders are difficult to monitor, leading to human, drug and arms trafficking.
- **Strain on resources** like food, water, housing, infrastructure etc.
- **Unemployment:** Refugees compete with locals for low-wage jobs, increasing unemployment among the local population.
- **Social resistance:** Local communities resist the integration of refugees in their area, leading to social tensions.
- **Human Rights Violations:** Refugees, especially women & children are vulnerable to human rights abuses, including trafficking, exploitation, and gender-based violence.
- **Environmental Degradation:** Influx and concentration of refugees in an area leads to resource over use and environmental degradation.

International Labour Organisation (ILO)'s Framework for Bridging the Workforce Gender Gap

Reasons

- **Addressing Sectoral Segregation:** Women are disproportionately concentrated in lower-paying sectors like education and healthcare (54.8% globally). Only 26.5% of women hold leadership positions in these sectors.
- **Combating the Gender Pay Gap:** Women globally earn 19.3% less than men for work of equal value. The gap widens with age, reaching 28.5% for women over 50.
- **Strengthening Policies for Work-Family Balance:** Lack of affordable childcare and parental leave policies create hurdles for women's participation. Only 67.4% of women of childbearing age (15-49) are in the labour force compared to 92.3% of men.

The framework proposes solutions to bridge the Workforce Gender Gap

- **Skills Development & Training:** Equipping women with in-demand skills for higher-paying sectors.
- **Quotas and Targets:** Setting clear targets for increased female representation in leadership roles.
- **Equal Pay Legislation & Enforcement:** Strengthening laws and ensuring their effective implementation.
- **Investment in Care Infrastructure:** Expanding access to affordable childcare and fostering a culture of shared parental responsibility.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

- Q. Which one of the following statements is not true regarding Women in Leadership?
- According to LinkedIn, women globally earn less than half of men for work of equal value.
 - In the 18th Lok Sabha, 74 women MPs were elected, approximately 13.6% of the total members.
 - Obstacles to women's leadership, begin with the rigid corporate hierarchy and lack of access to mentorship or development programs.
 - Framework for Bridging the Workforce Gender Gap by International Labour Organisation emphasises work-family balance for women.

Answer: (a) 1, 2 and 3 only

Descriptive Question

- Q. "Analyse how intersectional identities such as caste, class and region, intertwine with gender make the access of women to positions of leadership in India difficult." [10 marks] [150 words]

Free Initiative by Chahal Academy



Daily quiz of 10 MCQs from
The Hindu and Indian express

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HISTORY & CULTURE

NALANDA UNIVERSITY

Why in News: The new Nalanda University campus in Rajgir, Bihar, close to the old ruins, was officially opened by the Indian Prime Minister on June 19, 2024.



History of the Nalanda University

- **Established:** In 427 CE in modern-day Bihar by the Gupta Emperor Kumaragupta (Shakraditya). The monarchs of the Gupta Empire that founded the Buddhist monastic mahavihara (Nalanda) were devout Hindus, Kumaragupta's silver coins describe him as a devotee of the god Vishnu (parama-bhagavata or bhagavata), and it existed for 700 years till the 12th century.
- **Rulers:** It gained prominence under the reign of the Palas rulers during the 8th and 9th centuries and Harshavardhana.
 - **Dharmapala:** The second Pala king, known for his support in establishing monasteries like Somapura (Paharpur) and Vikramshila.
 - **Devapala:** Dharmapala's successor who helped a king from Sumatra build a monastery at Nalanda.
 - The Sailendra dynasty king, **Balaputradeva** founded a Buddhist monastery at Nalanda and requested Devapala to grant five villages to the monastery at Nalanda.
- **Foreign scholar:** Chinese scholar Xuan Zang (also called Hiuen Tsang and Moksadeva, a 7th-century Chinese Buddhist monk, scholar, traveller, and translator) came here and studied for around five years during the reign of King Harshavardhana (606–647).
- **Thriving Institution:** Housed 2,000 students supported by 200 villages (according to Chinese pilgrim I-Tsing).
- It includes stupas, shrines, and viharas (residential and educational buildings) and important artworks in stucco, stone, and metal.
- **International Hub:** Attracted students from China, Korea, Japan, Tibet, Mongolia, Sri Lanka, and South East Asia.
- **Subjects** taught at Nalanda University were medicine, Ayurveda, Buddhism, mathematics, grammar, astronomy, and Indian philosophy and even war tactics and politics. There is evidence that all three Buddhist doctrines—Theravada, Mahayana and Vajrayana were taught here.
- Students and teachers also came from across Asia, including Turkey and Persia.
- **Cross-Cultural Connections:** Archaeological evidence suggests contact with the Indonesian Shailendra dynasty, who built a monastery within the complex.
- **Spiritual Significance:** Located in a region where spiritual leaders like Lord Buddha and Lord Mahavira meditated.
- **Intellectual Powerhouse:** Great scholars like Nagarjuna, Aryabhata, and Dharmakirti contributed to Nalanda's rich academic tradition.
- For some 700 years, between the 5th and 12th Centuries, Nalanda was the centre of scholarship and Buddhist studies in the ancient world.
- A great fire wiped out the library of over 9 million manuscripts and at the beginning of the 12th Century.
- **Tragic Destruction:** Destroyed in 1193 by Bakhtiyar Khilji, a general under the Turkish ruler Qutbuddin Aibak.
- **Rediscovery:** Forgotten for centuries before being rediscovered by Scottish surveyor Francis Buchanan-Hamilton in 1812 and later identified as the ancient university by Sir Alexander Cunningham in 1861.

Art and Architecture - Ancient Nalanda Mahavihara

- **Design, Material and Influence:** The mahavihara complex is 12 hectares in size, and its buildings are made of red bricks.
 - In terms of architecture, Site 3 follows the panchayatana, or fivefold plan, normally seen in temples dedicated to Vishnu, with towers at its four corners.
 - The sculptural art of Nalanda, in stucco, stone and bronze, developed out of a heavy dependence on the Buddhist Gupta art of Sarnath.
 - By the ninth century a synthesis occurred between

the Sarnath Gupta idiom, the local Bihar tradition, and that of central India, leading to the formation of the Nalanda school of sculpture characterised by distinctive facial features, body forms and treatment of clothing and jewellery.

- The Nalanda bronzes, dating between the seventh and eighth centuries to approximately the twelfth century, outnumber the discovery of metal images from all other sites of eastern India.
- The Nalanda sculptures initially depict Buddhist deities of the Mahayana pantheon. For example, standing Buddhas, bodhisattvas such as Manjusri Kumara, Avalokiteshvara seated on a lotus and Naga-Nagarjuna.
- During the late eleventh and twelfth centuries, when Nalanda emerged as an important tantric centre, the repertoire came to be dominated by Vajrayana deities, for example, Vajrasharada (a form of Saraswati) Khasarpana, Avalokiteshvara, etc.
- Depictions of crowned Buddhas occur commonly only after the tenth century.
- **Monastic Life:** Discover the ruins of ten temples, eight compounds, classrooms, meditation halls, parks, and lakes, remnants of a university town.
- **Sariputta Great Stupa:** The Chinese monk credits Asoka with the construction of a stupa/temple in honour of Sariputra. Though there are differences even between various Buddhist texts with respect to its location.
- **Hieun Tsang Memorial Hall:** Pay homage to the famous Chinese traveller and learn about Buddhism through his collected works.
- **Missing Library Records:** Interestingly, neither Xuanzang nor Yijing mentions a library despite copying manuscripts during their stay. Xuanzang reportedly left Nalanda with a massive collection (657 volumes on 20 horses).
- **Tibetan Records Reveal Library:** Information about the library comes from 17th and 18th-century Tibetan records.

Accounts on Nalanda

- Buddhist sources indicate that the Gupta King Vikramaditya sent his queen and son Baladitya to study under the famous Buddhist scholar Vasubandhu.
- King Narasimhagupta became a Buddhist monk and gave up his life through meditation.
- Xuanzang also talks about the Guptas' royal connection with Nalanda. He reports that shortly after the Buddha's demise, a king called Shakraditya built a monastery at the site.
- His son Buddhagupta built one to the south of this monastery. Succeeding Gupta kings built monasteries near the one Shakradaya built: Tathagatagupta built one to its east and Baladitya to its north-east.
- **H. Heras:** A missionary and scholar who published an article in 1928 correlating names of Gupta kings mentioned by Xuanzang with rulers of the Gupta dynasty.

➤ The seals of several Gupta kings, including those of Buddhagupta, Narasimhagupta, Kumaragupta III and Vainyagupta, have been excavated from Nalanda.

- **Fredrich Asher:** A historian who emphasised the importance of royal patronage under the Guptas and the wider network of connections Nalanda likely possessed.
- **Jadunath Sarkar:** A historian who suggested the "fortress of Bihar" mentioned by Minhaj al-Siraj Juzjani could be Odantapura, another monastic establishment.
- **Salila Kulshreshtha:** A scholar who argues for a reconfiguration of the sacred space at Nalanda, involving a blurring of religious boundaries between Buddhism and Shaivism.
- **M.B. Rajani:** A scholar who used remote sensing techniques to identify additional temples outside the excavated area.
- **Hui Li:** Xuanzang's biographer who recorded details about the number of monks and their expertise at Nalanda during Xuanzang's visit.

Destruction of Nalanda Mahavihara

- **1st Attack (455-470 AD):** Hunas, a Central Asian tribe, looted the university during the reign of Emperor Samudragupta (Gupta Empire). Rebuilt by Emperor Skanda Gupta, who also established the renowned Nalanda library.
- **2nd Attack (Early 7th Century):** Goudas emperors of Bengal attacked due to political tensions with Emperor Harshavardhana of Kannauj. Despite destruction, Harshavardhana restored the university.
- **Minhaj al-Siraj Juzjani:** Persian historian whose account suggests destruction by Bakhtiyar Khalji, but doesn't explicitly mention Nalanda. It is believed that by the end of 12th century invader Bakhtiyar Khilji demolished Nalanda, killed the monks and burned the valuable library.
- **D.N. Jha, B.N.S. Yadava, R.K. Mookerji, Sukumar Dutt:** Propose a decline due to animosity between Brahmins and Buddhists.
- **Sumpa Khan-Po Yece Pal Jor & Taranatha:** Tibetan scholars suggest destruction by fire caused by disgruntled Hindu beggars.

Revival of Nalanda

- **Early 2000s:** Former President A.P.J. Abdul Kalam, Singapore government, and East Asian Summit leaders advocated for Nalanda's return.
- **March 2006:** While addressing a joint session of Bihar State Legislative Assembly, that the late former President, Dr. A.P.J. Abdul Kalam, proposed the revival of the ancient university.
- **2010:** Indian Parliament passed the Nalanda University Act, declaring it as an institution of national importance.

- The Ministry of Ayush has partnered with New Delhi Municipal Corporation, Archaeological Survey of India, and Delhi Development Authority to organise mass yoga events.
- Yoga Mahotsav 2023.
- The Government of India offers three types of Yoga courses: Bachelor's degree courses, Master's degree courses and Certification courses.
- The AYUSH department has established the Yoga Certification Board for yoga practitioners.

Conclusion

Millions of people across the globe have benefitted by the practice of Yoga which has been preserved and promoted by the great eminent Yoga Masters from ancient time to this date.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements:

Statement I: 'Yoga' has been inscribed on the 'Representative List of the Intangible Cultural Heritage of Humanity'.

Statement II: Yoga is an ancient spiritual discipline of Hinduism which focuses on bringing harmony between mind and body.

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

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

(c) :Answer

UNESCO'S 'CITY OF LITERATURE'

Why in News: Recently, Kozhikode in Kerala was declared as India's first UNESCO 'City of Literature'.

Key Details

- Kozhikode also earned a place in the 'Literature' category of the UNESCO Creative Cities Network (UCCN) in October 2023.
- Kozhikode became the first city in India to be designated as the UNESCO 'City of Literature'

- Kozhikode achieved this tag after beating Kolkata which is also the city with rich cultural history.
- **New initiatives by the Kerala government:**
 - **'City of Literature Day':** June 23 would be celebrated as 'City of Literature Day'.
 - **'City of Literature' awards:** These awards will be given on the City of Literature Day for literary contribution in the six categories - comprehensive contribution, women writers, young writers, children's literature, and translations from Malayalam to other languages and vice versa.
 - **Dedicated website:** Government launched a logo and website of 'Kozhikode - City of Literature'.
- **Cultural Heritage of Kozhikode:**
 - **Gateway to the many cultures,** the Kozhikode was called Calicut during the British and Portuguese rule served as Gateway to the coast for many foreigners, such as Persians, Arabs, Chinese, and eventually Europeans leading to the introduction of the various kinds of literary cultures in India.
 - Kozhikode is the important destination for **book festivals** for many decades. Hence, Kozhikode is a city having over 500 well functioning libraries.

UNESCO Creative Cities Network (UCCN)

- It was created in 2004.
- Aims to strengthen cooperation with and among cities that have recognized creativity as a strategic factor of sustainable development as regards economic, social, cultural and environmental aspects.
- The UNESCO Creative Cities Network covers seven creative fields: Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following cities were recently designated as the UNESCO 'City of Literature'?

- (a) Kozhikode
- (b) Srinagar
- (c) Thiruvananthapuram
- (d) Madurai

(a) :Answer

SRINAGAR GETS TAG OF 'WORLD CRAFT CITY'

Why in News: Recently, Srinagar became the fourth Indian city to be recognised as a 'World Craft City' by the World Craft Council (WCC).

Key Details

- Srinagar became the fourth Indian city to be recognised as a **'World Craft City'** by the World Craft Council (WCC).
- **Jaipur, Malappuram and Mysore** are the other three Indian cities that have previously been recognised as World Craft Cities.
- Background: In 2021, Srinagar city was designated a creative city as part of the UNESCO Creative City Network (UCCN) for crafts and folk arts.
- There are more than 10 different forms of craftsmanship that survived in Srinagar and its suburbs including **Papier-mache, Walnut wood carving, Carpets, Sozni embroidery, Pashmina and Kani shawls, etc.**
- The total craft related workforce in Srinagar stands at 1.76% approximately.
- The craft scene witnessed a major change in the 14th Century, with the arrival of Persian and Central Asian preachers and artisans.
- **Significance:**
 - This **'World Craft City'** designation will help **promote genuine crafts and craftsmen** in Jammu and Kashmir.
 - 'World Craft City' designation along with Geographical Indication tags, crafts tours, and the policies of the handicrafts and handloom department will help in the **revival of the craft industry.**
 - This World Craft Council tag will help artisans in the long term by enhancing **global recognition and demand for our handicrafts.**
 - Kashmir's handicraft sector is already showing major economic gains, with exports in the last five years jumping from Rs. 1,000 to 2,000 crores.
 - The contribution of the handicraft to the overall economy of J&K stood at 2.64% by 2016-17.
 - It will support skill preservation, cultural heritage, and access to networks for collaboration and growth & development.
- **World Crafts Council (WCC):**
 - World Crafts Council (WCC) is a Kuwait-based non-government organisation working to empower artisans and safeguard craft heritage globally.
 - 1st World Crafts Council General Assembly was held in New York on June 12, 1964.

GI tagged products in J&K:

Kani shawl (Handicraft)	Basohli Painting (Handicraft)
Kashmir Pashmina (Handicraft)	Mushqbudji Rice (Agricultural)
Kashmir Sozani Craft (Handicraft)	Rajouri Chikri Wood Craft (Agricultural)
Kashmir Paper Machie (Handicraft)	Bhaderwah Rajmash (Agricultural)
Khatamband (Handicraft)	Ramban Sulai Honey (Food Stuff)
Basmati (Agricultural)	Basohli Pashmina Woolen Products (Handicraft)
Kashmiri Hand Knotted Carpet (Handicraft)	Udhampur Kaladi (Handicraft)
Kashmir Saffron (Agricultural)	Ramban Anardana (Agricultural)

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following pairs:

Handicraft	State / Union Territory
1. Kani shawls	Jammu & Kashmir
2. Idu Mishmi Textiles	West Bengal
3. Tirangi Barfi	Madhya Pradesh

How many of the pairs given above are correctly matched?

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

Answer: (a) (1 only)

RAJA PARBA CELEBRATION

Why in News: President Droupadi Murmu attended the celebrations of Raja Parba, an agricultural festival of Odisha in Rashtrapati Bhavan.

Key Details

- Raja Parba is a three day traditional festival celebrated in Odisha on the occasion of the Mithuna Sankranti.
- It is the **first agriculture-based festival of Odisha that is celebrated in the Rashtrapati Bhavan.**

- It falls in Sukhla Pakhshya in June 14th to 16th, commemorating the onset of the monsoon season and honouring the Earth's fertility.
- The word 'Raja' came from 'Rajaswala', which means a menstruating woman who has the ability to give birth to another life.
- **Significance of Raja Parba.**
 - It is believed that, for the first three days of the festival, mother Goddess Earth called Bhudevi, a divine wife of Lord Vishnu undergoes a menstruation cycle.
 - On the second day of this festival, known as Mithuna Sankranti, sisters apply a special medicinal paste on their brothers' bodies and pray for their well-being.
 - The fourth day, called Vasumati Gadhua on which a ceremonial bath is given to the "Bhudevi".
- **Celebration:**
 - During the three days, women are given a break from household work and time to play indoor games. Girls adorn traditional saree and apply alatha on foot.
 - As long as the festival goes, no agricultural activity like ploughing or sowing takes place for it is believed that Mother Earth goes through rejuvenation during these three days.
 - All people abstain from walking barefoot on the earth.
 - As part of the celebrations, swings decorated with flowers and mango leaves were set up and were the main attraction of this festival.

Key Details

- While the Joshimath tehsil is to be renamed to Jyotirmath, the Kosiyakutoli tehsil will be renamed as Pargana Shri Kainchi Dham tehsil.
- The main objective of this name change is to increase the religious importance of these towns to boost tourism and economic development.
- **Religious and Cultural Significance:**
 - The Kosiyakutoli tehsil is well-known for Neem Karoli Baba's Kainchi Dham Ashram which was founded in 1962.
 - 'Jyotirmath' (Jyotir Peeth) is one of the four cardinal mathas (monasteries) established by the 8th-century philosopher Adi Shankaracharya to promote the 'Advaita Vedanta philosophy'.
 - He established this matha for the preservation and dissemination of spiritual knowledge and practices.
 - The other three mathas established by Adi Shankara are as follows:
 - ◆ Sri Sringeri Sharada Peetam in Chikmagalur in Karnataka.
 - ◆ Kalika Matha in Dwarka in Gujarat.
 - ◆ Govardhana Matha in Puri in Odisha.
- **Ecological Sensitivity of Joshimath:**
 - Massive tourism and development works in the Joshimath became cause of concern for the regional environment.
 - Also, due to the recent issue of land subsidence, massive cracks were developed in roads and houses in Joshimath.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the 'Raja Parba Festival,' consider the following statements:

1. It is celebrated on the occasion of the Mithuna Sankranti.
2. It is the first agriculture-based festival of Odisha that is celebrated in the Rashtrapati Bhavan.

Which of the statements given above is/are correct?

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

Answer: (c)

RENAMING OF JOSHIMATH AND KOSIYAKUTOLI

Why in News: Government of India has approved the Uttarakhand government's proposal for renaming the Joshimath tehsil in Chamoli district and the Kosiyakutoli tehsil in Nainital district.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the Adi Shankaracharya, consider the following statements:

1. He was an advocate of 'Advaita Vedanta philosophy.'
2. He initiated the Virashaiva movement.

Which of the statements given above is/are correct?

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

Answer: (a)

KHEER BHAWANI MELA

Why in News: The Jammu and Kashmir administration has made special arrangements for Kashmiri Pandits to visit the Kheer Bhawani Temple on the occasion of Kheer Bhawani Mela.

Key Details

- This is an annual festival celebrated by Kashmiri Hindus, locally known as Pandits on the occasion of Zeisht Ashtami.
- It is the largest gathering of Hindus in Kashmir after the annual Amarnath Yatra and is organised at five shrines across Kashmir.
- Hundreds of local Muslims also traditionally join these celebrations.
- While only a handful of devotees visited the temple in the 1990s, the festival was revived over a decade ago when large numbers of Kashmiri Hindu pilgrims resumed visits to these shrines.

Kheer Bhawani Temple

- This temple is dedicated to the goddess Ragnya Devi who gets her name from kheer or milk and rice pudding which pilgrims offer to the occasion of Kheer Bhawani Mela.
- Goddess Ragnya Devi is considered as the incarnation of goddess Parvati.
- This pilgrimage site is situated at Tulmulla, 30 km from Srinagar city, in central Kashmir's Ganderbal.

Security Challenges

- This year's celebration will take place in the shadow of terror, following the recent targeted deaths of pilgrims in the Valley, as well as the termination of J&K's Status in 2019.

ANNUAL AMBUBACHI MELA

Why in News: Annual 'Ambubachi Mela' was celebrated recently at Kamakhya Temple, atop Nilachal hill in Guwahati, Assam.

Key Details

- Kamakhya Temple is a major pilgrimage destination and plays a central role in the worship of the divine feminine.
- **Significance:**
 - Ambubachi Mela, also called Amoti or Tantric fertility festival, is an annual festival celebrated exclusively in Kamakhya Temple of Goddess Kamakhya during the monsoon season falling in the Assamese month of Ahaar.
 - Goddess Kamakhya is an embodiment of Shakti, and is associated with the yoni (womb) of the goddess.
 - In the beginning of this festival the temple doors are kept closed to visitors for four days reflecting the

period when goddess Kamakhya and in broader sense the Mother Earth undergoes her annual menstrual cycle.

- After four days, the Temple doors are reopened with a grand reopening and purification ceremony known as Ambubachi Mela.
- According to Hindu tradition, Ambubachi symbolises the ancient agricultural concept that Mother Earth is a fertile woman whose womb germinates seeds.
- **Kamakhya Temple:**
 - Kamakhya temple is one of the most important Shakti Peethas (sacred shrines) in the country, located atop Nilachal hills in Guwahati, Assam.
 - This temple is an important pilgrimage centre for tantric worshippers and Hindus where the mother goddess represents procreation and fertility.
 - Ambubachi Mela marks the annual menstruation cycle of the Goddess Kamakhya. During this sacred time, the temple closes for four days, followed by a grand reopening and purification ceremony.
- **Tantrism and Kamakhya Temple:**
 - In ancient India, two distinct and parallel forms of worship have existed - Vedic and Non-Vedic or Tantric. The former was based on a male-centric social order, while the latter was based on the principles of matriarchy and consequently the notions of fertility.
 - Kamrupa, the ancient name of Assam, has since centuries been associated with the Shakta cult.
 - Shaktism is the worship of the female goddess who is considered to be the ultimate source of shakti or strength. Tantric rituals exalt the female deity and celebrate the power (Shakti) of the female form of divinity.
 - With the spread of Shaktism, Kamrupa attained importance as a seat of the Shakta cult and greatly influenced the religious life and people of Eastern India.
 - The goddess Kamakhya, therefore, played a very vital role in the religious history of Assam from very early times and Kamakhya temple is considered to be one of the main shakti peethas of India.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQs

Q. 'Ambubachi Mela,' recently mentioned in the news, is associated with which of the following?

- (a) Chausath Yogini Temple (b) Virupaksha Temple
(c) Jagannath Temple (d) Kamakhya Temple

Answer: (d)

GOVERNMENT SCHEMES

ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION

Why in News: Municipal Corporation of Delhi (MCD) has reported progress on 14 out of 38 projects proposed under AMRUT 2.0.

About AMRUT Mission

- **Concerned Ministry:** Housing and Urban Affairs
- AMRUT 1.0 was launched on 25th June 2015
- **On October 1, 2021, the 2.0** edition of the program was introduced.
- It was implemented in 500 selected cities across the country, covering around **60% of the urban population**.
- In India, about **36% of people live in cities, and by 2047, that number will rise to over 50%**. According to **World Bank projections, over the next 15 years, almost \$840 billion will be needed to finance the bare minimum of urban infrastructure**.

URBAN REFORMS	AMRUT
Amrut	Water Supply
Prasad	Sewerage & Septage management
Rurban Mission	Reforms management & support
Swadesh Darshan	Capacity Building
Hriday	Green space and parks
Smart Cities	Urban Transport
	Storm Water Drainage

Issues with Urban Infrastructure in India

- **Congestion and Traffic:** Traffic congestion costs major Indian cities billions annually in terms of fuel wastage and lost productivity.
- **Water and Sanitation:** Around 163 million Indians lack access to safe drinking water, and only 20% of urban

sewage is effectively treated. NITI Aayog, Composite Water Management Index (2018).

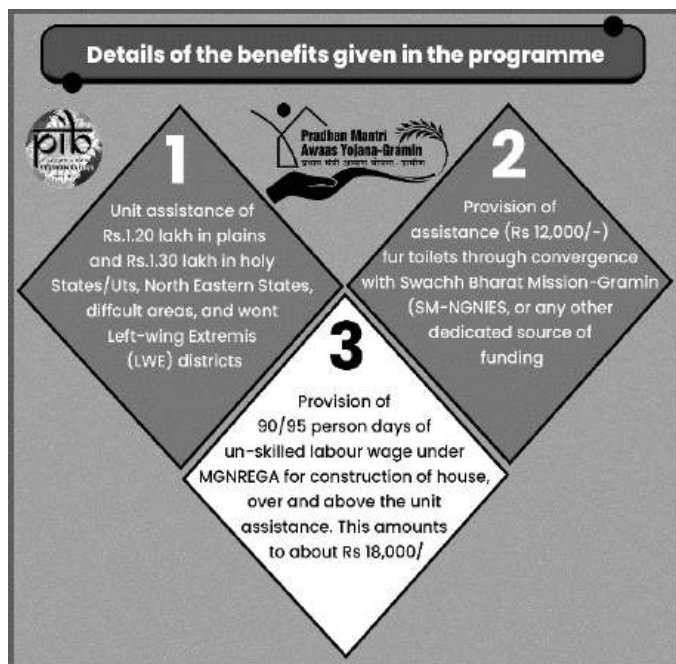
- **Waste Management:** India generates over 150,000 tonnes of municipal solid waste daily, with less than 30% being processed.
- **Housing:** Urbanisation in India is expected to reach 600 million people by 2031, leading to increased pressure on land and resources. For example, urban housing shortage in India is estimated at around 18.78 million units, affecting lower-income groups the most.
- **Infrastructure Deficit:** India's urban infrastructure investment needs are projected to exceed \$1.2 trillion by 2030.

AMRUT 2.0 Scheme

- **Launch and Duration:** Launched on October 1, 2021, replacing AMRUT 1.0 for FY 2021–2026 with a total budget of 2,99,000 crore.
- **Goals:** Provide universal water coverage to 4,900 statutory towns and manage sewage in 500 cities.
- **City Water Balance Plan (CWBP):** Focus on water bodies revitalization and water conservation to promote a circular economy.
- **Quality of Life Reforms:** Lower non-revenue water bills, strengthen urban financing, and enhance urban planning.
- **Pey Jal Survekshan:** Map water bodies, ensure equitable water distribution, repurpose wastewater, and foster city competition.
- **Sub-Mission for Water:** Incorporate global water technologies to advance water sector capabilities.
- **Information, Education, and Communication (IEC) Campaign:** Raise public awareness about water conservation.

Way Forward

- **Financial Challenges and Solutions:** Rather than depending solely on a top-down funding model, local urban bodies must diversify their sources of income in order to carry out local projects.
- **Holistic Approach:** Urban water management should adapt to the changing difficulties by taking into account the effects of climate change, rainfall patterns, and the infrastructure that is already in place.
- **Community Engagement:** By requesting suggestions and



The impressive progress in house completion rates under Pradhan Mantri Awas Yojana, has shown empowerment of women through joint ownership, and the focus on vulnerable social categories highlight the comprehensive and inclusive nature of this initiative. The success of PMAY thus far sets a promising precedent for future endeavors in achieving the vision of “Housing for All.”

records and linking them with the Ayushman Bharat Digital Health Account (ABHA - ID).

Key Details

Period: The scheme was launched under Ayushman Bharat Digital Mission by the National Health Authority (NHA) on January 1, 2023, and will remain in effect till June 30, 2025.

Eligibility: Both public and private hospitals and digital solution companies (DSCs) for creating digital health records. For public sector facilities, the incentives shall be added to the funds under Rogi Kalyan Samiti.

Incentive:

- The scheme helps reimburse each eligible hospitals and clinics up to Rs 4 crores on their expenditure on installing computers and laptops, purchase of an internet connection and to the providers of digital health solutions
- Government and private hospitals, clinics, nursing homes, diagnostic labs, and Pharmacies are paid Rs 20 for each additional record they digitise, over and above the threshold of 100 transactions a month.
- All eligible Health Facilities and digital solution entities can register for DHI Scheme through the Health Facility Registry (HFR) and ABDM Sandbox, respectively.
- Public DSCs include companies such as National Informatics Centre (NIC) and Centre for Development of Advanced Computing (C-DAC), which provide eHospital and eSushrut solutions to government hospitals.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements regarding Pradhan Mantri Awas Yojana (PMAY):

1. PMAY-Urban was launched on June 25, 2015, with the aim of addressing urban housing shortages.
2. PMAY-Gramin was launched in 2016 to provide housing for the urban poor.

Which of the above statements is/are correct?

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

Answer: (a)

National Health Authority (NHA)

- NHA is the successor of the National Health Agency, which was functioning as a registered society since 23rd May, 2018.
- It was reconstituted as the National Health Authority on 2nd January 2019, under Gazette Notification.
- NHA, an attached office of the Ministry of Health and Family Welfare with full functional autonomy, has been set-up to implement PM-JAY at the national level.
- NHA is governed by a Governing Board chaired by the Union Minister for Health and Family Welfare.
- NHA is headed by a Chief Executive Officer (CEO), an officer of the rank of Secretary to the Government of India.
- Note: To implement the PM JAY at the State level, State Health Agencies (SHAs) in the form of a society/trust have been set up by respective States.

Ayushman Bharat Digital Mission (ABDM)

- It was launched by the Prime Minister of India on 27 SEP 2021.
- Aims to develop a platform enabling interoperability of health data within the health ecosystem to create longitudinal Electronic Health Record (EHR) of every citizen.
- Also to promote adoption of open standards by all digital health stakeholders including health tech startups.
- Health Data Management Policy (HDM Policy), 2020 highlights minimum standards for privacy and data protection to be

DIGITAL HEALTH INCENTIVE (DHI) SCHEME

Why in News: Recently, the National Health Authority (NHA) has announced a year-long extension to the Digital Health Incentive Scheme (DHIS) meant for digitising patients’ health

followed by the participants/stakeholders of the ABDM ecosystem.

- Under ABDM, financial assistance is provided to States/UTs for human resources, information education & communication (IEC), and capacity building.

Ayushman Bharat Health Accounts (ABHA)

- An integral component of the Ayushman Bharat Digital Mission (ABDM).
- ABHA is a unique 14 digit number which acts as unique identification for accessing healthcare across the healthcare ecosystem.
- Any individual can enrol in Ayushman Bharat Digital Mission (ABDM) to generate a Health ID or ABHA, free of cost.
- Creation of ABHA number is voluntary.
- Getting ABHA number does not mean the eligibility of a person for any particular scheme including Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (AB-PMJAY).
- ABHA aims to create a system of personal digital health records that can be easily accessible to individuals, healthcare professionals and services providers based on individual’s informed consent.
- ABDM does not store any medical records, it only facilitates secure data exchange between the intended stakeholders on ABDM network after the patient’s consent.
- ABHA can be used outside the government hospital/ program.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about Ayushman Bharat Digital Mission (ABDM) and Ayushman Bharat Health Accounts (ABHA):

1. ABDM was launched to create a unified digital health ecosystem that enables interoperability of health data.
2. ABHA is a 16 digit unique identification number assigned to individuals for accessing healthcare services.
3. Under ABDM, financial assistance is provided to States/UTs for human resources, IEC, and capacity building

How many of the above statements are incorrect?

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

Answer: (a) (1) and (2)

CSIR- ASPIRE SCHEME

Why in News: Recently, 300 women scientists have been selected for three-year research grants under the Council of Scientific and Industrial Research (CSIR)-ASPIRE scheme.

About CSIR- ASPIRE Scheme

- The ASPIRE scheme is an initiative by the CSIR.
- The scheme was launched on International Women’s Day 2023, as a special call for research grants for female scientists.
- The scheme aims to support and empower women in the field of science by providing them with financial assistance to pursue their research endeavors over an extended period.
- In this call only women scientists across the country are eligible to apply for research grants to carry out R&D in major disciplines of science and engineering viz
 - Life Sciences,
 - Chemical Sciences,
 - Physical Sciences,
 - Engineering Sciences,
 - Inter/trans disciplinary sciences.
- The funds will be provided for staff (JRF/SRF/RA), contingency and minor equipment.
- The scheme is also aligned with the Government of India’s initiative to promote “Nari Shakti” and empower women.

One Week One Lab Programme:

- **Launched by:** It is theme-based campaign of the CSIR
- **Objective:** Fostering public engagement with sciences and science policy and showcasing the diverse legacies, exclusive innovations and technological breakthroughs of the network of CSIR labs across India.
- **Aim:** To ignite the minds of young innovators, students, start-ups, academia ad industry to look for opportunities through deep tech ventures.
- **Participation:** Each of the 37 premier Laboratories/ Institutes of CSIR spread across India.
- **Parent Ministry:** One Week One Lab Campaign is being organized under overall guidance and supervision of the Ministry of Science & Technology.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about the CSIR-ASPIRE scheme:

1. The scheme was launched to support and empower women in the field of science by providing them with financial assistance for research.
2. It is open to both male and female scientists across the country.

NATIONAL FORENSIC INFRASTRUCTURE ENHANCEMENT SCHEME (NFIES)

Why in News: The Union Cabinet, recently, approved the National Forensic Infrastructure Enhancement Scheme (NFIES) for 2024-25 to 2028-29.

Key Details

- It is a Central Sector Scheme
- The financial outlay of Rs 2254.43 crore will be provisioned by the Ministry of Home Affairs from its budget.
- It aims to strengthen and enhance forensic infrastructure across India to achieve better conviction rates in criminal cases.
- The approval came in light of impending enactment of the three new criminal laws, Bharatiya Nyaya Sanhita, 2023, Bharatiya Nagarik Suraksha Sanhita, 2023 and Bharatiya Sakshya Adhinyam, 2023, coming into effect from July 1.
- The Bharatiya Nagarik Suraksha Sanhita (BNSS) will make forensic investigation mandatory for offences punishable with seven years of imprisonment or more.

Components under the NFIES Scheme:

- Establishment of Campuses of the National Forensic Sciences University (NFSU) in India.
- Establishment of Central Forensic Science Laboratories in the country.
- Enhancement of existing infrastructure of the Delhi Campus of the NFSU.

Significance of NFIES Scheme

- Addressing the shortage of trained forensic manpower.
- Alleviating the case load / pendency of forensic laboratories across the country.
- Aligning with the Government of India's goal of securing a high conviction rate of more than 90%.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about the National Forensic Infrastructure Enhancement Scheme (NFIES):

1. The scheme aims to strengthen forensic infrastructure to achieve better conviction rates in criminal cases.
2. Under the scheme, the establishment of campuses

of the National Forensic Sciences University (NFSU) across India is planned.

3. The Bharatiya Nagarik Suraksha Sanhita (BNSS) mandates forensic investigation for offenses punishable with seven years of imprisonment or more.

How many of the above statements are correct?

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

Answer: (c)

SAFAI APNAO, BIMAARI BHAGAO (SABB) INITIATIVE

Why in News: Recently, 'Safai Apnao, Bimaari Bhagao' (SABB) (1st July to 31st August, 2024) initiative is introduced by the Ministry of Housing and Urban Affairs (MoHUA) under the Swachh Bharat Mission-Urban 2.0.

Key Details

- SABB aims to enhance preparedness of urban local bodies (ULBs) to handle challenges associated with cleanliness and diseases during monsoon season.
- SABB focuses on community involvement and public awareness, community engagement and education, rainwater harvesting, post-monsoon maintenance planning & integration.
- SABB is aligned with the Ministry of Health and Family Welfare's 'STOP Diarrhoea Campaign'- 'Diarrhoea ki Roktham, Safai aur ORS se rakhen apna dhyaan'.

Swachh Bharat Mission-Urban 2.0.

Launched by Ministry of Housing & Urban Affairs on October 1, 2021

The Mission **period** is 2021-26.

Objective is to achieve Garbage Free Status for all cities through 100% source segregation, door to door collection and scientific management of all fractions of waste.

Financial Assistance: To States/UTs for establishing of various types of Municipal Solid Waste (MSW) management plants like:

- Waste-to-Compost (WtC)
- Waste-to-Energy (WtE)
- Bio-methanation
- Material Recovery Facilities (MRF)

A new component of **Used Water Management (UWM) for Cities** with less than one lakh population has been included.

- To ensure that no untreated faecal sludge or used water is discharged into the environment.

- Remediation of all legacy dumpsites and converting them into green zones.

Under UWM component, Central Sector funds is given for:

- Setting up of Sewage Treatment Plants (STPs)/ STP-cum-Fecal Sludge Treatment plants (FSTPs);
- Laying Interception and Diversion (I&D) structures including provision of pumping stations and pumping main/gravity main upto STP
- Procuring adequate numbers of septic tank desludging equipments.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following statements about the 'Safai Apnao, Bimaari Bhagao' (SABB) initiative:

1. It is introduced by the Ministry of Housing and Urban Affairs under the Swachh Bharat Mission-Urban 2.0.
2. SABB is aligned with the Ministry of Health and Family Welfare's 'STOP Diarrhoea Campaign'.
3. One of the key components of SABB is to facilitate rainwater harvesting and post-monsoon maintenance planning.

How many of the above statements are correct?

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

Answer: (c)

POORI PADHAI DESH KI BHALAI CAMPAIGN

Why in News: Recently, Child Rights and You (CRY), along with its local partners across 20 states of India, has launched "Poori Padhai Desh Ki Bhalai" campaign.

Key Details

- The seven-week-long campaign commenced 24 June 2024 in five cities namely Delhi, Mumbai, Bengaluru, Chennai and Kolkata aims to engage all its stakeholders to address gender disparities in education in India.
- The campaign aims to raise awareness and change societal attitudes towards girls' education.
- The campaign concludes on August 15, 2024, on India's Independence Day.
- The Unified District Information System for Education-UDISE+ data for 2021-22 shows that only 58.2% of girls

are enrolled in higher secondary education, with one in three girls out of school at the secondary level and one in eight dropping out before completing secondary education.

- Efforts under the campaign aim to reverse these trends, ensuring more girls complete their education and contribute meaningfully to society.
- The campaign includes mass awareness rallies, signature campaigns, and outreach programmes.

The Case Study

CRY's fieldwork in Uttar Pradesh indicates that socio-economic challenges, cultural norms, gender discrimination, early marriages, inadequate school facilities, long travel distances, and safety concerns significantly hinder girls' educational journeys. These barriers contribute to higher dropout rates and increased vulnerability to child labor, underage marriage, teenage pregnancy, abuse, exploitation, and trafficking.

About Child Rights and You (CRY)

- It is a NGO in India working for underprivileged children.
- With its headquarters in Mumbai, CRY works with 102 local NGOs, parents, teachers, anganwadi workers, communities, district and state-level governments as well as the children themselves across 20 states in India.
- It works on the issues of:
 - Child education;
 - Health & nutrition;
 - Child labour;
 - Child marriage.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which campaign, launched by Child Rights and You (CRY) along with its local partners across 20 states of India, aims to address gender disparities in education?

Select the correct campaign from the options given below:

- (a) Beti Bachao, Beti Padhao
(b) Educate to Empower
(c) Poori Padhai Desh Ki Bhalai
(d) Right to Education

Answer: (c)

ANNUAL WORLD DRUG REPORT

Why in News: The Annual World Drug Report 2024 has brought global attention to the escalating challenges posed by drug abuse and trafficking worldwide.

Key Details

- **Released by:** The UN Office on Drugs and Crime (UNODC).
- It highlights that persistent drug abuse threatens global health and social well-being.
- The International Day Against Drug Abuse and Illicit Trafficking is observed on June 26 to raise awareness.

Key Details

- Global opium production fell by 74 per cent in 2023.
- 292 million people used drugs in 2022, a 20% increase over the past decade.
- Cannabis is the most widely used drug (228 million users), followed by opioids, amphetamines, cocaine, and ecstasy.
- Emergence of Nitazenes, potent synthetic opioids, has increased overdose deaths.
- Only 1 in 11 people with drug use disorders receive treatment; women face greater barriers to treatment.

Regional Impact

- **Asia:**
 - The **Golden Triangle's drug trafficking** is linked to other illegal activities, affecting displaced and poor communities.
 - Drastic decrease of Afghanistan's opium production in 2023 (by 95%).
 - Increase in production of Opium in Myanmar (by 36%).
- Increase in the crime rate and health problems in drug affected countries such as Ecuador, Caribbean nations, Western and Central Europe, etc.

- **India's Ranking:** India remains a significant transit country for drug trafficking, facing challenges in managing domestic drug use and trafficking networks.

UN Office on Drugs and Crime (UNODC)

The United Nations Office on Drugs and Crime (UNODC) is a United Nations agency tasked with addressing issues related to drugs, crime, and terrorism globally.

CHILD NUTRITION REPORT

Why in News: The United Nations Children's Fund (UNICEF) released the "Child Nutrition Report, 2024."

Key Details

- This report investigates Child Food Poverty in early childhood, analysing its status, trends, inequities, and causes.
- **Key Findings:** The report highlights six key findings on severe child food poverty globally:
 - **Prevalence and Distribution:** Severe child food poverty affects 27% of the world's population, with rates at 68% in South Asia and sub-Saharan Africa.
 - ◆ These countries include **India**, Bangladesh, China, Pakistan, Afghanistan, Indonesia, etc.
 - **Slow Progress:** Global efforts to reduce severe child food poverty have been insufficient.
 - **Income Disparity:** Children are affected across all income levels, with the majority coming from the poorest households.
 - **Nutrient Deficiency:** There is a lack of access to nutritious foods.
 - **Impact of Crises:** The situation is exacerbated by global food crisis, conflicts, and climate shocks.
 - **Health Implications:** This has resulted in higher rates of stunting and wasting.

• Measurement of Child Food Poverty:

Child food poverty is measured using the UNICEF and World Health Organization (WHO) dietary diversity score. To meet the minimum dietary diversity for healthy growth and development, children need to consume foods from **at least five out of the eight** defined food groups.

If children are fed

- 0-2 food groups/day they are living in **severe child food poverty**
- 3-4 food groups/day they are living in **moderate child food poverty**
- 5 or more food groups/day they are **not living in child food poverty**

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. The “Annual World Drug Report 2024” has been published by which of the following?

- (a) The Global Commission on Drug Policy
- (b) World Health Organisation (WHO)
- (c) UN Office on Drugs and Crime (UNODC)
- (d) International Narcotics Control Board (INCB)

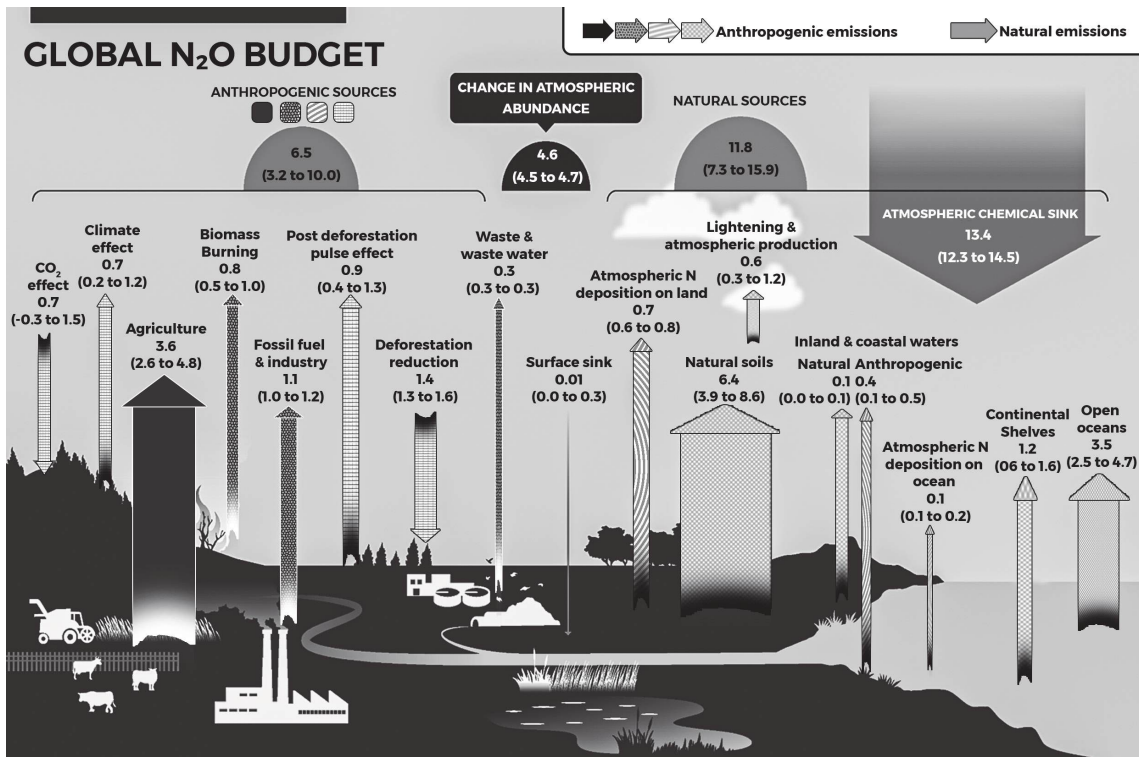
Answer: (c)

GLOBAL NITROUS OXIDE BUDGET

Why in news: A new study by the ‘Global Carbon Project,’ published in the journal ‘Earth System Science Data,’ reveals that nitrous oxide emissions, a potent greenhouse gas, remained steady from 1980 to 2020.

Key Details

Findings of GCP Study: The study found that atmospheric nitrous oxide levels reached 336 parts per billion in 2022, marking a 25% increase over pre-industrial levels while continuing to increase unchecked. This rise occurs despite the urgent need for global greenhouse gas reductions to meet Paris Agreement goals and avoid severe climate change impacts.



'Global Carbon Project'

The Global Carbon Project (GCP) is a Global Research Project of Future Earth and a partner of the World Climate Research Programme, established in 2001. It collaborates with the international science community to create a unified knowledge base to support policies aimed at reducing greenhouse gas emissions.

Nitrous Oxide

Nitrous oxide is a colourless gas with pleasant, sweetish odour and taste, sourced from agriculture, particularly fertilised soil and animal waste. This gas with a shorter life span has a global warming potential around 300 times that of carbon dioxide.

WORLD WEALTH REPORT

Why in News: The World Wealth Report 2024 has highlighted a significant increase in the number of high net-worth individuals (HNWIs) in India.

Key Details

- **Released by:** Capgemini Research Institute
- **Key Findings:**
 - The number of HNWIs in India surged by 12.2% in 2023 compared to 2022, bringing the total HNWI population in the country to 3.589 million.
 - This growth is a reflection of India's rapid economic development and wealth creation, positioning the country as a significant player in the global financial landscape.
- **Financial Wealth Growth:**
 - The financial wealth of India's HNWIs increased by 12.4% in 2023, reaching \$1,445.7 billion, up from \$1,286.7 billion in 2022.
 - Market buoyancy in 2023 contributed to a \$3.8 trillion increase in global HNWI wealth.
 - India and Australia were top performers in the Asia-Pacific region, with India recording a 12.4% growth in HNWI wealth and a 12.2% rise in the HNWI population. Australia saw a 7.9% growth in HNWI wealth and a 7.8% increase in its HNWI population.
 - The Asia-Pacific region overall experienced a 4.2% growth in HNWI wealth and a 4.8% rise in the HNWI population.
- **Economic Indicators:**
 - India's unemployment rate decreased significantly to 3.1% in 2023 from 7% in 2022.
 - The Indian economy grew by 7.3% in 2023, an increase from the 7% growth rate in 2022.
 - A resilient economy and strong equity market performance were key drivers of this wealth growth.

GLOBAL GENDER GAP REPORT

Why in the News: Recently, the Global Gender Gap Report 2024 indicated a decline in India's ranking.

Key Details

- **Released by:** World Economic Forum
- **Key Findings:**
 - India's ranking has slipped two places to 129th (out of 146 countries) from 127th in 2023.
 - India closed 64.1% of its gender gap in 2024.
 - Gender disparities in political representation persist as women hold only 13.6% of seats in the Lok Sabha.
 - **Health and Survival:** India scores well with 95.1% of the gap closed.
 - **Political Participation:** Only 25.1% of the gender gap closed, with India ranking 65th globally.
- **Worldwide Gender Parity:**
 - The global gender gap stands at 68.5% closed in 2024, showing a marginal increase from 68.4% in 2023.
 - Iceland maintains its top position with 93.5% gender gap closure.
 - Bangladesh leads the region at 99th globally, indicating disparities within South Asia.
 - India ranks 5th among South Asian countries, with the region itself placed 7th globally in gender parity.

STATE AND TRENDS OF CARBON PRICING

Why in News: Recently, the "State and Trends of Carbon Pricing 2024" report was released by the World Bank Group.

Key Details

- In 2023, for the first time, carbon pricing revenues reached a record \$104 billion.
- There are 75 carbon pricing instruments operational worldwide.
- **Carbon pricing:** Instrument that captures the external costs of greenhouse gas (GHG) emission i.e. the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves, etc.
- Carbon pricing instruments cover around 24% of global emissions.
- In India the Carbon Tax is under consideration and **not yet implemented.**
- Progress was observed in the international aviation and shipping industry.
- Carbon Pricing is operational in China.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Which of the following is an annual report published by the 'Capgemini Research Institute'?

- (a) Child Nutrition Report, 2024
- (b) The Global Nitrous Oxide Budget 2024
- (c) State and Trends of Carbon Pricing 2024
- (d) World Wealth Report 2024

(d) :Answer

GLOBAL DEBT REPORT

Why in News: The inaugural edition of the 'Global Debt Report 2024' highlights critical trends and challenges in sovereign, corporate, and sustainable bond markets amid a high-debt environment.

Key Details

- **Released by:** United Nations Trade and Development (UNCTAD).
- **Key Findings:**
 - **Sovereign Borrowing:** Sovereign and corporate bond markets have surged since 2008, reaching nearly USD 100 trillion by the end of 2023, akin to the global GDP.
 - **Corporate Debt:** Global corporate bond debt hit USD 34 trillion in 2023, with non-financial corporations contributing over 60% of the increase since 2008.
 - **Sustainable Bonds:** The sustainable bond market expanded rapidly, totaling USD 4.3 trillion by 2023, becoming crucial for funding low-carbon transitions.
 - **Refinancing Pressure:** Approximately 40% of sovereign bonds and 37% of corporate bonds are set to mature by 2026, posing significant refinancing challenges amid higher interest rates.
 - **Central Banks' Role:** Central banks have absorbed significant borrowing increases since 2008 but are now retreating, leading to more market-based and price-sensitive investments.
- **India's Perspective:**
 - India, as part of the emerging economies, faces considerable refinancing pressures with a significant portion of corporate bonds maturing in the next three years.
- **Asia's Context:**
 - In Asia, the evolving bond market dynamics necessitate close monitoring and prudent policy approaches to maintain financial stability and sustain economic growth.

United Nations Trade and Development (UNCTAD).

- UNCTAD is a permanent intergovernmental body established by the United Nations General Assembly in 1964.
- Our headquarters are located in Geneva, Switzerland.
- UNCTAD is part of the UN Secretariat.

GLOBAL PURCHASING POWER PARITIES DATA

Why in News: Global Purchasing Power Parities Data was released recently by the International Comparison Program (ICP) for the reference year 2021.

Key Details

- 176 economies that participated in the cycle.
- **GDP in 2021 in PPP terms:**
 - China - \$29 trillion (18.9% of global GDP); The United States' - \$24 trillion (15.5% of global GDP); India's - \$11 trillion (7.2% of global GDP).
 - India was the third-largest economy, followed by the Russian Federation, Japan, Germany, Brazil, and France.
 - India was classified as a lower-middle-income economy and China classified as upper-middle-income economy.

Purchasing power parities (PPPs)

- Equalise the purchasing power of different currencies, by eliminating the differences in price levels.
- Measured in terms of national currency per US dollar.
- Gives a more precise gauge of living standards between countries compared to market exchange rate (MER) estimates.

GLOBAL ANNUAL TO DECADEAL CLIMATE UPDATE (2024-2028)

Why in News: The World Meteorological Organization's recent Global Annual to Decadal Climate update (2024-2028) forecasts that global temperatures will reach record highs over the next five years.

Key Details

- **Predictions of this update:**
 - **Annual average global temperature** will rise by 1.1 - 1.9°C higher than the 1850-1900 baseline.
 - **Global mean near-surface temperature** will rise by 1.1 - 1.9°C higher than the average of 1850-1900.
 - El Nino (2023-24) will transform into La Nina (during 2024).
 - Arctic warming over the next five extended winters.
 - **Precipitation patterns:**

- ◆ Increased chance of low rainfall over North-East Brazil.
- ◆ Increased chance of wet conditions in the African Sahel.
- ◆ Warmer-than-usual temperatures in the North Atlantic.
- ◆ Sudano-Sahelian (PRESASS) region is likely to see above average rainfall.
- Above average tropical cyclone activity in the North Atlantic.
- Reductions in sea-ice concentration in the Barents Sea, Bering Sea, and Sea of Okhotsk.

STATE OF THE OCEAN REPORT

Why in News: The Intergovernmental Oceanographic Commission of UNESCO launched the State of the Ocean Report 2024.

Key Details

Objective: To contribute the 2030 Agenda, the Climate Change and Biodiversity conventions, and the Sendai Framework for Disaster Risk Reduction by promoting R&D.

Key Findings

- **Ocean Temperature:**
 - Doubled in 20 years.
 - Increased by an average of 1.45°C.
 - Some of the hotspots are above 2°C in the Mediterranean, Tropical Atlantic Ocean and Southern Oceans.
- **Sea Level rise:**
 - Account for 40% of the global rise in sea levels.
- **Declining oxygen levels:**
 - Ocean has lost 2% of its oxygen due to global warming and pollution.
 - Suffocating the Coastal species and formation of "Dead Zones."
- **Rising Acidity:**
 - Ocean acidity has increased by 30% since pre-industrial times.

Way Forward

- Marine forest restoration and conservation.
- Protection of local ecosystems in Marine Protected Areas.

Intergovernmental Oceanographic Commission:

- It promotes international cooperation in marine sciences to improve management of the ocean, coasts and marine resources.
- It has 150 Member States.

- It is in charge of coordinating the United Nations Decade of Ocean Science for Sustainable Development 2021-2030, the "Ocean Decade".

STATE OF GLOBAL AIR REPORT

Why in News: Recently, the State of Global Air 2024 report was released.

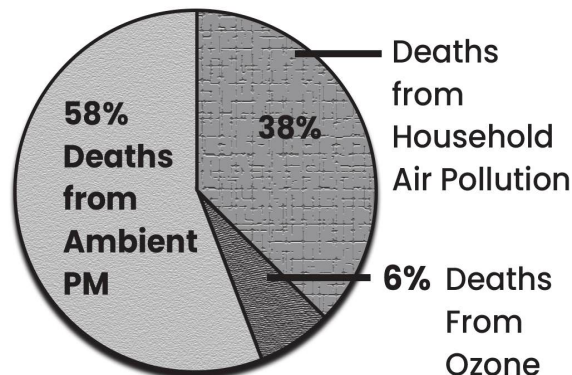
Key Details

- **Released by:** State of Global Air Initiative
- It provides a comprehensive analysis of data for air quality and health impacts for countries around the world.

Top Global Risk Factors for Death



8.1 million total deaths due to air pollution in 2021



2nd largest risk factor of deaths in 2021

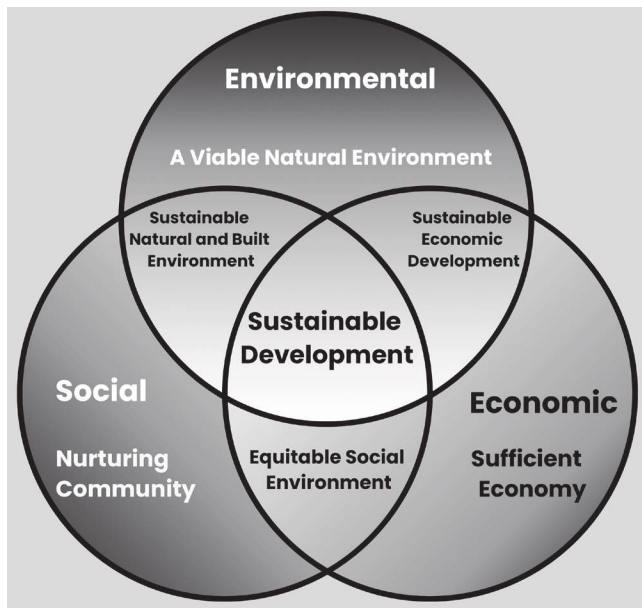
In South Asia and East, West, Central and Southern Africa, air pollution accounts for nearly 30% of all deaths in the first month after birth.

State of Global Air Initiative:

It is a collaboration between the Health Effects Institute and the Institute for Health Metrics and Evaluation's Global Burden of Disease project in partnership with UNICEF.

Particulate Matter (PM):

- PM is made of solid particles and liquid droplets in the air. They are generally classified as
 - PM10 - 2.5 and 10 micrometres (um) diameter.
 - PM2.5 - Diameter of 2.5 um or less.



United Nations High Commissioner for Refugees (UNHCR):

It is a global organisation established by the General Assembly of the United Nations in 1950 in the aftermath of the Second World War to help the millions of people who had lost their homes.

ENVIRONMENTAL PERFORMANCE INDEX

Why in News: Recently, ‘Environmental Performance Index 2024’ provided a comprehensive, data-driven summary of global sustainability.

Key Details

- EPI scores come from international organisations, research institutions, academia, and government agencies.
- Countries are ranked based on climate change performance, environmental health, and ecosystem vitality.
- **India’s Ranking:**
 - India is ranked 176th out of 180 countries, with a score of 27.6.
 - This is a slight improvement from the 2022 EPI, where India was at the bottom (180th position).
 - India struggles in areas like ecosystem vitality, biodiversity and habitat, species protection, terrestrial biome, and air quality, but performs better in forest conservation.
- **Asia’s Performance:**
 - India, Myanmar (179th), Viet Nam (178th), Bangladesh (177th), and Pakistan (176th) are among the lowest five in the EPI rankings for 2024.
 - Denmark tops the list, showcasing the wide disparity in environmental performance globally.

GLOBAL TRENDS REPORT

Why in News: ‘Global Trends Report 2023’ was published by the United Nations High Commissioner for Refugees (UNHCR).

Key Details

- It includes the latest official statistics on refugees, asylum-seekers, internally displaced and stateless people.
- Estimated 117.3 million people remained forcibly displaced at the end of 2023 due to human rights violations.
- 6.1 million displaced people returned to their areas or countries of origin in 2023, including 5.1 million internally displaced people and over 1 million refugees.
- 158,700 refugees were resettled in 2023, according to government statistics. UNHCR submitted 155,500 refugees to States for resettlement.
- 32,200 stateless people had their nationality confirmed or acquired citizenship during the year.
- **Key displacement situations in 2023:**
 - Conflict in Sudan - April 2023
 - Conflict in the Gaza Strip in the State of Palestine.
 - Violence in Myanmar.
 - Nearly 10.9 million Afghanistan remained displaced
 - Displacement within and from Ukraine
 - Democratic Republic of the Congo
 - Somalia continued to experience persistent insecurity in 2023
 - Armenia-Azerbaijan Conflict
 - Hostilities in Syria

STATE OF INDIA’S ENVIRONMENT

Why in News: Recently, the State of India’s Environment In Figures for 2024 was released.

Key Details

- **Released by:** Down to Earth (DTE) in collaboration with the Centre for Science and Environment (CSE).
- **Key findings:**
 - 2023 marked India’s hottest year on record with December temperatures peaking 1.71°C above the norm.
 - The country faced extreme weather events on 318 out of 365 days.
 - North and East India had the worst air quality, while the South enjoyed relatively cleaner air.

- Climate change has intensified to a climate emergency in India.
- 60% of deaths in 2021 were due to cardiovascular and respiratory diseases, with air pollution as a major factor.
- Greenhouse gas emissions surged by 158% from 1994 to 2019, reaching 3132 metric tonnes of CO₂-equivalent.
- The Hindu Kush Himalayas' glaciers lost 0.28 meters of water equivalent per year from 2010-2019, compared to 0.17 meters per year from 2000-2009.
- Glacial melting in the Hindu Kush Himalayas accelerated by 65%, raising concerns over glacial lake formation and downstream threats.
- **India's Ranking:**
 - India ranked 112th out of 166 countries in the SDG preparedness report with a score of 63.45/100.

REPORT ON NUCLEAR ARSENAL

Why in News: The Stockholm International Peace Research Institute (SIPRI) released a report highlighting the modernization and expansion of nuclear arsenals among the nine nuclear-armed states.

Key Details

- SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament.
- **Key Finding:**
 - **Global Nuclear Warheads:** The world has approximately 12,121 nuclear warheads, with 9,585 in military stockpiles. Deployed warheads have increased by 60 from January 2023, now totaling 3,904.
 - **High Operational Alert:** Around 2,100 deployed warheads are on high operational alert, mainly held by Russia and the USA, with China joining this category for the first time.
 - **US and Russia:** Together, they hold nearly 90% of the world's nuclear weapons and are gradually dismantling over 1,200 retired warheads.
 - **China:** Expanding its nuclear arsenal faster than any other country, now with 500 warheads, some on high alert.
 - **India:** India has increased its nuclear arsenal from 164 to 172 warheads, surpassing Pakistan's 170 warheads, placing India 6th among nuclear-armed states. India is prioritising the development of longer-range missiles capable of targeting all of China.

Stockholm International Peace Research Institute (SIPRI)

- It is an independent international institute, established in 1966 to research conflicts, armaments, arms control and disarmament.
- It provides data, analysis and recommendations to policymakers, researchers, media and the interested public.

ALL-INDIA SURVEY ON AYUSH

Why in News: Recently, the National Sample Survey Office (NSSO) released the data of an all-India survey on 'Ayush.'

Key Details

- It was conducted as part of the 79th round of the National Sample Survey (NSS).
- Ayush system of medicines refers to the use/adoption of one or more of the system(s) of Ayurveda, Yoga, Unani, Siddha, Sowa-Rigpa and Homeopathy for treatment/cure of diseases.
- **Key findings:**
 - Approximately 95% of rural and 96% of urban respondents are aware of Ayush.
 - At least one member is aware of Medicinal Plants/Home remedies/Local Health Tradition/Folk medicine in about 85% of rural and 86% of urban households.
 - Around 46% of rural and 53% of urban individuals used Ayush for prevention or treatment of ailments in the past 365 days.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. With reference to the Stockholm International Peace Research Institute (SIPRI) Report on Nuclear Arsenal, consider the following statements:

1. China and Russia together hold nearly 90% of the world's nuclear weapons.
2. India has more nuclear warheads as compared to Pakistan.
3. Presently, China is expanding its nuclear arsenal faster than any other country in the world.

How many of the above statements are correct?

(a) Only one (b) Only two

(c) All three (d) None

Answer: (b) (2 and 3 only)

STRENGTHENING DATA ECOSYSTEMS IN INDIAN SCHOOLS REPORT

Why in News: Recent investigation by Mozilla and Aapti Institute highlights the dual potential and challenges of data in India's education system.

Key Details

- According to this report, India's sprawling education system can benefit greatly from data collection and analysis but also faces related challenges and risks.
- The study, titled "Strengthening Data Ecosystems in Indian Schools," spans across 10 states and over 1.49 million educational institutions.
- **Major Challenges:**
 - Data fragmentation and poor coordination among bodies.
 - Technical barriers due to the digital divide, especially in rural areas.
 - Outdated data collection processes and heavy teacher workload.
 - Significant privacy and security risks.
- **Recommendations:**
 - Establish a centralised data collection agency.
 - Incentivize teachers for data entry tasks.
 - Deploy data specialists in rural areas.
 - Strengthen IT infrastructure and provide regular training.
 - Create feedback loops for iterative development.
 - Link financial incentives to data standard compliance. Develop school leaderboards for benchmarking.

NATIONALLY DETERMINED CONTRIBUTIONS FOR FORESTS

Why in News: Recently, Raising ambition, accelerating action Towards enhanced Nationally Determined Contributions for Forests Report was released by the United Nations Environment Programme (UNEP).

Key Details

- **Key Findings:**
 - Deforestation is critically undermining efforts to mitigate climate change throughout the globe and support global biodiversity.
 - National commitments are falling short in halting and reversing deforestation by 2030, an essential goal for climate action.

- 8/20 countries experiencing the most tropical deforestation have targets to reduce deforestation in their Nationally Determined Contributions (NDCs).
- REDD+ countries require substantial financial and technical support from developed countries to enhance forest protection efforts.
- India's efforts:
 - ◆ India, a major REDD+ country, has implemented national policies such as National Afforestation Programme (NAP), etc, for forest conservation but needs stronger NDC commitments to meet the 2030 goals.

United Nations Environment Programme (UNEP)

It is a leading global authority on the environment which inspires, informs, and enables nations and peoples to improve their quality of life without compromising that of future generations.

UN REDD+

- REDD+ is a climate change mitigation solution developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC).
- It goes beyond deforestation and focuses on sustainable management of forests through Warsaw Framework for REDD+ (WFR) adopted at COP 19 in Warsaw, December 2013.

GLOBAL ECONOMIC PROSPECTS REPORT

Why in News: World Bank's 'Global Economic Prospects Report 2024' warned recently of the weakest global economic performance in 30 years by the end of 2024.

Key Details

- Global GDP Growth is projected to slow to 2.4% in 2024, marking the third consecutive year of decline.
- Developing countries need a \$2.4 trillion annual investment to address climate change and achieve global development goals by 2030.
- Mounting tensions among the countries and trade fragmentation could disrupt the global economy.
- Despite near-term improvements, global growth remains subdued due to high debt, trade issues, and climate-related disasters.

India's Ranking:

- India is forecasted to remain the fastest-growing major economy, with a projected GDP growth rate of 6.6% for FY25, driven by robust industrial and services sectors.

Regional Outlook:

- GDP growth in Southern Asia is projected to decline from 6.6% in 2023 to 6.2% in 2024.

EXPECTED QUESTIONS FOR UPSC CSE

Prelims MCQ

Q. Consider the following reports:

1. Global Food Policy Report 2024
2. The State of World Fisheries and Aquaculture 2024 report
3. Strengthening Data Ecosystems in Indian Schools Report - 2024
4. Global Economic Prospects Report 2024.

How many of the above reports are published by the World Bank Group?

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

(Answer: (a) (4 only))

Efficiency, Renewables, Clean Cooking, and International Cooperation.

- The aim of SDG 7 is to “ensure access to affordable, reliable, sustainable, and modern energy for all.”
- **Global Highlights:**
 - Significant regional disparities in energy access and efficiency.
 - Latin America and the Caribbean lead in modern renewable energy usage.
 - Highest gains in modern renewables seen in the UK and Indonesia.
 - 79% in Sub-Saharan Africa and 33% in Central and Southern Asia still use polluting fuels for cooking.
- **India’s Ranking:**
 - Major contributor to regional progress in Central and Southern Asia.
 - Deficit in electricity access dropped from 49 million (2020) to 11 million (2022).
 - Significant growth in renewable energy usage, especially in bioenergy for heat in sugar and ethanol industries.
- **Asia Overview:**
 - India and China are key drivers of progress in renewable energy and electricity access.

ENERGY PROGRESS REPORT

Why in News: Recently, the Energy Progress Report 2024 was released.

Key Details

- **Released by** IEA, IRENA, UNSD, World Bank, and WHO.
- Summarises global progress on Energy Access,

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PERSONALITIES IN NEWS

AHILYABAI HOLKAR

Why in News: Recently, the 300th birth anniversary of the Maratha queen Ahilya Bai Holkar was celebrated throughout the country.

About Ahilyabai Holkar:

- Ahilyabai Holkar (31 May 1725 – 13 August 1795) was the Queen of the Maratha kingdom in Malwa region.
- She was born in the village of Chaundi, in the present-day Ahmednagar district in Maharashtra on 31 May 1725.
- She was a literate woman and learned how to read and write from her father because women were not allowed to pursue education.
- She was crowned as the Queen of the Kingdom after the death of her husband (Khanderao Holkar) and her father-in-law.
- **Contributions:**
 - Built hundreds of temples, renovated and repaired the Kashi Vishwanath temple, in 1780, 111 years after its destruction by Aurangzeb.
 - Promoted industrialisation and established textile industry which is famous for Maheshwari Sarees.
 - She turned her capital city, Maheshwar, into a literary, musical, artistic and an industrial centre.
 - She also made the removal of traditional laws confiscating the property of childless widows.

**Dr. SUKUMAR SEN**

Why in News: Roy Kapur Films Set to produce a Biopic on India's First Chief Election Commissioner Sukumar Sen.

About Sukumar Sen:

- He was born in Bengal on January 2, 1899 and passed away on May 13, 1963.
- In 1921, Sen joined the Indian Civil



Service (ICS), and served in various districts as an ICS officer and as a Judge.

- In 1947, he was appointed Chief Secretary of West Bengal, the senior-most rank that an ICS officer could attain in any state in British India.
- In March 1950, he took over as the first Chief Election Commissioner of India.
- He successfully oversaw the 1952 elections, the first general elections of independent India.
- After election in India, Sen was assigned to supervise election in Sudan(1953), a country that had just gained the independence from British colonialist.
- Sen also oversaw the 1957 Indian General Election.
- In 1954, he was awarded the civilian honour of Padma Bhushan.
- He was the first Vice-Chancellor of Burdwan University.

SANT KABIR DAS

Why in News: Recently, Kabirdas Jayanti marked the birth anniversary of the famous poet and social reformer of the Bhakti period.

About Sant Kabir Das (1398–1518 CE):

- Kabir Das was an Indian **mystic Poet and Saint**.
- He was born in Kashi (Varanasi), Uttar Pradesh.
- In several of his poems, Kabir calls himself a Julaha and Kori. Both mean weaver.
- He did not associate himself completely with either Hindus or Muslims.
- Kabir married a woman named Loi and had two children Kamal (Son) and Kamali (Daughter).
- He was deeply **influenced by Upanishadic non-dualism and Islamic monism**.
- Kabir followed the **Vaishnava Bhakti tradition** which stressed on complete surrender towards God.
- He **spoke against idol worship** and criticised both Hindus and Muslims for their rites, rituals and customs.
- He wrote two lined **Doha (couplet)** and longer **Pads**



(songs) which were set to music.

- Kabir's teachings influenced many individuals and the largest group following his teachings came to be known as 'Kabir Panth'.
- Literary works with compositions attributed to Kabir include **Kabir Bijak, Kabir Parachai, Sakhi Granth, Adi Granth (Sikh), and Kabir Granthawali.**

TARAKNATH DAS

Why in News: Indian revolutionary and internationalist scholar Taraknath Das was recently remembered on the occasion of his birth anniversary.

About Taraknath Das:

- Taraknath Das was born in Majhipara, North 24 Parganas, Bengal on 15 June 1884.
- He became a member of the Anushilan Samiti at a very young age.
- In the bid of avoiding arrest by the British, he escaped initially to Japan and then moved to the United States of America.
- Taraknath Das reached Seattle on 12 July 1906 and subsequently got enrolled in the University of California.
- He was a professor of political science at Columbia University and a visiting faculty in several other universities.
- He started publishing a newspaper called '**Free Hindusthan**' to champion the cause of the immigrants.
- In 1913, Das actively participated in the '**Ghadar Movement**' and its anti-colonial activities.
- In 1917, he was imprisoned for two years for '**Indo-German Conspiracy**'.

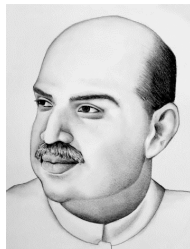


DR. SYAMA PRASAD MOOKERJEE

Why in News: Recently, Dredging Corporation of India Limited (DCIL) got ₹2,015 crore dredging contract from Syama Prasad Mookerjee Port Authority.

About Syama Prasad Mookerjee :

- He was born on 6th July 1901 in Kolkata, Bengal.
- He graduated from Calcutta University and became a fellow of the Senate in 1923.
- In 1924, he enrolled as an advocate in Calcutta High Court.



- In 1926, he left for England for further studies and became a barrister in 1927.
- At the age of 33, he became the world's youngest Vice-Chancellor of the Calcutta University and held the office till 1938.
- In 1937, Mookerjee became Leader of the Opposition in Bengal after winning elections as an independent candidate.
- He later became the president of the All-India Hindu Mahasabha in 1944.
- He was a '**Minister for Industry and Supply**' in the **Interim Central Government.**
- With the help of the RSS, he founded the Bharatiya Jana Sangh, predecessor to the Bharatiya Janata Party, in 1951.
- He formed the '**National Democratic Party**' within the Parliament.
- He considered the existence of Kashmir under Article 370 as the Balkanisation of India.
- In 1953, he travelled Kashmir, got arrested, and died as detenu.

MAHATMA GANDHI

Why in News: On June 7, 1893, Mohandas Karamchand Gandhi was thrown off a train in South Africa, sparking his development of non-violent resistance, Satyagraha.

Satyagraha: Gandhi's Path of Non-violent Resistance:

- Mahatma Gandhi formulated his ideas on non violent resistance against oppression during his stay in South Africa.
- Gandhi called his overall method of non-violent action Satyagraha/Truth-Force i.e., "**the force that is generated through adherence to Truth.**"
- For Gandhi Satyagraha was "**a way of life based on love and compassion.**"
- Gandhi practised two types of Satyagraha in his mass campaigns - **Civil Disobedience** and **Non-Cooperation.**



Civil Disobedience:

- **Meaning:** "Breaking a law and courting arrest".
- Gandhi set out a number of rules for the practice of civil disobedience which often baffle his critics, and often even his admirers set them aside as non-essential. These rules were aimed at working a "**change of heart**"-whether in the opponent or the public. E.g. - One rule was that only specific, unjust laws were to be broken. Civil disobedience didn't mean flouting all law.

Non-Cooperation

- **Meaning:** Refusing to cooperate with the opponent,

refusing to submit to the injustice being fought. E.g., strikes, economic boycotts, tax refusals, etc.

- It **didn't depend on the "change of heart" of the opponent** but on the power of the people themselves, whether they are willing to obey tyrannical decisions of the opponent.
- But the power still resides in obedience, not in the prison or the guns. In this case, the tyrant has no power. He may rant and scream and hurt and destroy-but if the people hold to it, he's finished.
- **Gandhi said**, "I believe that no government can exist for a single moment without the cooperation of the people, willing or forced, and if people suddenly withdraw their cooperation in every detail, the government will come to a standstill."

RANA PUNJA BHIL

Why in News: The Panarwa royals, the descendants of Rana Punja, recently said they are Rajput, not Bhil, as history has categorised them.

About Rana Punja Bhil:

- Rana Punja Bhil was a Bhil chieftain in the Sixteenth century who, following the alliance with **Maharana Pratap**, fought the **Battle of Haldighati** in 1576 against Akbar.
- He embodied the spirit of valour and unity among the indigenous tribes and Rajputs of the region.
- He belonged to the **Bhil tribe**, which is also well known for their warrior skills and deep connection to the forests and hills of the **Aravalli range**.
- Rana Punja Bhil's contribution to the **fight for Mewar's independence** is celebrated in folklore, ballads, and local traditions.
- In recognition of his support, Maharana Pratap bestowed upon him the **title of "Rana,"** a significant honour.
- This title elevated his status and acknowledged the Bhil community's critical role in the struggle against the Mughals.



NARAYAN MALHAR JOSHI

Why in News: Recently, Narayan Malhar Joshi was remembered on his birth anniversary.

About Narayan Malhar Joshi:

- **Narayan Malhar Joshi** also known as Nana Saheb Joshi was born on 5 June 1879 at Goregaon, Raigad district of Maharashtra.



- He co-founded the **All India Trade Union Congress in 1920**.
- He was a member of the **Bombay Provincial Congress Committee**, and was a prominent member of the **People's Volunteer Brigade (PVB)**.
- He established the **Social Service League in 1911** and served as an M.L.A (Constituency not known).
- On 20th September 1922, he established an organization called the 'Sahakari Manoranjan Mandal' for theatre artists.
- During the outbreak of WWII, his lesser-known political contributions through P V B constructively contributed to the **Quit India Movement**.
 - On **12th April 1942**, for instance, he addressed a huge gathering of 25,000 people in P V B's meeting that took place in the Goregaon area of Bombay.
- After a long career as a social and political leader, and activist, he died at the age of 76 on 30 May 1955.

CHHATRAPATI SHIVAJI

Why in News: Chhatrapati Shivaji was recently (June 6) commemorated on the 350th anniversary of his coronation as the king of the Maratha Empire.

About Chhatrapati Shivaji Raje Bhonsle:

- Chhatrapati Shivaji Maharaj was the visionary founder of the Maratha Empire and a revered warrior king.
- Shivaji Maharaj was born in Pune's Shivneri Fort in 1630.
- His mother, Jijabai, played a pivotal role in shaping his character, imparting values of justice, bravery, and a profound pride in his heritage.
- As a brilliant strategist, Shivaji Maharaj implemented cutting-edge military tactics that became synonymous with his triumphant campaigns.
- Shivaji Maharaj is celebrated for his military acumen, particularly for pioneering **guerrilla warfare** techniques known as "**Ganimi Kava**," which proved highly successful against the formidable Mughal army.
- The **inception of the Maratha Empire took place in 1674** with the coronation of Shivaji Maharaj assuming the **title of Chhatrapati**.
- He emphasised the importance of Hindavi Swarajya, an ambitious **vision for an independent and flourishing Indian state**.



- Due to his unparalleled contributions to naval warfare and strategy – Chhatrapati Shivaji Maharaj is hailed as the **Father of the Indian Navy**.

RAM PRASAD BISMIL

Why in News: The 127th anniversary of Ram Prasad Bismil's birth was observed on June 11th, 2024.

About Ram Prasad Bismil:

- Ram Prasad Bismil, born on June 11th, 1897 at a village in the Shahjahanpur district of Uttar Pradesh was an **Indian revolutionary**.
- He became a member of the **Hindustan Republican Association** at a very young age where he came to know other freedom fighters like Chandrashekhar Azad, Bhagat Singh, Sukhdev, Ashfaqulla Khan, Rajguru, Govind Prasad, Premkishan Khanna, Bhagawati Charan, Thakur Roshan Singh and Rai Ram Narain.
- Bismil is also known for having a confidential connection with Lala Har Dayal.
- Bismil participated in the **Mainpuri Conspiracy of 1918**, and the **Kakori Conspiracy of 1925**, both against the British Empire.
- Bismil wrote a number of Hindi poems - most of them patriotic. The poem "*Sarfaroshi ki tamanna ab hamaare dil mein hai, Dekhna hai zor kitna baazu-e-qaatil mein hai*" is the most well-known poem attributed to him.
- He published a pamphlet named '**A Message to My Countrymen**'.
- Bismil was charged guilty in Kakori Conspiracy and was executed by hanging.



BIRSA MUNDA

Why in News: On the recent 124th anniversary of Birsa Munda's death, tributes were paid to this revolutionary tribal leader.

About Birsa Munda:

- **Birsa Munda** was a religious leader and folk hero from the Munda Tribe of the Chhota Nagpur Plateau area.
- Birsa was born in the year 1874.
- He is known for his fierce resistance against colonial rule in India.
- After being converted to Christianity by Christian missionaries, he again returned to traditional tribal culture and founded a new religion,



Birsait.

- He participated in anti-missionary activities and anti British activities between 1886-1890, in Chaibasa.
- He started a movement called '**Ulgulan**', or '**The Great Tumult**'.
- The tribals were suppressed for long by the Dikus (non-tribals) and the intermediaries like Thikadars and money lenders including Zamindars. He compelled the Britishers for the promulgation of the **Chota Nagpur Tenancy Act, 1908**.
- He died in jail in 1900 at age of 25.

Expected Questions for UPSC CSE

Prelims MCQs

Q1. "He served as Chief Secretary of West Bengal and the first Chief Election Commissioner of India. He was also the first Vice-Chancellor of Burdwan University and was awarded the Padma Bhushan by the Government of India". The above description refers to:

- (a) Vyakarana Narahari Rao
- (b) Kshitish Chandra Neogy
- (c) Motilal Chimanlal Setalvad
- (d) Sukumar Sen

Answer: (d)

Q2. Consider the following pairs:

Member of the Interim Government (1946)	Portfolio Held
1. Dr. Syama Prasad Mookerjee	Ministry of Industry and Supply
2. Sardar Baldev Singh	Ministry of Defence
3. Joginder Nath Mandal	Ministry of Education and Arts

How many of the pairs given above are correctly matched?

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

Answer: (b) (1 and 2 only)

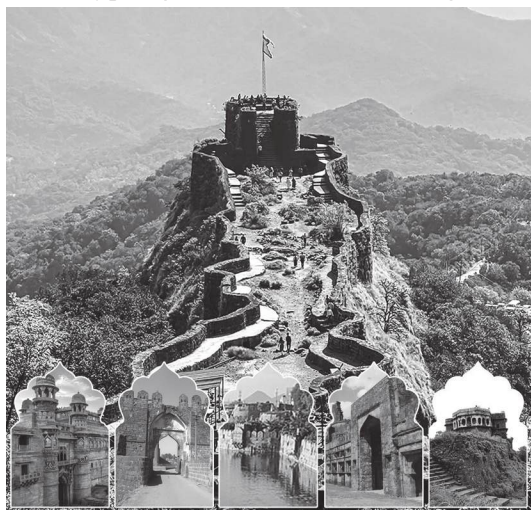
Q3. With reference to history of mediaeval India, 'Rana Punja Bhil' is associated with:

- (a) Third Battle of Panipat
- (b) Battle of Tarain
- (c) Battle of Haldighati
- (d) Battle of Takkolam

Answer: (c)

Role of Forts in Indian History

- Fort is a strong protective building or a place with a wall, wooden palisade or fence that is often further protected by a moat, deep ditch or further lines of fortified walls, guarded by warriors.
- Forts, fortifications and palaces are one of the most abundant typologies in India's built heritage.



- **Methods used for early fortifications:**
 - Creation of earthen ramparts using the soil dug out of adjoining protective dry moats or ditches that flanked areas needing protection.
 - Making large and tall protective ramparts using rubble and earth, with additional earth on the outer side.
 - Building forts and fortifications from stone and masonry. This method became the basis of the majority of India's forts in the historical period.
- Over the centuries, India has witnessed the existence of numerous full-fledged forts, surrounded by ancillary forts and chains of minor forts, fortified posts, or defensive garrison points across the subcontinent.
- Earliest archaeological evidence comes from over 1050 known sites and settlements of the **Proto-Historic Harappan Culture** (between c. 3000 and c. 1500 BCE).
 - At the larger sites, baked brick and unbaked mud bricks were used for gates, bastions and citadels with protected entrances.
 - Internal rammed earth platforms, houses, streets and structures were protected by city walls.

- Larger sites had a citadel area with protective walls.
 - ◆ No citadel was reported from Chanudaro.
 - ◆ Citadel was surrounded by large brick wall at Harappa.
 - ◆ Dholavira was fortified with an imposing wall made of stone rubble set in mud mortar.
- A different kind of fortified settlements or urban centres came up across India by 4th century BCE. These include the capitals of Solasa Maha-Janapadas, Ganga-Yamuna doab area, Uttara-Path and Dekshina Path.
- The Mauryan, Gupta, Pratihara, Vakataka, Cholas, Pandya etc. dynasties' cultural landscapes had more fortified cities than the massive defensive forts that came up from about 8th century onwards in Punjab, Sindh, Rajasthan etc. areas, and that took on a new form from c.10th to the 17th centuries.
- The present type of large forts like Chittorgarh, Ranthambore, Kumbhalgarh, Gagron, Amber, Jaisalmer, Jodhpur, Gwalior, Attock, Agra, Delhi, Lahore, Golconda, Bijapur, Raigad, Rajgad, Sindhudurg, Vijaydurg, Gingee etc. and not the fortified cities are identified as actual forts by a wider population.
- Local geography played an important role in the placement of forts and related lines of defence & defence features.
- Out of nearly 7000 formally documented and listed forts across the Indian Subcontinent only 1064 are protected.
- Literary and historical references, archaeological, architectural and art examples provide knowledge about various city walls and fortifications across India.
- Shilpa-shastras on architecture like Mansar, Maymtam, Shilpa-Ratna, Samarangana Sutradhara etc., composed in different time periods and geographical regions provide references to forts along with mentions of the building materials to be used and selection of locales for erecting forts.

Arthashastra by Kautilya refers to 6 major types of forts differentiated by their major modes of defence.

- Jal Durga (Water Fort)
 - Antardvipa-Durga (Island Fortress): Surrounded by natural water bodies e.g. Murud-Janjira
 - Sthala-Durga (Plain Fortress): Surrounded by artificial moats

or irrigated by a river e.g. Gagron, Deeg, Lohagarh, Shergarh (all in Rajasthan)

- **Dhanvana/Maru-Durga (Desert Fort):** Surrounded by an arid area of at least 5 yojanas (73 km) e.g. Jaisalmer, Bhatner, Lodrava
 - **Giri-Durga (Hill Fort)**
 - Prantara-Durga: Located on a flat hill summit e.g. Chittorgarh, Gwalior
 - Giri-parshva-Durga: The fortifications and civilian structures extend down to the hill slope e.g. Bundi's Taragarh, Ajmer's Taragarh
 - Guha-Durga: Located in a valley surrounded by hills, where the outposts and the signal towers are located.
 - **Vana-Durga (Forest Fort):** Surrounded by a dense forest of at least 4 koshas (14.6 km) e.g. Ranthambore
 - Khanjana-Durga: Built on a marsh and surrounded by thorny forests.
 - Sthambha-Durga: Built in the forest among tall trees, lacks sufficient water sources.
 - **Mahi-Durga (Earthen Fort)**
 - Mrid-Durga: Surrounded by earthen walls.
 - Parigha-Durga: Surrounded by earthen walls and stone or brick walls.
 - Panka-Durga: Surrounded by marshy land or quicksand.
 - **Nri-Durga (Human Fort):** Defended by experienced warriors and part of a city fortress with a large permanent garrison e.g. Nagaur
- **From c.10th – 11th centuries** the capital of kingdoms began to take the form of a defensive fort. Along with this, cities and towns developed around fortified citadels. Example – Delhi, Agra, Lahore, Orchha, Pune.
 - **Rajput & Jat and other North Indian Forts** – Chittorgarh, Kumbhalgarh, Ranthambore, Gagron, Jaisalmer, Amber, Jodhpur, Mehrangarh, Bikaner, Junagarh, Bundi Taragarh, Ajmer Taragarh, Gwalior.

- **Islamic Sultanate Forts** – Daultabad in Ahmadnagar, Gulbarga, Bidar, Bijapur, Golconda.
- Introduction of artillery in 16th century led to several changes to the construction and design of forts.
- **Features of Indian Forts**
 - Gates were often high and wide to allow elephants to pass.
 - Rows of sharp, stout iron spikes to dissuade an attacking army from using elephants to break down the gates.
 - Walls were often higher from the outside than the inside.
 - Made use of natural rock formations on hills.
- **Mughal Forts** – Agra and Delhi, made of red sandstone.
- **Sikh Forts** – Qila Mubarak Patiala
- **European and colonial forts** – Diu, Surat, Daman, Bassein, Bombay, Goa, Hughli, Chinsura, Fort William, Chandranagar, Serampore, Visakhapatnam, Masulipatam.
- **British established trading posts** along the coast and put-up protective ports at each post e.g. Mumbai, Fort William, Fort St. George.
- India has continued to have many fortified cities like Orchha, Amber etc. from early historical period onwards and walled sacred enclosures within cities (Trivandrum, Puri, Kanchipuram etc.). There are numerous pre-modern period cities with protective enclosing walls and gates (Agra, Delhi, Ahmedabad, Jaipur).
- India has a rich and variegated history with respect to forts & fortified heritage, of which we should be really proud of.



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