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Current Affairs

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CULTURE AND HERITAGE

1. Satnamis Community

Context:

Recently, a huge mob from the Satnami community in Chhattisgarh's Baloda Bazar district torched dozens of vehicles, pelted stones at police personnel, and set fire to the Superintendent of Police office building. The protesters, dissatisfied with the police's handling of a case involving the desecration of a sacred 'Jaitkhamb', demanded a CBI probe.

About Satnamis Community

- The term "Satnamis" means those who believe in a God whose name is 'truth'.
- The Satnamis are a predominant group within the 11% Scheduled Caste (SC) population in Chhattisgarh, believed to be an offshoot of the Ravidassia community.
- The community was founded on April 21, 1657, by Bir Bhan in Narnaul, Haryana. Udhodas who was a disciple of Saint Ravidas was the first priest or spiritual guru of the community.
- The Satnamis inhabit the plains of central Chhattisgarh, mainly in the old districts of Bilaspur, Durg, Rajnandgaon, and Raipur.
  Principles and Influence: The Satnamis emphasize three main principles:
- Adorning the attire of a Satnami devotee
- Earning money through proper means
- Not tolerating any injustice or oppression in any form
- The community is believed to exert political influence by voting collectively, and representatives occupy most of the 10 assembly segments allotted for SCs.

- The community reveres Mini Mata, the first female Member of Parliament from Chhattisgarh, who entered the Lok Sabha by winning the 1955 by-election. Political parties often invoke her legacy to appeal to the Satnamis for votes.

About Satnami Revolt of 1672

- The Satnami revolt occurred during the reign of Mughal Emperor Aurangzeb, in today's Mahendragarh district of Haryana.
- Cause: The revolt began when a Mughal soldier killed a Satnami, leading about 5,000 Satnamis to take up arms.
- The Satnamis routed the Mughal troops, drove away the administrators, and set up their own administration.
- The revolt gained support from Hindus in Agra and Ajmer, who were discontent with Aurangzeb's strict Islamic policies, including the revival of the Jizya tax, banning of music and art, and destruction of Hindu temples.
- Aurangzeb took personal command and sent troops with artillery to suppress the revolt, resulting in an attempt to annihilate the Satnamis. The remnants fled and remained disorganized and leaderless for a long time.

About New Movement

- The most significant Satnami group was founded in 1820 in the Chhattisgarh region by Saint Ghasidas, a farm servant and member of the lower (Chamar) caste.
- Saint Ghasidas established the Satnam Panth ("Sect of the True Name"), providing a religious and social identity for many Satnamis.

- He preached a code of ethical and dietary self-restraint and social equality, and authored Nirvan Gyan to propagate his teachings.
- Throughout history, Satnamis have navigated their position within a larger Hindu hierarchy, influenced by connections with the Kabir Panth at different points.

UPSC Prelims point: **Satnamis Community**
Intangible Cultural Heritage (ICH) of India

2. **What is Intangible Cultural Heritage (ICH)**

About ICH:

Intangible cultural heritage means the practices, representations, expressions, knowledge and skills that communities, groups and individuals recognize as a part of their cultural heritage.

- It also includes instruments, objects, artifacts and cultural spaces associated with such heritage.
- ICH ensures that cultural heritage does not end at monuments and collections of objects. It also includes traditions or living expressions.

The Domains in Which Intangible Cultural Heritage is Manifested:

According to UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, ICH is manifested into five broad domains:

- Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage.
- Performing arts
- Social practices, rituals and festive events
- Knowledge and practices concerning nature and the universe
- Traditional craftsmanship

What is the Intangible Cultural Heritage of India?

- With the recent inscription of Garba of Gujarat (2023) on the Representative

List of ICH of Humanity, India now has 15 intangible cultural heritage elements on the prestigious UNESCO's Representative List of ICH of Humanity.

- List of Intangible Cultural Heritage of India:

S.No.	Intangible Cultural Heritage Element	Year of Inscription
1.	Kutiyattam, Sanskrit Theater	2008
2.	Tradition of Vedic Chanting	2008
3.	Ramlila, the Traditional Performance of the Ramayana	2008
4.	Ramman, Religious Festival and Ritual Theatre of the Garhwal Himalayas, India	2009
5.	Chhau Dance	2010
6.	Kalbelia Folk Songs and Dances of Rajasthan	2010
7.	Mudiyettu, Ritual Theatre and Dance Drama of Kerala	2010
8.	Buddhist Chanting of Ladakh: Recitation of Sacred Buddhist Texts in the Trans-Himalayan Ladakh region, Jammu and Kashmir, India	2012
9.	Sankirtana, ritual singing, drumming and dancing of Manipur	2013
10.	Traditional Brass and Copper Craft of Utensil Making among the Thatheras of Jandiala Guru, Punjab, India	2014
11.	Nowruz	2016
12.	Yoga	2016
13.	Kumbh Mela	2017
14.	Durga Puja in Kolkata	2021
15.	Garba of Gujarat	2023

UPSC Prelims point: **Cultural Heritage**

INDIAN POLITY, POLICY AND INTERNAL SECURITY

1.   Issue with juvenile detention in India

Context:

The article discusses how children accused of crimes are sometimes wrongly held in adult prisons in India. It mentions cases where children were not treated according to juvenile justice laws, highlighting systemic flaws in the system that fail to protect these children adequately.

The issue with juvenile detention in India:

- **Improper Detention**: Children accused of crimes are often held in adult prisons, violating juvenile justice laws.

- **Study Findings:** Between 2016 and 2021, a study by iProbono found that 9,681 children were transferred from adult prisons to child-care institutions.

- **Legal Framework:** The 2015 juvenile justice act prohibits detaining children in adult prisons, requiring placement in observation homes or places of safety.

- **Continued Violations:** From 2017 to 2019, 75 juveniles were found in adult prisons in Haryana, Punjab, and Karnataka.

- **Systemic Issues:** Police often misrepresent children's ages, fail to inform them of their rights, and delay legal representation, leading to wrongful detention.

The gaps in the legal system:

- **Lack of Legal Representation:** Many children meet their lawyers only weeks after being imprisoned, undermining their defense.

- **Procedural Gaps**: There are no clear guidelines for ensuring a lawyer is present during police questioning.

- **Delayed Justice:** Regular inspections by the Juvenile Justice Board are not consistently conducted, allowing violations to persist unnoticed.

Way forward

- Pre-trial safeguards are essential. Laws need to clearly outline how the right to legal representation should be implemented. This will help prevent children from being wrongfully detained in adult prisons.

Mains point:The systemic flaws in India's juvenile justice system that result in children being wrongly detained in adult prisons.

2.   Need for One Nation Many Election

Context:

The Prime Minister has proposed the idea of "one nation, one election" as an antidote to the prolonged election process. The Home Minister has assured the public that this system will be introduced by the new Parliament.

- The article provides arguments against the adoption of a one nation one election system. Instead, it stresses the significance of creating a consensus for more effective Panchayati Raj and limiting the number of phases in national elections.

The issues with India's Long Election Process:

- India's lengthy general election campaign is tedious and exhausting.

- Lack of opinion polls prior to the election resulted in speculative discussions and fluctuations in the stock markets.
- The enforcement of model code of conduct for a prolonged period limits policymaking and legislation significantly and doesn't effectively control powerful campaigners from using too much rhetoric.

The arguments against the adoption of One Nation, One Election system:

- Multiple levels of government and elections are more effective in addressing different governance issues and extracting accountability from their representatives. Voters should have issues to vote on and representatives who can address those issues locally.
- Voters have no problems with the option to vote differently for state assemblies and Parliament, understanding the distinct skills and policy needs. A single election would remove this ability to send specific messages about policy preferences.
- It will deprive the voters the right to assess the state governments based on their individual performance. The state government should not be viewed merely as an extension of the ruling party at the national level.
- The democratic process provides a platform for people to express their various identities, such as locality, caste, religion, language, and nationhood. Multiple elections at different levels of government allow for the full expression of these identities, contributing to peace and unity.
- However, replacing frequent elections with one could worsen identity clashes, turning politics into an all-or-nothing contest, which is not in anyone's interest.

The way forward:

- Need for Strengthening Local Governance-There is a need to enhance the significance of local elections in India to align them with the standards observed in other nations.
- There should be more devolution of powers to local bodies by the state governments.
- A more perfect democracy requires an active third layer of governance with regular, meaningful local elections.
- If public services like roads and drainage fail, citizens should be able to vote out the person in charge at the local level.
- Calls for a single election are understandable after a long and tedious campaign. However, the new Parliament should not be distracted by unnecessary and counterproductive changes to the electoral system.

Mains point:The arguments against one nation one election system? How can empowerment of local bodies deepen the roots of democracy in India.

3. **Prime Minister Modi writes: We need to dream new dreams".**

Context:

This article is a speech by an Indian leader reflecting on his spiritual journey and the 2024 Lok Sabha elections. He discusses his campaign, visions for India's future, and the importance of unity and progress in the country. Visions for India's future

The Context of the Speech:

- The speech is given on the concluding day of the 2024 Lok Sabha elections in India. The leader has just finished a spiritual journey in Kanniyakumari and is heading to Delhi. The elections are the first in the Amrit Kaal period.

The role did meditation and spiritual reflection play:

- Meditation and spiritual reflection provided the leader with peace and

detachment during the intense election campaign.

- In Kanniyakumari, inspired by Swami Vivekananda, the leader experienced effortless meditation despite responsibilities.

- This spiritual practice allowed the leader to reflect on the bright future and unity of Bharat, drawing inspiration from the rising sun and vast ocean.

- Meditation helped the leader detach from political debates and focus on the nation's goals.

- The leader's spiritual journey emphasized the importance of cultural heritage and unity, exemplified by his visit to the Vivekananda Rock Memorial and Saint Thiruvalluvar's statue.

The future vision does the leader have for India:

- The leader envisions a **"Viksit Bharat" (De**veloped India) by 2047, emphasizing holistic reforms beyond economic changes.

- He highlights the need for speed, scale, scope, and standards in all development aspects, following the mantra of "**zero defect-zero effect.**"

The leader has outlined a three-fold vision of "reform, perform, and transform" to guide India's development:

- Reform: Initiating changes in policy and governance to meet modern needs and challenges.

- Perform: Implementation of these reforms by the bureaucracy to ensure efficient administration and service delivery.

- Transform: Engaging the general populace in these efforts, fostering a collaborative spirit of '**Jan Bhagidari' (p**eople's participation), which is crucial for true transformation and sustainable progress.

- Inspired by **Swami Vivekananda,** the leader calls for dedicating the next 25 years to nation-building, similar to the freedom struggle period.

The leader view India's role on the global stage:

- The leader views India as a pivotal voice for the Global South, representing emerging nations on significant global platforms.

- Highlights India's presidency of the G-20 as a successful example, influencing global economic discussions and strategies.

- Credits India's initiative for including the African Union in the G-20, enhancing the geopolitical influence of African nations.

- India's governance model as a benchmark for global countries, focusing on poverty alleviation and transparent administration.

- India's response to the COVID-19 pandemic as a model of resilience and support, offering aid and solutions to poorer and developing countries.

- Envisions India's technological advancements, like the Digital India campaign, as templates for other nations to improve governance and societal welfare.

Mains point: The effectiveness of the leader's call for "reform, perform, and transform" in guiding India's development, considering its alignment with his vision of a "Viksit Bharat" (Developed India) by 2047.

4.　　The Right to Property.

Context**:**

The article highlights the history of the right to property in post-colonial India and the power struggle between the judiciary and the legislature over this issue.

The debates surrounding right to property in India:

The right to property was a fundamental right protected under Article 19(1)(f) of the Constitution.

- **Bela Banerjee case–** In this case the court focused on how to interpret **Articles 19(1)(f)** and 31(2) of the Constitution. The Supreme Court of India decided that in **Article 31(2)**, the word "compensation" meant providing the owner with a fair equivalent for what they lost.

- To change this interpretation, t**he 4th constitutional amendment was passed in 1955.** This amendment explicitly stated that courts could not question the inadequacy of compensation.

- **Kesavananda Bharati Case–** Parliament understood that the term **"compensation"** in Article 31(2) was causing problems. So, they replaced it with **"amount"** through the 25th Constitution Amendment Act, 1971, which prevented the courts from interpreting it.

- The Supreme Court in this judgement interpreted that while the adequacy of the amount paid was non-justiciable, the principles for determining such compensation were still open to judicial review.

- **44th Constitutional Amendment–** The Janata Party government passed the Constitution 44th Amendment Act in 1978, which deleted the right to property from the list of Fundamental Rights and placed it as a Constitutional Right under Article 300-A.

  Article 31, which had caused a lot of debate about how compensation should be decided, was removed.

The arguments against the Deletion of Article 31:

- One of the dissenting judges in Kesavananda Bharati held that that the right to property should be considered a basic feature of the Constitution.

- The power granted under Entry 42 of the Concurrent List allows for **"acquisition," no**t **"confiscation," a**nd it's stressed that compensation should still mean what was defined in the Bela Banerjee case.

The various Supreme court judgements after the deletion of Articles 19(1)(f) and 31:

- **In the years following the deletion of Articles 19(1)(f) and 31,** the Supreme Court has held that the right to property is not only a constitutional right but also a human right. In the M.C. Mehta case, the Court stated that a law depriving a person of property must be just, fair, and reasonable.

- **B.K. Ravichandra case–** In this case, the Court observed that the phrasing of Article 300-A resembled Articles 21 and 265, and its guarantee could not be read down.

- **The Kolkata Municipal Corporation Case –** The recent decision in the Kolkata Municipal Corporation case has fleshed out seven facets protected under Article 300-A, including the right to notice, the right to be heard etc.

- The Court has affirmed that the obligation to provide compensation, which means the value of the property taken in monetary terms, as established in the Bela Banerjee case, has been restored.

Mains point:The discussions exist regarding the right to property in India? What Supreme Court rulings have emerged following the removal of Articles 19(1)(f) and 31.

5. **Neglect of Children's Issues in Elections .**

Context:

The article highlights the lack of attention given to children's interests by political parties in India, despite children constituting about 30% of the country's population. It emphasizes the

need for political parties to address issues related to children's nutrition, education, and health in their election manifestos.

The education related promises made by different political parties in India:

1. **BJP-**
   A) Promises to strengthen PM SHRI Schools, Ekalavya Schools, and other model schools.
   B) BJP: Aims for 100% Gross Enrollment Ratio (GER) from pre-school to secondary level but lacks concrete steps to achieve this.

2) **Congress:-**
   Promises to amend the Right to Education Act (RTE) to make education from Class 1-8 compulsory and free. Congress and DMK: Promise financial support and economic opportunities to curb dropout rates.

3) **CPI(M):** Promises to expand the RTE Act from 3 to 18 years.

The nutrition and healthcare related promises made by various political parties:

1) **BJP: Focus**es on eliminating malnutrition among tribal children.

2) **CPI(M): Commit**s to universalizing the Integrated Child Development Services (ICDS) Scheme to cover all children aged 0-6 years and provide nutritious meals. It assures complete coverage of basic services like immunization and regular health check-ups for all children

3) **Congress:** Promises to expand the midday meal programme up to Class 12, while DMK promises to expand the Chief Minister's Breakfast Scheme for children to aided schools (Class 1-5). It also promises to address nutritional deficiency among children and ensure full immunization of children within 5 years (currently at 76%).

4) **DMK:** Promises budgetary allocations to ensure complete healthcare during the first 1,000 days of a child's

development and mental health programmes in schools.

Some unaddressed areas in political manifestos regarding children's welfare:

Manifestos of various political parties have not addressed issues such as-

A) Children's participation in decision-making processes.

B) Online safety for children, and initiatives to prevent child exploitation.

C) There is a lack of a "**child-rights based approach" in** the manifestos and the tendency to club children with **'women' or 'youth',** thereby downplaying their specific needs.

D) There is a focus solely on a few cost-intensive model schools as opposed to bringing systemic changes to improve the public education system.

Political parties must prioritize education, child nutrition, and health in their manifestos, and voters need to assess the parties' visions and seriousness in safeguarding the future of children.

Mains point:Some unaddressed areas in political manifestos regarding children's welfare.

6.   Current status of NOTA

Context:

The article discusses the NOTA "None of the Above" option in Indian elections, introduced in 2013 to ensure voter secrecy. It highlights a recent election in Indore where NOTA received a record 2,18,674 votes, the highest ever, while the winner, Shankar Lalwani of the BJP, got 12,26,751 votes. The piece also mentions a petition that seeks to enforce legal consequences when NOTA receives the most votes.

The NOTA option introduced:

● **Purpose of NOTA:** The NOTA (None of the Above) option was introduced to

allow voters to reject all candidates, enhancing voter freedom and secrecy.

- **Legal Push:** Initiated by the Supreme Court of India in September 2013, following a petition from the People's Union for Civil Liberties (PUCL) in 2004, which argued that the existing voting rules violated the secrecy of voters.

- **Supreme Court Ruling:** The court ruled that voter secrecy must be maintained whether a voter decides to vote or not, countering the government's position that only active voters deserve secrecy.

- **EVM Concerns:** The introduction of Electronic Voting Machines (EVMs) made it apparent if a voter chose not to vote, compromising voter secrecy. NOTA was seen as a solution to maintain this secrecy.

- **Integrity in Elections:** By implementing NOTA, the Supreme Court aimed to encourage political parties to nominate candidates of higher integrity, given that voters could now formally express disapproval.

The current status of NOTA:

- **Current Impact of NOTA:** If NOTA receives the highest number of votes, it generally has no legal consequence on the election outcome at the national level, meaning the candidate with the next highest votes wins.

- **Local Rules by State Election Commissions:** In states like Maharashtra, Haryana, Puducherry, Delhi, and Chandigarh, the State Election Commission has passed orders treating NOTA as a "Fictional Electoral Candidate" in local body elections. If NOTA receives more votes than any candidate, these elections are declared null, necessitating a re-election.

- **Petition for Legal Consequences:** A petition filed in April 2024, asking for elections to be declared null and void if NOTA gets the majority. He argues

that NOTA should pressure political parties to field better candidates. He also suggests that candidates polling fewer votes than NOTA should be banned from contesting elections for five years.

Mains point:The impact and legal implications of the NOTA (None of the Above) option in Indian elections.

7.   Governance Model under Coalitions .
Context-

The article discusses the governance model that should be adopted by the new regime at the Centre, given the electoral results indicating a possible return of the coalition era. It questions whether a coalition government can deliver better governance results than the previous government, which held a single-party majority.

The economic reforms have been undertaken by the previous government:

1)   Inflation targeting monetary policy regime with RBI

2)   Insolvency and Bankruptcy Code

3)   Goods and Services Tax (GST)

4)   Real estate regulatory system

5)   Improving digital public infrastructure\

The reforms are still pending:

1)   Progress on key economic reforms like rationalizing GST rates, privatizing non-strategic PSUs, and reforming land, labour, and farm laws was limited.

Despite the passage of four labor codes, the Center did not garner support from all states.

The prospects of economic reforms under coalition:

1)   There are lesser chances of implementing long-pending economic reforms because the ruling party in its election manifesto has been mostly silent on land and farm sector reforms.

2) Given the government's significant reliance on its coalition partners for its survival, it may not go ahead with reform initiatives.

3) There is a lack of clarity on renewing efforts to bring trade unions and states on board for implementing labour law reforms.

4) Throughout history, coalition administrations have traditionally advocated for reforms mainly in times of economic crisis. However, that's not the situation now

The way forward:

1) **Governance Reforms –**
   - **Reviving institutions** like the Industrial Management Pool (IMP) could help break the dominance of the Indian Administrative Service (IAS) and encourage the appointment of domain experts and technocrats in key ministries.
   - **The new government should form a committee** with representatives from all states to develop a plan. Involving states in both shaping the new governance model and maintaining investment momentum would be beneficial.

2) **Cooperative Federalism**– A coalition structure should encourage adoption of a positive approach towards cooperative federalism and try to minimize the strain in Centre-state relations witnessed during the previous decade.

3) **Consensus Building-**There is a need to build consensus among coalition partners for initiating crucial governance reforms.
   - **A performance**-oriented team of ministers with political resolve and economic intent could pursue these reforms.

Mains point:The prospects of economic reforms under coalition? What steps can be taken to build consensus and advance reforms?

8. Women Representation in Lok Sabha
Context:

Over the years, the gender composition of the Lok Sabha has generally trended towards increasing women's representation.

About Women Representation in Lok Sabha:

- . In 2024, India elected 74 women MPs to the Lok Sabha, which is four fewer than in 2019. These 74 women constitute 13.63% of the total strength of the Lower House, significantly below the proposed 33% quota for women.

- The women MPs come from 14 different parties, with the BJP leading this list with 31 women MPs, followed by Congress with 13, and the TMC with 11.

Historical Progression:

- In 1952, only 4.41% of the members in the Lok Sabha were women. By 1962, this number went up to a little over 6%. However, in 1971, it dropped to less than 4%.

- Since then, there has been a slow but steady rise in women's representation, crossing the 10% mark in 2009 and peaking at 14.36% in 2019. However, in 2024, this representation saw a slight decrease to 13.63%.

- . **Comparative Analysis:** India's 13.63% representation of women in the Lok Sabha lags behind several other countries. For instance, 46% of MPs in South Africa are women, 35% in the UK, and 29% in the US.

Party-wise Representation:

- In 2024, women Lok Sabha MPs come from 14 parties. The BJP has the highest number of women MPs at 31, which is 12.92% of its total MPs.

- Congress follows with 13 women MPs, making up 13.13% of its MPs, and the TMC has 11 women MPs, representing 37.93% of its total.
- The SP has five women MPs, the DMK has three, and both the LJPRV and JD(U) have two each. Seven parties have one woman MP each.

New Faces and Experience:
- Of the 74 women MPs elected in 2024, 43 are first-time MPs, and Misa Bharti of the RJD is a first-time Lok Sabha MP. Women MPs, on average, have 0.76 Lok Sabha terms of experience.
- The average age of women MPs is 50 years, compared to 56 years for the overall House. Additionally, 78% of the women MPs have completed their undergraduate education, which is comparable to their male counterparts.

Candidates' Composition:
- Out of the total 8,360 candidates who stood in the 2024 Lok Sabha elections, around 10% were women.
- This number has increased over time, from 3% in 1957 to 10% in 2024. Among the major parties, 16% of BJP's candidates were women, while 13% of Congress's candidates were women, both higher than the overall average.

Mains point:About Women Representation in Lok Sabha

9.   Composition of New Parliament.
Context:

The article provides important data and facts related to the age profile, educational qualifications, gender representation, and wealth profile of MPs in the 18th Lok Sabha.

The age, education and wealth distribution of members of Parliament (MPs) in the 18th Lok Sabha:
1. **Age Profile of MPs -**According to PRS Legislative Research, more than half, or 52 percent, of MPs in the 18th Lok Sabha

are over 55 years old. Only 11 percent of MPs are aged 40 or below. Additionally, there are 58 winners who are 40 years old or younger.

2) **Educational Qualifications of MPs -**The share of graduate MPs in the 18th Lok Sabha is 78%, an increase from 72% in 2019 but lower than the 79% seen in 2009. The educational profile of MPs has moved towards greater college education.

3) **Wealth Profile–** In previous Lok Sabha elections, the richest candidates included V M Singh in 2009, Nandan Nilekani in 2014, and Ramesh Kumar Sharma in 2019.

The gender distribution in the 18th Lok Sabha:
- There are more men than women in the 18th Lok Sabha compared to the previous one. Out of 797 women who contested, only 74, or less than a tenth, won the elections.
- This represents lower female representation compared to the previous election and falls below the target of 33 percent reserved seats for women in the Lok Sabha and state legislatures under the Women's Reservation Bill.

Mains point:The age, education and wealth distribution of members of Parliament (MPs) in the 18th Lok Sabha.

10.   Diversification in Parliament potentially strengthens democracy and federalism
Context:

The article discusses how the 2024 general election in India led to more regional parties in Parliament, potentially strengthening democracy and federalism. It highlights ongoing conflicts between the central government and states over resource allocation and suggests ways to improve cooperation and fairness.

The 2024 General Election result mean for India:

1. In 2024 general election more regional parties gain seats in Parliament. This diversification in Parliament means that both the ruling coalition and the opposition will include a mix of regional parties, potentially leading to more representative governance.

2. The success of regional parties suggests an electorate seeking to address local concerns more directly, challenging the dominance of central parties.

3. **The election outcomes** reflect a response to central policies perceived as undermining state autonomy, as seen in the tensions over resource allocation and political statements during the campaign.

The major issues between the Centre and states:

- **Resource Allocation Complaints**: States governed by the opposition have accused the central government of unfair treatment regarding resource distribution. Specific examples include Kerala's complaints about inadequate transfer of resources, Karnataka's concerns over drought relief, and West Bengal's issues with funds for the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

- **Legal Disputes:** The Supreme Court of India has highlighted that a "steady stream of States are compelled to approach it against the Centre," pointing to a rise in legal disputes between the states and the central government.

- **Bias in Finance Commissions:** The states argue that the Finance Commissions, which are tasked with allocating funds between the Centre and the states, often favor the Centre. This is seen as a source of conflict, with states feeling the need to inflate their financial requirements to ensure they receive adequate funds.

The implications for poorer and richer states:

- **Resource Distribution:** Richer states generate more revenue but receive a smaller share relative to their contributions. For instance, Mumbai, as a financial hub, contributes significantly to national taxes but doesn't proportionately benefit from these contributions in local investments or services.

- **Development Disparities:** Poorer states rely on greater resource allocation to accelerate development and reduce inequality. The Finance Commission aims to distribute funds more fairly, yet historical disparities persist.

- **Market Dynamics:** Richer states benefit from markets in poorer states, fostering their own growth. For example, poorer states provide larger consumer bases that richer states rely on to expand their economic activities.

The federalism to be improved:

- **Increase Resource Devolution:** Boosting the percentage of resources devolved from the Centre to the States beyond the current 41% could empower states, allowing for more tailored local governance.

- **Fair Finance Commission Practices:** The Sixteenth Finance Commission should aim for equitable treatment of all states. This could reduce friction and improve resource distribution, particularly favoring poorer states to address inequality.

- **Enhance State Autonomy:** Reducing the central government's dominance in programs like the Public Distribution System and MGNREGS would affirm the constitutional roles of states as equal partners in governance. This will prevent the central government from overshadowing state efforts.

Mains point:DThe implications of the 2024 General Election results on the relationship between the central government and regional parties in India.

11. First Past the Post (FPTP) Vs Proportional Representation Vs MMPR System: Which one is best?

Context:

The ruling National Democratic Alliance (NDA) secured a majority by winning 293 seats with 43.3% of the national vote share. However, the opposition INDIA bloc, despite garnering 41.6% of votes, could win only 234 seats. In this context, the article discusses the potential benefits and challenges of adopting a Proportional RepresentatiTion (PR) system in India's electoral democracy.

FPTP system and what are the issues associated with it:

- **At present, India is following First Past the Post (FPTP) syste**m. It has few basic flaws, like, it often results in a significant mismatch between the percentage of votes received by political parties and their representation in legislative bodies. For example, Congress historically winning 75% of seats with 45-47% vote share, and NDA securing 64 out of 66 seats in three states with around 55% vote share.

- However, it also has many advantages like, this system is simple and feasible in a large country like India. It also provides greater stability to the executive by ensuring a majority for the ruling party/coalition.

Proportional Representation (PR) System:

- **In the Proportional Representation (PR) system,** a party is allocated legislative seats based on their overall vote share, nationally. One such system is 'party list PR', in this system, voters vote for the party and not individual candidates.

- **Advantages of PR System:** Every party, getting a percentage of vote from the voters, will get representation in the Parliament.

- **Issues associated with PR System:** PR systems can potentially lead to fragmented legislatures and unstable governments, as no single party or alliance may secure an outright majority.

- It also has a potential to formations of political parties based on the religion, caste, language, region, leading to division within the country.

Mixed Member Proportional Representation (MMPR) system:

- This system addresses the flaws of PR and FPTP systems. It uses the mix of both these systems. For example, Germany, follows the MMPR system. In their Bundestag (like India's Lok Sabha), there are 598 seats. They fill 299 seats (50%) from constituencies under the FPTP system and rest of the seats are allocated as per the PR system. Similar system is followed by South Africa, the Netherlands, Belgium and Spain.

Significance of the MMPR system:

1) **Stability: By a**dopting MMPR, India can achieve a balance between the stability offered by the FPTP system and the fair representation ensured by proportional representation.

2) **Representation to smaller states:** This system can potentially mitigate feelings of disenchantment among smaller states and regions that may lose out under a purely population-based seat allocation.

3) **Law commission recommendation:** in its 170th report, 'Reform of the electoral laws' (1999), recommended the introduction of the MMPR system on an experimental basis.

Mains point:First Past the Post (FPTP) Vs Proportional Representation Vs MMPR System

12. The Bareilly case and a flawed criminal justice system"

Context:

The article discusses a case in Bareilly where a woman was jailed for allegedly fabricating a rape accusation. It highlights police investigation flaws, prolonged undertrial detention, issues with fast-track courts, and the need for reforms in the criminal justice system.

The happened in this case:

- In 2019, a mother filed a missing person's complaint for her daughter, who later claimed she was kidnapped and raped. However, her statements had contradictions and lacked medical evidence. She later said her mother and a police officer forced her to lie.

- The accused was acquitted in 2024 due to lack of evidence, and the complainant was convicted of perjury.

The investigation flaws:

1. **Age Misjudgment:** The girl's age was misjudged as 18, not 15, based on an external medical examination. Proper verification was crucial.

2. **Lack of Medical Evidence:** No thorough medical examination was conducted, and the girl's refusal to undergo one weakened the case.

3. **Crime Scene Neglected:** The alleged crime scene in Delhi was neither located nor examined.

4. **Forensic Evidence Missing**: The clothes worn by the girl were not collected for forensic analysis.

5. **Witnesses Not Questioned:** Ramesh's mother and sister, who allegedly witnessed the crime, were neither charged nor questioned.

The implications of this case:

1. **Investigation Flaws:** The case shows serious gaps in police work. Important evidence was missing, like medical examinations and forensic analysis. Crime scenes were not investigated, and witnesses were not questioned.

2. **Judicial Oversight:** The magistrate and public prosecutor did not address the investigation's flaws. The magistrate could have directed further investigation under Section 173(8) of the CrPC.

3. **Prolonged Detention:** The accused was in jail for over four years with 109 hearings over 1,559 days. Most hearings were adjourned, partly due to COVID-19. His bail was denied due to the serious nature of the offence, and his family couldn't afford an appeal.

4. **Fast-Track Courts:** Despite a budgetary allocation of around ₹ 2,000 crore and the scheme's extension till 2026, systemic challenges in fast-track courts remain unaddressed. These courts lack dedicated infrastructure and judges, causing delays. The case took much longer than expected, showing the inefficiency of fast-track courts.

Mains point:The investigation flaws highlighted in the Bareilly case involving a fabricated rape accusation.

13. Supreme Court rulings that affect the rights of individuals accused of crimes

Context:

The article discusses two Supreme Court rulings that affect the rights of individuals accused of crimes. One ruling is about the necessity of custody before filing a charge sheet. The other is about informing the accused of the grounds of arrest in writing. Supreme Court rulings that affect the rights of individuals accused of crimes

1. **The Supreme Court rulings that affect the rights of individuals accused of crimes:**

   Custody Not Required Before Charge Sheet Filing:

● The Supreme Court ruled that an accused does not always need to be in custody when a charge sheet is filed, provided they are cooperating and not likely to abscond. This directive alleviates unnecessary detentions, easing the burden on both investigating agencies and the accused.

● **For example:** In Siddharth v. State of Uttar Pradesh (2021), the Court highlighted that Section 170 of the CrPC does not mandate custody for filing charge sheets.

2. **Mandatory Written Grounds of Arrest:**

● The Court emphasized that informing the accused in writing about the grounds of arrest is a constitutional right under Article 22.

   Examples:

● a**) In Pankaj Bansal v. Union of India (2023),** the Court reiterated that the reasons for arrest must be documented in writing to uphold due process and transparency, further aligning with constitutional mandates.

● b**) In Prabir Purkayastha v. State (NCT of Delhi), th**e Court reaffirmed the same principle, applying it equally under the UAPA, emphasizing the necessity for detailed, personalized grounds of arrest.

The implications of these judgements:

● **Reduced Need for Custody:** The SC ruling on custody before filing a charge sheet, as outlined in Siddharth v. State of Uttar Pradesh (2021), reduces unnecessary detentions, easing the burden on investigating officers and courts.

● **The mandate to provide written grounds of arrest enhances** transparency and protects constitutional rights under Article 22 of the Constitution. The SC emphasized that written grounds help the accused seek legal counsel and bail, ensuring fair legal proceedings under Section 50(1) of the CrPC.

● **Extension to Special Statutes: The** directive to provide written grounds of arrest, initially highlighted in cases involving Prevention of Money Laundering Act (PMLA) and the Unlawful Activities (Prevention) Act (UAPA), is set to influence procedures under the Criminal Procedure Code (CrPC) as well.

Mains point:The recent Supreme Court rulings regarding the rights of individuals accused of crimes and their implications on custody before charge sheet filing and informing the accused of the grounds of arrest in writing.

14. **Digital Competition Bill: Its core needs strengthening.**

Context:

   The Ministry of Corporate Affairs recently concluded public consultations on the draft Digital Competition Bill (DCB) and the findings of the Committee on Digital Competition Law (CDCL).

● The CDCL highlighted the necessity of a robust framework to support the rapid growth of India's digital ecosystem. It recommended introducing ex-ante measures through the DCB to complement the existing ex-post framework under the Competition Act. Digital Competition Bill: Its core needs strengthening

The key provisions of draft Digital Competition Bill (DCB):

Stages in the process:

● Identification of core digital services (CDS).

- Designation of Systemically Significant Digital Enterprises (SSDE) for each CDS.
- Mandatory ex-ante compliance obligations for an SSDE.
- Penalties for non-compliance by an SSDE.

Identification of CDS:

- The CDCL suggests pre-identifying certain digital services prone to market concentration based on the Competition Commission of India's (CCI) experience and global practices.
- Nine digital services, including online search engines and video-sharing platforms, have been identified as CDS.

The concerns related to the bill:

- **Identification of CDS:** Unlike the EU's Digital Markets Act (DMA), the DCB lacks clear guidelines on identifying CDS, raising concerns about fairness and transparency.
- The DCB needs a systematic approach for updating the CDS list, with the CCI better positioned to propose amendments based on its dealings with anti-competitive practices.
- **Double Penalty:** The proposed ex-ante regime under the DCB could lead to a double penalty for SSDEs, as it would operate alongside the existing ex-post regime under the Competition Act. The CDCL suggests rationalizing penalties to avoid disproportionate punishments for the same conduct under both regimes. This should be codified in the statute for clarity.

Way forward:

- **Strengthening the DCB:** The government should refine the DCB based on public feedback, ensuring it clearly defines the framework within which the CCI operates. Building a robust ex-ante regime requires addressing concerns about certainty and fairness.

- **Enhancing CCI's Technical Capacity:** The CCI should enhance its technical capacity and establish a Digital Markets and Data Unit to effectively implement the DCB while maintaining its ex-post responsibilities.

Mains point:Digital Competition Bill (DCB).

15.   Implications of terror attack in Raesi.

Context:

The Reasi attack on a bus full of pilgrims in Jammu & Kashmir (J&K), resulting in nine deaths and 33 injuries, underscores the persistent threat of Pakistan-sponsored terrorism in the region.

- This incident occurred during a period of national celebration in India, highlighting the ongoing strategy of terrorist groups to exploit significant national events to convey their messages. The attack, claimed by The Resistance Front (a front for Lashkar-e-Taiba), signifies a renewed effort by Pakistan to destabilize J&K and challenge India's sovereignty.

- India's security apparatus must adapt to the evolving tactics of terrorist groups. The focus should be on preventing future attacks and ensuring the safety of civilians, especially during major events.

The implications of the Reasi Attack:

1.   **Symbolic Timing:**

- The attack coincided with India's democratic celebrations, including the inauguration of the NDA government and the presence of a strong opposition, reflecting the terrorists' strategy to undermine such occasions.

- It conveys Pakistan's ongoing commitment to its "war by a thousand cuts" strategy in J&K.

2.   **Message of Persistence:**

- The attack is intended to show that despite a reduction in the strength of

terrorist groups, Pakistan remains invested in its J&K strategy. It aims to prevent the perception that the J&K issue has been resolved in favor of India.

Way forward:

Strengthening Local Governance:

- Conducting assembly polls in J&K should not be delayed as it symbolizes India's clear intent and commitment to democratic processes.

- Empowering local governance can help address the root causes of unrest and reduce the appeal of extremist ideologies.

Comprehensive Counter-Terrorism Strategy:

- Developing a comprehensive counter-terrorism strategy that includes military, political, and socio-economic dimensions.

- Engaging local communities in counter-terrorism efforts and promoting development and integration of J&K into the national mainstream.

Enhanced Security Measures:

- Redoubling security efforts, particularly in vulnerable areas and during significant national events, is crucial.

- This includes better intelligence, surveillance, and quick response mechanisms to thwart potential attacks.

Diplomatic Pressure:

- India must continue to apply diplomatic pressure on Pakistan to curb its support for terrorist activities.

- Engaging international allies and organizations to hold Pakistan accountable for its actions in J&K is essential.

Mains point:The Reasi attack.

INTERNATIONAL RELATIONS

1. 26th Committee on Environmental Protection (CEP-26)

Context:

India successfully hosted the 46th Antarctic Treaty Consultative Meeting (ATCM-46) and the 26th Committee on Environmental Protection (CEP-26) from May 20th to May 30th, 2024, in Kochi, Kerala.

Key outcome of the event:

1. **Environmental Evaluations for Maitri-II**: India will submit comprehensive environmental evaluations for the establishment of the new research station, Maitri-II.

2. **CEP Priorities**: The Committee agreed to focus on:
   a) Management of implications of sea ice change
   b) Enhancing environmental impact assessments of major activities
   c) Protecting the emperor penguin
   d) Developing an international framework for environmental monitoring in Antarctica

3. **Management Plans Adoption:** The Parties adopted 17 revised and new management plans for Antarctic Specially Protected Areas (ASPAs) and made several modifications and additions to the list of Historic and Monument sites.

4. **Renewable Energy and Biosecurity:** The ATCM encouraged efforts to increase the use of renewable energy and to ensure robust biosecurity measures to minimize the risks of Highly Pathogenic Avian Influenza.

5. **Awareness Initiatives**: A commemorative MyStamp featuring the ATCM-46 logo was released, and a mural titled 'Species-rich Antarctica' was unveiled to enhance awareness of Antarctica.

6. **Tourism Framework**: A significant outcome was the adoption of a decision to develop an ambitious, comprehensive, flexible, and dynamic framework for regulating tourism and non-governmental activities in Antarctica. The Parties also discussed consultative status requests from Canada and Belarus, but no consensus was reached.

About Committee for Environmental Protection (CEP):

1. **The CEP was established in 1991** under the Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol).

2. **Purpose:** The CEP advises the Antarctic Treaty Consultative Meeting (ATCM) on matters related to environmental protection and conservation in Antarctica.

3. **CEP-26 Agenda Focus:**
   a) Assessing the current state of the Antarctic environment.
   b) Evaluating the environmental impact of activities in the region.
   c) Managing and reporting on environmental protection efforts.
   d) Developing strategies to respond to climate change impacts in Antarctica.
   e) Creating and updating management plans for protected areas, including marine spatial protection.
   f) Implementing measures to conserve Antarctic biodiversity and protect native species.

Mains point: About the Committee for Environmental Protection (CEP).

2.   The world must take up China's proposal of a no-first-use treaty.

Context:

The article discusses China's proposal at the United Nations for a treaty on the no-first-use of nuclear weapons by nuclear-armed states. It examines the skepticism around China's intentions, given its past actions, and argues that a no-first-use policy could improve global nuclear security. The article also highlights the role India could play in this initiative. China's proposal for a treaty on the no-first-use of nuclear weapons

There skepticism about China's intentions:

- **Historical Context:** China has historically claimed to adhere to a no-first-use policy for nuclear weapons. However, its actions have often contradicted this stance.

- **Proxy Use:** China has been known to utilize proxies like Pakistan and North Korea, which threaten nuclear action against strategic rivals such as India and the USA, respectively. This technique allows China to extend its strategic influence without direct engagement.

- **Nuclear Expansion:** Despite its no-first-use claim, China is actively expanding its nuclear arsenal and enhancing its delivery mechanisms, actions that seem inconsistent with a commitment to limit the use of nuclear weapons.

A no-first-use policy considered important:

- **Reduces Risk of Nuclear War**: A no-first-use policy can decrease the likelihood of nuclear escalation among nuclear-armed states by establishing a clear norm against the initial use of nuclear weapons.

- **Environmental Impact:** Even a limited nuclear exchange could have severe environmental consequences. A study by Mark Z. Jacobson from Stanford estimated that a small nuclear exchange could release over 690 million tonnes of CO_2, which is more than the UK's annual emissions.

- **Global Stability:** Implementing a no-first-use policy contributes to global stability by preventing the catastrophic humanitarian and environmental effects of nuclear warfare.

The global response shaping up:

1.   **United States:** The Biden administration appears open to discussing China's no-first-use proposal. However, significant action is unlikely before the presidential election on November 5, indicating a cautious approach.

2.   **United Kingdom:** Likely to align with the U.S. position, showing a tendency to follow the lead of its close ally rather than initiating independent policy movements.

3.   **Russia:** Appears supportive of China's proposal, reflecting strengthened ties between Moscow and Beijing, which could influence other discussions on global security.

The role could India play:

- **Crucial Participant**: India's involvement is deemed necessary for the success of a global no-first-use treaty, as their participation could lend significant weight to the initiative.

- **Potential to Influence China: If** China invites India to partake in no-first-use discussions, it would signal a genuine commitment from Beijing and potentially enhance the proposal's credibility.

- **Counteracting Regional Tensions: I**ndia's support for the treaty could help stabilize regional nuclear dynamics,

particularly with neighboring countries like Pakistan.

Mains point:There is skepticism about China's intentions regarding its proposal for a no-first-use treaty on nuclear weapons at the United Nations.

3. Australia's New Military Recruitment Policy .

Context:

    Recently, the Australian government announced a new policy allowing non-citizens to join its armed forces. Australia is facing challenges in meeting its military recruitment targets due to its relatively small population and extensive coastline.

About Australia's New Military Recruitment Policy:

1. **Permanent residents** who have lived in Australia for at least 12 months would be eligible to join the armed forces.

2. **The policy particularly favors ci**tizens from Britain, Canada, New Zealand, and the United States.

3. **Operational Challenges:** Despite these acquisitions, Australia has found it difficult to recruit enough pilots, mariners, and troops to effectively operate and maintain this equipment.

4. **Current Military Capability:**

   i) **Defence Personnel Count:** According to the Australian Strategic Policy Institute, the Australian Defence Forces currently have about 90,000 personnel, including reservists.

   ii) **Expert Warnings:** Military experts have expressed concerns that the number of Australians willing to serve is insufficient to meet both current and future military needs.

Main Point:About Australia's New Military Recruitment Policy.

4. Aukus focus: The strategic pivot to France.

Context:

    The article discusses the Aukus alliance between the US, UK, and Australia, which aims to enhance military capabilities against China, particularly by sharing nuclear submarine technology and other advanced technologies. It also mentions India's exclusion from this technology sharing and suggests that France could be an alternative partner for India in developing submarine technology.

The Aukus alliance:

- The Aukus alliance, formed in September 2021, is a partnership between Australia, the United Kingdom, and the United States. It focuses on military cooperation, especially in the Indo-Pacific region, to counter China's growing influence.

    The alliance plans to provide Australia with nuclear-powered submarines that are conventionally armed.

The technologies are shared under Aukus:

- **Nuclear Submarine Propulsion:** Aukus facilitates the unprecedented transfer of nuclear submarine propulsion technology to Australia. This is significant as it's the first time the U.S. has shared such technology outside the UK.

- **Advanced Technologies:** The partnership extends into eight high-tech military domains: Artificial intelligence (AI), Quantum technologies, Cyber warfare, Undersea warfare, Hypersonic and counter-hypersonic technologies, Electronic warfare, Innovation and information sharing.

- For example, the first tangible Aukus technology to be utilized is a trilateral algorithm that enhances the sharing of sonobuoy data from P-8 Poseidon aircraft, used for submarine tracking.

Aukus impact other allies:

- **India's Position:** Although India operates 12 P-8 Poseidon aircraft, similar to those used by Aukus nations for submarine tracking, it was not offered participation in the nuclear technology sharing aspect of Aukus. The US has traditionally never shared nuclear submarine technology with India, reserving this for closer allies.

- **Japan's Considerations:** Japan, with significant technological expertise, especially in areas covered by Aukus's Pillar 2, debates whether its participation would result in giving or receiving more benefits. Japan evaluates its involvement based on its own capabilities and strategic needs in the region, especially concerning potential confrontations with China.

An alternative for India:

- Given the limitations with the US, the article suggests that France could be a strategic partner for India, especially in developing nuclear submarine technology.

- France's nuclear technology uses low-enriched uranium, which aligns with non-proliferation standards, making it a suitable option for India.

- The strategic relationship between France and India, spanning defense, space, and culture, could support this partnership.

Mains point:The implications of India's exclusion from the nuclear technology sharing aspect of the Aukus alliance and the potential for France to serve as an alternative strategic partner for India in developing submarine technology.

5. **India's neighbours at swearing-in: Shared stakes in stable ties .**

Context:

    The article highlights the significance of the presence of South Asian and Indian Ocean leaders at Narendra Modi's swearing-in ceremony for his third term as Prime Minister.

The geopolitical significance of the event:

- First India is facing increasing hostility in its neighbourhood. Similarly, India has seen many ups and downs in the relations with its smaller neighbours. Therefore, the presence of leaders of these countries underlines the significance of interdependence on each other.

- Second, it is the testament of India's neighbourhood first policy.

- Third, Intensifying conflicts among major powers and the restructuring of the global economic order are posing major challenges around the world. India will need all the goodwill and support it can gather.

- Fourth, In the recent years, western countries have raised their concerns about so-called democratic backsliding in India. But, the recent resurgence of opposition has tackled this issue.

Mains point:the significance of the presence of South Asian and Indian Ocean leaders at Narendra Modi's swearing-in ceremony for his third term as Prime Minister.

6. **Significance of diplomatic resolution of India US trade dispute**

Context:

    Recently, a decade old trade dispute between India and the U.S. was resolved at the World Trade Organization (WTO). This dispute originated in 2012 when the U.S. challenged India's import restrictions on poultry products, imposed due to concerns over avian influenza.

The issue:

- In this dispute, US alleged that India deviated from internationally recognized standards, by not providing scientific justification for restrictions.

- Both the WTO panel and the Appellate Body ruled in favor of the U.S., stating that India's measures were inconsistent with WTO rules.

- It required India to modify its measures. However, compliance issues prolonged the dispute until a recent diplomatic breakthrough led to its resolution.

- The dispute was resolved diplomatically, leading to withdrawal of claims by both countries, from WTO.

- As part of the settlement, India agreed to reduce tariffs on certain U.S. products like cranberries, blueberries, frozen turkey, and premium frozen duck meat.

The significance of this diplomatic resolution between India and US:

- It showcases the effectiveness of bilateral negotiations in resolving trade disputes. The resolution of this dispute represents a major diplomatic achievement, particularly given its long duration and complexity.

- WTO rules encourage countries to resolve disputes amicably, with litigation only to be pursued as a last resort.

- The significance of diplomatic solutions increases, especially in the absence of a functional WTO Appellate Body.

- By this agreement, India is able to avoid a $450 million annual claim from the U.S., awarded by WTO to it.

- It showcases the ability of major trading partners to navigate complex domestic compulsions and find common ground, even on the most sensitive trade matters.

- This milestone reinforces the growing significance of the India-U.S. partnership, particularly in the context of the recently launched Indo-Pacific Economic Framework.

Mains point:The significance of this diplomatic resolution between India and US

7.   Significance of upcoming G7 summit .

Context::

After the beginning of his 3rd term, Prime Minister Narendra Modi's first international trip will be to attend the G7 summit in Fasano, Italy. This visit is crucial for revitalizing India's relations with Western nations, particularly the US and Europe.

- The G7 summit, celebrating its 50th anniversary, occurs amidst growing global tensions, particularly between the Western countries and the Sino-Russian alliance. Following the G7, Modi will also attend the Shanghai Cooperation Organization (SCO) summit in Kazakhstan to engage with Chinese and Russian leaders. Significance of upcoming G7 summit

The significance of upcoming global events like G7 for India:

- **Strengthening ties with west:** In the recent years, India has strengthened India's relationships with Western nations. The G7 summit provides an opportunity to further these ties amidst new global challenges.

- **Electoral Validation**: Present government's re-election, with a reduced mandate, holds importance for Western democracies, alleviating some concerns about India's democratic trajectory.

- **Enhanced Multilateral Engagement**: Active participation in forums like the G7 and SCO can help India address global issues such as climate change, trade, and security.

- **Food and energy Security:** India will also have much interest in the discussion on food and energy security, a major item on the G7 agenda in Italy. In

The challenges and Opportunities for Indian Diplomacy:

- **Navigating Global Tensions:** The G7 summit highlights the growing rift between Western countries and the Sino-Russian alliance, presenting diplomatic challenges for India. India must adeptly navigate these tensions to maintain its strategic interests.

- **Engagement with Adversaries**: PM Modi's participation in the SCO summit will involve direct engagement with Chinese and Russian leaders. Balancing these relationships while strengthening ties with the West is crucial.

3) **Strategic Autonomy:** India needs to pursue a policy of strategic autonomy, maintaining independent relations with countries like Russia and China.

Way forward:

- **Balancing Act:** India should strike a balance between relationships with competing global powers, avoiding over-reliance on any single bloc.

- **Domestic Reforms and Global Image:** Addressing domestic concerns regarding democracy and human rights can enhance India's global standing and credibility.

Prelims point:The G7 summit

8.　Issue with Meloni's Privatization Plan.

Context:

The article discusses Italy's hosting of the G7 summit, Prime Minister Giorgia Meloni's Africa-centered development plan, and the contradiction in her government's privatization strategy. It criticizes the short-term approach, lack of innovation, and failure to honour Mattei's legacy.

The Mattei Plan:

- **The Mattei Plan** is an ambitious development initiative unveiled by Italian Prime Minister Giorgia Meloni,

focusing on partnerships with African nations.

- **Named after Enrico Mattei,** the founder of Italian oil giant Eni, the plan draws inspiration from Mattei's 1950s policies, which disrupted the oil industry by offering more equitable profit-sharing agreements to developing countries.

- **Key Objectives:** The plan targets international development with a focus on energy, growth, and immigration.

- **Historical Context:** In the past, Mattei enabled developing economies to retain 75% of oil profits, contrasting with the less favorable terms from other oil companies.

- **Recent Unveiling:** This initiative was introduced at the Italy-Africa Summit earlier this year, reflecting a continuation of Italy's engagement with Africa.

The Issue with Meloni's Privatization Plan:

- **Focus on Short-Term Debt Reduction:** Giorgia Meloni's privatization plan aims to reduce Italy's public debt by selling shares of state-owned enterprises, like Eni, valued at €20 billion ($21 billion). This strategy emphasizes immediate debt relief over sustainable economic growth.

- **Reduction in Research and Development:** Historical data shows that privatization leads to decreased investment in innovation. For example, after privatizing, Telecom Italia reduced its R&D spending from 2% of its revenues to just 0.4%.

- **Economic Short-Termism:** The plan reflects a broader trend of prioritizing short-term financial outcomes at the expense of long-term industrial strategy and economic health.

The Broader Implications of these Policies:

- **Impact on Industrial Strategy:** The lack of a coherent, mission-oriented industrial strategy hinders the

development of sustainable industries and technological capabilities, as seen in the decline of strategic sectors post-privatization in the 1990s.

- **Global Trend of Austerity:** The adherence to outdated fiscal rules that prioritize asset sales over industrial innovation aligns with a broader global trend criticized by the IMF for not effectively reducing debt-to-GDP ratios and stifling economic growth.

- **Undermining Private Capital Influx:** The criticism of Meloni's plan suggests it misses the opportunity to use public investment as a tool to attract private capital, a mechanism known to stimulate economic growth when public investments are increased.

Mains point: Giorgia Meloni's privatization plan in Italy contrasts with the goals and principles of the Mattei Plan for African development and its historical context.

ECONOMY

1.   We missed Industrial Revolution

Context:

Impact of industrial revolution on India's economy

The article discusses how the invention of the spinning jenny in Britain started the Industrial Revolution, which significantly impacted India's economy and independence movement. It compares this historical event with modern challenges in India, such as the focus on IT services over product innovation, and the education system's issues, including the trend of students studying abroad.

Industrial Revolution triggered by

- Invention of the Spinning Jenny:
  - James Hargreaves created the spinning jenny in 1764, allowing one person to spin multiple threads simultaneously. This innovation drastically improved the efficiency of cotton production.
- Impact on Further Inventions:
  - The spinning jenny inspired further technological advancements, such as Samuel Crompton's spinning mule and Charles Babbage's weaving machine, accelerating the pace of industrial development.
- Catalyst for the Industrial Revolution:
  - These innovations collectively triggered the Industrial Revolution, transforming industries by enhancing production capabilities and reducing the need for manual labor, marking a significant turn in manufacturing history.

    The Spinning Jenny wasn't invented in India

- Economic Conditions:
  - Economic historian Robert Allen notes that high wages relative to capital costs in Britain made inventions like the spinning jenny profitable there but not in India.
- Lack of Financial Incentive:
  - In India, lower labor costs compared to Britain meant there was less economic incentive to invest in labor-saving technologies, which deterred innovation in mechanized cotton production.

Current educational and economic challenges in India

Educational System Challenges:

The emphasis on coaching for entrance exams, like those for the IITs, detracts from genuine learning and innovation. Only about 10,000 out of 200,000 applicants are admitted annually, highlighting intense competition and high rejection rates.

Study abroad:

Annually, approximately 450,000 Indian students choose to study abroad, driven by limitations in domestic educational opportunities, with families spending significant amounts on overseas education.

Shift in Tech Industry Focus:

Initially, protective policies enabled local hardware development. However, with lobbying by NASSCOM in 1991, tax exemptions were introduced for software exports, and import duties were significantly reduced. This led to a dependency on service-based revenue over innovation in product development.

Shift to AI impact India's tech industry

- Potential Missed Opportunities:
    o As the global tech industry pivots towards artificial intelligence (AI), India is likely to continue its role primarily as a supplier of IT workforce rather than leading in AI product innovation. This could limit India's position in the global tech hierarchy.

- Economic Impact:
    o India's tech industry currently generates substantial revenue by providing IT services, earning about $250 billion and employing over 5 million people. This success in service provision, however, might be overshadowed if AI reduces the need for a large tech workforce

Mains Point: **Impact of industrial revolution on India's economy**

2.   Does inequality lead to growth?

Context:

Inequality and Its Impact

The leaders of major political parties have sparked discussions on inequality. Researchers from the Paris School of Economics have highlighted that inequality in modern India exceeds that of colonial times.

Multi-dimensional impact of inequality

1) Political Impact–

Inequality hurts democracy. However, some people think a bit of inequality motivates entrepreneurship, leading to more jobs and better welfare.

2) Economic Effects of Inequality –

    A) It concentrates resources and power among a small group of people. This concentration of monopoly power within capital compared to labor can harm consumption, welfare, and growth

    B) Billionaires get their wealth from monopolies, so they can set prices higher than production costs, reducing real wages and buying power.

    C) Monopolies contribute to phenomena like "greedflation" and high inflation rates, as seen in developed economies.

    D) In monopolies, less output is produced to maximize profit compared to competitive markets, which results in lower welfare, output, and investment.

Impact of inequality on economic growth

Investment has a weaker effect on growth under inequalities due to reduced consumption power and the multiplier effect. In an unequal economy, a smaller proportion of income is in the hands of those with a greater propensity to consume, leading to weaker economic expansion.

Role of redistribution in addressing inequality and stimulating growth

1) Some argue that redistribution through high taxes can deter entrepreneurs from amassing wealth, resulting in a scale-back of investment and jobs. However, taxes on wealth wouldn't actually impact investment because they don't change expectations of future profits.

2) Redistribution, through measures such as taxing billionaire wealth and providing basic income, can spur growth by strengthening the multiplier effect. It can also help in the creation of a new class of entrepreneurs that are freed from the necessity of working for wages.

Policies aimed at curtailing inequality, such as wealth taxes, redistribution, and curbing monopolies, can have positive effects on consumption, welfare, and growth. However, these policies need to be carefully implemented and balanced, as excessive

taxation can become a net drain on the economy.

Mains Point: **Inequality and Its Impact**

3.   Using GST as consumption proxy

Context:

GST Data and Private Consumption

The article highlights the strong performance of Goods and Services Tax (GST) collections in India, with net collections outpacing nominal GDP growth in the previous financial year (FY24). The highest-ever monthly GST collection of ₹ 2.1 trillion in April 2024 shows how GST data can provide insight about private consumption trends.

Significance of GST data in providing insights into private consumption trends

1)   GST is a consumption-based tax, accruing to the state where goods are consumed, rather than where they are produced. Thus, state-level GST data can indicate sub-national private consumption trends, which is beneficial because high-frequency data on private consumption is lacking in India.

2)   Analyzing GST data from different states reveals consumption nuances and economic trends. This provides valuable information for both policymakers and businesses.

3)   GST data can become a more real-time measure of consumption expenditure and provide data-led insights into the economy at both national and state levels.

4)   GST data can yield valuable insights into consumption patterns, import contributions, and consumption of climate-sensitive items across states. This will help in enhancing understanding about the economy.

5)   GST compensation cess data that is imposed on luxury and harmful goods can help in understanding the

consumption trends associated with these products. For ex- Kerala had the smallest amount of compensation cess collected per person, while Chhattisgarh had the largest, mainly because of the state's significant use of tobacco and coal.

Correlation between GST data and private consumption

1)   There is a strong positive correlation between per capita GST collections and per capita incomes across states, indicating that richer states have a higher propensity to consume.

2)   There is a positive relationship between the share of urban population and per capita GST collections, implying that urbanization propels private consumption

Mains Point: **GST Data and Private Consumption**

4.   As the election results come in, an agenda for the next government

Context:

Strategies for India's new government to boost economic growth

The article discusses various strategies for India's new government to boost economic growth. It also suggests keeping in mind the rapidly changing global backdrop while taking these steps.

Current status of the global economy

● Shift in Economic Policies:

    o   Moving from globalization to protectionism.

● Economic Stimuli:

    o   Reduced fiscal stimulation and persistently high interest rates.

● Environmental and Technological Impacts:

    o   Adverse effects on businesses due to stricter environmental

considerations and technological disruptions.

Steps should be taken by the new government to boost economic growth

- Address Disguised Employment in Agriculture:
  - o Shift workforce to industries or services to reduce underemployment in agriculture.
- Reduce Manufacturing Costs:
  - o Use increased PSU market cap for strategic divestments to absorb subsidies in power and logistics, enhancing manufacturing competitiveness.
- Boost Consumption:
  - o Implement a gold monetization scheme to bring hidden gold into the mainstream economy, thus boosting liquidity and consumer spending.
- Develop Agriculture:
  - o Expand successful cooperative models like Amul to other commodities and increase exports, as seen with the Netherlands' success in agri-products.
- Promote Free Labor Movement:
  - o Include labor movement clauses in Free Trade Agreements to enhance remittances and support Indian workers abroad.
- Enhance Skills:
  - o Establish institutions like the plumbing institute in Odisha to supply skilled labor both domestically and internationally.
- Expand Manufacturing through PLI Schemes:
  - o Focus on sectors like garments, automobiles, and jewelry to create jobs and increase exports.

- Support Services Sectors:
  - o Develop tourism, education, and healthcare through integrated approaches and engage the diaspora as brand ambassadors.
- Unlock Investment in Infrastructure:
  - o Improve judicial infrastructure and streamline land acquisition and labor laws to attract more investment.
- Enhance Judicial Infrastructure:
  - o Reduce case backlogs and improve the rule of law to attract more investment.
- Simplify Doing Business:
  - o Implement reforms in land acquisition and labor laws and create special economic zones.
- Foster Technology Investment:
  - o Quickly operationalize funds for future technologies like artificial intelligence and pharmaceutical research.
- Advocate for Environmental Compensation:
  - o Pursue international compensation for India's low per capita carbon emissions compared to historical contributions.
- Implement Responsible Mining Policies:
  - o Balance local interests and industrial needs, especially in states like Odisha.
- Improve Education and Healthcare:
  - o Utilize technology and public-private partnerships to enhance service quality and accessibility.
- Educate Investors:
  - o Increase financial literacy to prevent poor investment choices like cryptos and Ponzi schemes.

- Promote Sustainable Practices:
  - o   Leverage green energy and push for global cooperation on environmental issues.

Mains Point: **Strategies for India's new government to boost economic growth**

5.   What does the Preston curve postulate?
Context:

Preston Curve

It has been observed that with the increasing per capita income in India, there has been a shift in attention towards Preston curve which was first proposed by "Samuel H. Preston" in the year "1975".

About the Preston Curve

The Preston Curve is a graph that shows the relationship between the average income per person in a country (usually measured as GDP per capita) and the average life expectancy of its people.

Origin:

The concept was introduced by American sociologist Samuel H. Preston in his 1975 paper titled "The changing relation between mortality and level of economic development".

Key Observations of the Preston Curve:

i)   Generally, people in wealthier countries live longer compared to those in poorer countries.

ii) This trend is likely because individuals in richer nations typically have better access to healthcare, education, clean environments, and nutritious food.

iii) Economic Growth and Life Expectancy: When a country's economy grows and incomes rise, life expectancy also tends to increase significantly. This improvement is initially due to better access to basic necessities like food and healthcare.

Example: In India, the average income rose from approximately ₹ 9,000 per year in 1947 to about ₹ 55,000 in 2011.

Correspondingly, the average life expectancy increased from 32 years to over 66 years during the same period.

Limitations of Income Growth on Life Expectancy:

The relationship between per capita income and life expectancy starts to plateau beyond a certain point. Further increases in income do not lead to significant gains in life expectancy, possibly because there is a natural limit to human lifespan.

Prelims Point: **Preston Curve**

6.   WILL INDIA IMPORT WHEAT?
Context:

Issue of Wheat Import by India

India is considering reducing wheat import duties due to lower domestic supplies and high market prices. The government might need to import wheat to stabilize prices, despite having more wheat this year compared to last year. Improving wheat yields is suggested as a long-term solution.

Current situation in the Indian wheat market

India is facing high wheat prices in the market, which are much higher than the government's minimum support price. For instance, prices reached around ₹ 3,000 per quintal in some parts of Madhya Pradesh, while the official price is ₹ 2,275 per quintal. Due to this increase, there is a discussion about reducing the 44% import duty on wheat to allow imports and help stabilize prices.

India might consider importing wheat

The consideration for importing wheat, potentially 2 to 4 million tonnes, comes as domestic procurement has not met the target of 30 to 32 million tonnes for three years.

This shortage in state procurement and the high market prices have led to

discussions on easing import norms to bring down prices and discourage hoarding.

Government's strategy

- The government might have nearly 8.5 million tonnes of wheat to manage market prices this year, compared to 10 million tonnes last year.

- This wheat will be used in open market operations and possibly through schemes like the Open Market Sale Scheme to control prices.

- The overall production is also reported to be better than last year, with an estimate showing an increase of 2.4 million tonnes.

Long-term solutions

- Increase Wheat Yields:
  - Boost the average yield from the current 3.7-3.8 tonnes per hectare to at least 5 tonnes per hectare. Competing countries like Mexico and China have yields close to 6 tonnes per hectare.

- Address Agricultural Challenges:
  - Implement measures to combat losses due to weeds and pests, which can reduce potential yield by 20 to 30 percent, and correct nutritional imbalances.

- Enhance Wheat Varieties:
  - Develop and distribute varieties that can resist terminal heat and other climatic challenges.

Mains Point: **Issue of wheat import by India**

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7. Filling public employment vacancies & regularising all workers, especially women, should be new government's priority

Context:

The employment crisis in India

The article highlights the issue of unemployment in India. As per Periodic Labour Force Surveys, India has one of the lowest employment rates globally, with only 30.5% of people above the age of 15 years receiving remuneration for their work in 2022-23. Among men, the ratio was 48.1%, while shockingly, it was only 13% for women, one of the lowest employment rates for women worldwide.

Impact of this rising unemployment

1) In a rapidly expanding economy with growing inequality, this situation is a crisis. It's a significant issue in a nation where many people still lack adequate living conditions, and the development efforts are incomplete.

2) It is also becoming a socio-political problem due to an aspirational younger generation being denied opportunities to live up to its potential.

Government's approach to deal with the issue of unemployment

The government's approach was to incentivize big business in the hope that it would result in more private investment, boosting the real economy and creating employment through a "trickle-down" effect.

Impact of this approach

1) Employment hasn't grown, and real wages haven't gone up in the past decade.

2) According to the 2024 India Employment Report by the ILO, certain workers, such as those in construction and regular employment, have experienced declines in their wages.

3) The majority of employment positions are informal, with more than 90% of workers not receiving the advantages of formal legal and social safeguards. Additionally, over half of the workforce are self-employed, earning modest incomes.

4) Women are particularly disadvantaged, whether they're paid or unpaid workers or self-employed.

Some immediate measures for employment generation

1) There are about 1 million job openings in the central government and likely many more in state governments combined. Filling these vacancies would not only increase employment but also enhance public services in areas like health, education, and sanitation, improving everyone's quality of life.

2) Regularizing millions of women working in essential public service delivery schemes would benefit them and provide a fillip to domestic demand.

3) Greater emphasis on public spending for care activities would have positive multiplier effects on demand and employment.

4) Reviving the rural employment scheme by clearing arrears, ensuring proper funding, and avoiding partisan approaches that have denied resources to states ruled by Opposition parties.

5) Implementing an urban employment guarantee scheme with components for urban rejuvenation, skill training, and apprenticeships.

Medium-term measures

1) There is a need to develop a package to revive and strengthen micro, small, and medium enterprises (MSMEs), including access to credit, technology, inputs, and marketing, and providing incentives like those for large firms.

2) There is a need to focus on agriculture by ensuring viable cultivation through policies like legal MSP, public investment in relevant technologies, access to water and inputs, pos-harvest storage and processing etc.

3) The government should consider the influence of increasing temperatures and climate change in all policy decisions.

These employment generation measures are likely to have a positive impact on output and lead to a more sustainable, equitable, and just economic growth trajectory.

Mains Point: **The employment crisis in India**

8. Don't fear the critic: How proxy advisors improve shareholder decisions in India

Context:

Role and Influence of Proxy Advisory Firms in India

The article highlights the issues associated with proxy advisors. Recently, Proxy advisors have drawn attention to their recommendations that led to the rejection of resolutions, like Nestle's royalty payout or the demerger of ITC Hotels.

CEO of JP Morgan Chase has recently flagged concerns about the undue influence of proxy advisors. However, this is not true in case of India. Institutional investors in India tend to conduct their own analysis, with PAs serving as a support system rather than exercising too much power.

Role of proxy advisors

1) They serve as a support system for investors to make informed decisions.

2) They offer criticism and point out flaws, much like doctors diagnosing illnesses, which encourages corrective measures for good governance.

3) They support management's decisions/actions if they are fair and adhere to governance parameters.

Some limitations to proxy advisors

1) They have neither the expertise, vision, nor the information that the board has to determine what's best for the company.

2) They are not required to have the abilities to outsmart the boards of the numerous companies they track.

3) It's crucial to draft meeting notices properly, including detailed explanations and disclosures, to prevent PAs from making negative recommendations.

4) They sometimes differ in their interpretation of laws from companies, creating a conflict between regulatory compliance and governance.

5) Proxy advisors sometimes don't only trust valuer reports; they also do their own valuations. But problems occur when companies disagree with their assessments, especially in cases like Tata Motors and ICICI Securities, where some minority investors object to proposals because of their expectations by not providing solid arguments.

Way forward

The proxy advisor industry has indeed matured over its decade-long existence. However, there is a need to maintain independence, free it from conflicts of interest, and focus on its role in supporting informed decision-making without being concerned about the outcomes.

Prelims Point: **proxy advisor**

9. The ageism debate: India will gain from raising the retirement age

Context:

India faces age-related discrimination at work

The article discusses how both young and older workers in India face age-related discrimination at work. It highlights how such issues might grow as India's population ages. It suggests considering raising the retirement age to utilize the experience of older workers more effectively.

Demographic Projection for India

The UN Population Fund projects a sharp rise in the elderly population's growth rate, from 35.5% (2011-21) to 41% (2021-31). By 2046, the elderly population will surpass children under 15 years.

Age-Related Discrimination in Indian Workplaces

- Prevalence:
  o 40% of employees experienced or witnessed age-related discrimination.
- Younger vs. Older Workers:
  o 42% of employees below 55 faced discrimination, compared to 29% of those over 55.
- Compensation Issues:
  o 32% of employees under 35 feels inadequately compensated.
- Job Advertisements:
  o 61% report age or experience criteria in job ads, with multinationals leading this trend.
- Gender Disparity:
  o 42% of women report discrimination, compared to 37% of men.

India's retirement age compared globally

- India's retirement age is 58-60 for most workers, with 70 for whole-time directors and 75 for non-executive directors.
- Advanced countries like Iceland, Australia, Spain, and Italy set retirement ages at 66-67.
- France faced protests over proposals to raise the pension age from 62 to 64.
- Singapore recently raised the retirement age from 63 to 64 and the re-employment age from 68 to 69.

Should be done

- Raise Retirement Age:
  o Increase the retirement age to benefit from older workers' experience. India's current retirement age is 58-60 years, while countries like Iceland and Australia set it at 66-67 years.

- Prepare for Demographic Changes:
  - o Plan for an ageing population. The UNPF projects the elderly population will surpass children by 2046, necessitating policy adjustments.

Prelims Point: **India faces age-related discrimination at work**

Mains Point: **India faces age-related discrimination at work**

10. Sticky inflation: Why is RBI refusing to cut interest rates?

Context:

Repo Rate Kept Unchanged

The article discusses reasons behind the Reserve Bank of India's (RBI) decision to keep the benchmark repo rate unchanged for the eighth consecutive time during its latest bi-monthly monetary policy review.

About Repo Rate

Definition-

The repo rate is the interest rate at which the RBI lends money to commercial banks.

Impact-

A) A lower repo rate incentivizes economic activity by making it cheaper for banks to borrow from the RBI and lend to customers.

B) A higher repo rate disincentivizes economic activity by making it costlier for everyone in the economy to borrow money. Movements in the repo rate have a significant impact on the EMIs (Equated Monthly Installments) paid for car, home, or business loans.

Goal of RBI's monetary policy

1) Price Stability

The primary goal of RBI's monetary policy is to maintain price stability in the economy by targeting an inflation rate of 4%. This goal is mandated by the law.

2) Promote Economic Growth

When the economy needs a lift, such as after the COVID pandemic, the RBI lowers the repo rate. This makes borrowing money easier for both consumers and producers, encouraging spending.

Conversely, when inflation rises significantly above 4%, like during the Russia-Ukraine conflict, the RBI raises the repo rate to lessen the demand for borrowing money, thus reducing excessive spending fueled by credit.

Reasons for not cutting interest rates

Despite the retail inflation rate coming closer to the 4% target and staying within the RBI's comfort zone of 2-6% since September 2023, the RBI has not changed the repo rate since February 2023.

The reasons for this are:

1) Sticky Inflation-

While the inflation rate has dropped, it hasn't reached 4% since January 2021, and the decline has been slow. The RBI is concerned about this persistent inflation, which stayed around 5% in the first four months of 2024.

2) Commitment to Durable Inflation Targeting–

The RBI wants to keep inflation around 4% consistently and doesn't reduce rates immediately when inflation falls below this target for just one month. The RBI believes that any future drop in inflation below 4% will only be temporary.

3) Strong Economic Growth–

India's GDP growth rate has been unexpectedly strong recently, leading the RBI to raise its forecast for the current financial year from 7% to 7.2%. With this strong economic growth, it's unlikely that the repo rate is hindering India's economic activity.

4) Fiscal Deficit Concerns-

The RBI's choice might be affected by the upcoming Union Budget and how much the government plans to borrow from the market. This borrowing could impact inflation or interest rates.

Prelims Point: **Repo rate, RBI monetary policy**

11. Digital payments intelligence platform soon to curb fraud

Context:

Digital Payments Intelligence Platform

With the rise in digital payment scams, there is a growing need for a collective approach to prevent and manage these issues. Considering the rise in digital payments, the Reserve Bank of India (RBI) plans to create a Digital Payments Intelligence Platform.

About Digital Payments Intelligence Platform

Aim:

It aims to gather intelligence across the digital payments network and enable real-time data sharing.

Objective:

● RBI wants to expand the existing e-mandate system as more people are using automated recurring payment.

● This system will now include payments that happen regularly but not at a fixed time, such as topping up Fastag balances for tolls or the National Common Mobility Card (NCMC) used in public transport.

● This change would allow customers to set their Fastag and NCMC to automatically refill whenever the balance drops below a certain level they choose. This will make it easier and quicker to pay for travel and transportation.

● The RBI aims to boost the use of UPI Lite, a service for fast, small payments directly from a device.

● They plan to integrate UPI Lite into the e-mandate system to encourage more people to use this convenient payment method.

Prelims Point: **Digital Payments Intelligence Platform**

12. Wealth of HNWIs reached unprecedented levels in 2023: Capgemini study

Context:

World Wealth Report 2024

The Capgemini Research Institute's recently published World Wealth Report 2024.

About World Wealth Report 2024

Released By:

Capgemini Research Institute.

Coverage:

The report covers 71 countries, representing more than 98% of global gross national income and 99% of the world's stock market capitalization.

Findings of the report

HNWIs Definition

Individuals with investable assets of $1 million or more, excluding their primary residence, collectibles, consumables, and consumer durables.

Global HNWI Wealth and Population

i) Wealth Expansion: In 2023, global high-net-worth individuals (HNWI) wealth grew by 4.7%, reaching $86.8 trillion.

ii) Population Growth: The HNWI population increased by 5.1% to 22.8 million globally.

Wealth Bands

i) Ultra-HNWIs: $30 million or more.

ii) Mid-Tier Millionaires: $5-30 million.

iii) Millionaires Next Door: $1-5 million.

Performance in the APAC Region

i) Top Performers: India and Australia were among the best performers.

ii) Factors: A resilient economy and strong equity market performance drove the wealth growth in these countries.

HNWIs in India

i) Population Increase: The number of HNWIs in India grew by 12.2% in 2023 compared to 2022, reaching 3.589 million.

ii) 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.

Economic Indicators in India

i) Unemployment Rate: It decreased to 3.1% in 2023, down from 7% in 2022.

ii) Market Capitalization: It increased by 29.0% in 2023, following a 6% increase in 2022.

iii) National Savings: As a percentage of GDP, national savings rose to 33.4% in 2023, compared to 29.9% in 2022.

Prelims Point: **World Wealth Report 2024**

13. Consumption inequality up in rural areas of 11 states in past decade: HCES

Context:

Household Consumption Expenditure Survey (HCES) Report

Recently, the Household Consumption Expenditure Survey (HCES), released its report. It showed that consumption inequality increased in rural areas of 11 states despite a national trend.

About Key Findings

i) The Gini coefficient increased in rural areas of 11 states between 2011-12 and 2022-23.

ii) States Affected: The states where the Gini coefficient rose include Bihar, Chhattisgarh, Jharkhand, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Himachal Pradesh, and Rajasthan.

iii) Nagaland, Jharkhand, Maharashtra, Rajasthan, Meghalaya, Chhattisgarh has witnessed increase in Gini coefficient.

iv) The Gini coefficient for consumption expenditure also rose in urban areas of three states which are Meghalaya, Himachal Pradesh, Manipur.

v) Nationally, the Gini coefficient for rural areas declined from 0.283 in 2011-12 to 0.266 in 2022-23. For urban areas, it decreased from 0.363 to 0.314 during the same period.

Note: A lower Gini coefficient indicates reduced spending inequality.

Current status of inequality in India

● Decline in Gini Coefficient:

o The Gini coefficient, measuring inequality, has decreased in both rural and urban areas. Rural areas saw a drop from 0.283 in 2011-12 to 0.266 in 2022-23, and urban areas from 0.363 to 0.314.

● Spatial Inequality:

o Significant consumption disparity exists between states and between rural and urban areas. For instance, Chhattisgarh shows an 82% difference in MPCE between rural and urban areas.

Real challenge with inequality in India

● The primary challenge with inequality in India is spatial disparity between regions and states.

● The gap in consumption between rural and urban areas is stark, with a nearly 71% difference in average monthly per capita consumption expenditure (MPCE) at the national level.

● Disparities between states are also significant. For example, rural Tamil Nadu's MPCE is nearly double that of Jharkhand, and urban Telangana's MPCE is over 70% higher than in Bihar.

Should be done

- To address spatial inequality, the central government should provide increased fiscal support to poorer states. These states often lack sufficient revenue for development and require resources allocated through mechanisms like the Finance Commission or direct federal support.

- There is a need for strategic policy interventions in lagging states to attract investments and improve development outcomes. Investing in sectors like low-skill manufacturing could help by creating incentives for businesses to relocate to areas with cheaper labor, potentially uplifting poorer regions.

- A balanced growth strategy is crucial, as developed states already have resources and advantages that allow them to attract more investments, further increasing regional disparities.

About Gini coefficient

i) Gini coefficient is an indicator of income or wealth inequality and is derived from the Lorenz curve.

ii) It is measured by dividing area between perfect equality curve and actual income distribution curve by area under perfect equality curve.

iii) The coefficient ranges from 0 (0%) to 1 (100%), with 0 representing perfect equality (where every resident in a country has the same income) and 1 representing perfect inequality (one resident earned all income and the rest earned nothing).

Prelims Point: **Gini coefficient, Household Consumption Expenditure Survey**

14. The India Opportunity Showcased at the IPEF Clean Economy Investor Forum

Context:

India Opportunity at IPEF Clean Economy Investor Forum

Recently, an event was organised by Department of Commerce and Invest India to showcase various investment opportunities in India

About India Opportunity at IPEF Clean Economy Investor Forum

Organised by:

The Department of Commerce and Invest India organised a meeting to showcase various investment opportunities in India. It was held at Marina Bay Sands, Singapore on June 7, 2024.

Participants:

Over 60 global investors and financial institutions, and more than 15 Indian firms.

Highlights of the event:

At the event, it has been highlighted that:

i) India's growth rate is nearly double that of other emerging market economies.

ii) Indian startups are returning home for capital access and tax benefits.

iii) AI and data centers are key to future growth.

iv) reforms aimed at streamlining regulations, enhancing transparency, and improving Ease of Doing Business.

v) focus of government on sustainable infrastructure, climate technology, and renewable energy projects to meet Net Zero targets.

About Indo-Pacific Economic Framework for Prosperity (IPEF)

About:

The Indo-Pacific Economic Framework for Prosperity (IPEF) is an economic initiative launched by U.S.A President Joe Biden in 2022.

Objective:

It provides a platform for countries in the region to collaborate on advancing resilient, sustainable, and inclusive economic growth, and aims to contribute to cooperation, stability and prosperity in the region.

Members:

It has 14 partners – Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, the Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, USA and Vietnam.

Nodal agency:

Department of Commerce for the IPEF engagements

Pillars of cooperation:

The IPEF comprises four pillars of cooperation namely: Trade, Supply Chain, Clean Economy and Fair Economy.

Prelims Point: **IPEF Clean Economy Investor Forum**

15.   India's looming financial crisis

Context:

The risks associated with this rapid credit expansion

The article discusses how rapid growth in lending in India is leading to financial instability. It warns that excessive borrowing, particularly by households, is creating a risky economic situation that could lead to a financial crisis similar to those experienced in other countries.

Current state of credit growth in India

● India is experiencing rapid credit growth, particularly in the household sector, which is rising at an annual rate of 25% to 30%.

● In 2023, the International Monetary Fund (IMF) praised India's financial sector for robust bank lending and low non-performing assets.

● A review by the National Council of Applied Economic Research in March 2024 noted a 20% increase in bank lending from the previous year, with a significant rise in personal loans.

● The surge in lending is primarily directed towards consumer spending rather than productive investments, contributing to economic vulnerabilities.

Risks associated with this rapid credit expansion

● Financial Instability:

o Rapid credit growth historically leads to financial crises. Previous booms ended when new loans couldn't cover old debts.

● Unsecured Borrowing:

o Almost a quarter of household loans are unsecured, increasing financial system stress. Credit card debt surged from 20 million cards in 2011 to 100 million in 2024.

● Economic Contraction:

o High debt burdens reduce household spending, leading to economic slowdown. Indian households' debt-service-to-income ratio is 12%, one of the highest globally.

● Inefficient Lending:

o Financial institutions focus on consumer loans instead of productive investments. This can lead to economic downturns when consumer spending slows.

● Job Shortage:

o The ongoing job crisis will worsen, pushing more people back to agriculture, reflecting deeper economic regression and increasing inequality.

Should be done

● Improve financial regulation:

o   Strengthening oversight is necessary to prevent rogue behavior among financial institutions. The rise in unsecured loans, approaching a quarter of household loans, indicates a poorly regulated financial sector. Fintech companies have led the charge in offering high-interest loans to households, contributing to financial stress.

- Weaken the rupee:
    o   A weaker exchange rate can boost exports, helping to cushion the economic downturn. Historical data shows that rapid credit growth and an overvalued exchange rate are a lethal combination.

- Focus on job creation:
    o   Address the deep-rooted jobs deficit to ensure sustainable economic growth. Current policies have led to more workers returning to agriculture, highlighting the urgent need for job-rich growth.

Mains Point: **risks associated with this rapid credit expansion**

16.   Digital Competition Bill: Its core needs strengthening

Context:

Potential focus areas in the upcoming union budget

With Nirmala Sitharaman returning to the finance ministry, the primary focus will shift on preparing the Union Budget for 2024-25 and presenting it.

Present status of the economy

- Retail inflation is controlled but remains slightly above the government target of 4%.

- GDP grew by 8.2% in 2023-24 and is expected to grow by 7.2% in the current year.

- Foreign exchange reserves stand comfortably over $640 billion.

- The current account deficit was well-controlled at 1.2% of GDP in the first three quarters of 2023-24 and might be even lower for the full year.

Areas can be focused on, in the upcoming Union Budget

- Merchandise exports:
    o   Merchandise exports saw a slight decline last year, and service exports lost momentum. Ongoing geopolitical tensions may affect international commodity prices, especially crude oil.

- RBI Surplus Transfer:
    o   The Reserve Bank of India's surplus transfer this year is 133% more than expected, adding fiscal headroom of 0.37% of GDP. This additional receipt can be used to reduce the fiscal deficit, increase infrastructure investment, provide tax incentives, or create jobs.

- Fiscal Deficit Management:
    o   Efficient resource management reduced the fiscal deficit to 5.6% of GDP in 2023-24, against the budget estimate of 5.9%. The finance ministry aims to reduce the deficit to 5.1% and possibly achieve the 4.5% target earlier than 2025-26.

- GST Compensation Cess:
    o   The GST compensation cess collected from July 2022 to June 2024 is expected to be around [1] 2.7 trillion. This revenue helps repay loans taken by states during covid-19. The government might remove the GST compensation cess or adjust it within revised rates for non-merit goods. This could align with the broader GST rate rationalization to reduce the

multiplicity of rates and boost demand.

- Transparency in budget:
  - o Historically, budgets presented after general elections rely on revised estimates from the interim budget. Significant differences between provisional and revised estimates have been noted in previous years, affecting the accuracy of economic assessments. This time government can Include provisional estimates along with revised estimates in the Budget to enhance transparency. It could provide a more accurate understanding of the govern-ment's revenue collections and expenditure patterns.

Mains Point: **focus areas in the upcoming union budget**

17. **Changing terms of trade: India must aim to boost export share**

Context:

India's trade policies to boost exports

The article discusses how India should review and improve its trade policies to boost exports. It highlights the need to reduce high tariffs, join trade agreements, invest in human capital, and diversify export destinations to achieve sustainable growth and competitiveness.

Current State of India's Trade
- Global Share:
  - o India's contribution to global merchandise exports was only 1.8% in 2023.
- Comparison with Other Countries:
  - o This is significantly lower than the shares of the US and China, which stood at 8.5% and 14.2% respectively.
- Export Decline:

- o In the fiscal year 2023-24, India's merchandise exports witnessed a decrease of 3.09%.
- Services Sector:
  - o India is the seventh-largest exporter of services globally, showing resilience amid global economic fluctuations. Despite strengths, the growth rate of services exports fell to a three-year low of 4.9% in 2023-24.

Trade Important for India's Growth
- Boosts Aggregate Demand:
  - o International trade drives aggregate demand, essential for rapid growth.
- Reduces Dependence on Foreign Savings:
  - o Higher exports decrease reliance on foreign savings.
- Job Creation:
  - o Expanding exports generates jobs for India's growing workforce.

Current Challenges in India's Trade Policy
- High Tariffs:
  - o High tariffs reduce the competitiveness of domestic manufacturers, especially affecting small and medium enterprises.
- Lack of Major Trade Agreements:
  - o India is not part of significant trade agreements like the Regional Comprehensive Economic Partnership (RCEP), limiting its integration into global value chains.
- Dependence on Chinese Imports:
  - o Despite avoiding RCEP, India has not reduced its reliance on Chinese imports.
- Regulatory Challenges:
  - o New measures like the European Carbon Border Adjustment

Mechanism could restrict Indian exports further.

Should be done

- Address Climate Concerns:
  - o Prepare for regulations like the European Carbon Border Adjustment Mechanism to avoid restrictions on exports.

- Invest in Human Capital:
  - o Services exports rely on skilled workers. Significant investment in education, training, and research is needed. India saw a 60% increase in global capability centers from 2015-16 to 2022-23.

- Diversify Export Destinations:
  - o Reduce reliance on the US and Canada, which account for over half of India's services exports, to mitigate economic risks.

Prelims Point: **India's trade policies to boost exports**

Mains Point: **India's trade policies to boost exports**

18. Gender Gap Report 2024: India fares worse than Bangladesh, Nepal, Sri Lanka, Bhutan; scores low in political parity indices

Context:

Global Gender Gap Report 2024

The World Economic Forum (WEF) has released the Global Gender Gap Report 2024, highlighting persistent gender inequality across various sectors worldwide.

About Global Gender Gap Report 2024

- The Global Gender Gap Report 2024 is published by the World Economic Forum.

- It assesses gender parity across four key dimensions: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment.

- It is the longest-standing index tracking the progress of numerous countries' efforts towards closing these gaps over time since its inception in 2006.

Key findings of the report

1. The global gender gap score for all 146 countries included in this edition stands at 68.5%.

2. Among the 101 countries continuously covered since 2006, the gap has also improved by +0.1 points to reach 68.6%.

3. Despite progress, no country has achieved full gender parity. However, 97% of economies included in this edition have closed more than 60% of their gender gap (compared to 85% in 2006).

Top-Ranking Countries:

i) Iceland maintained its position as the most gender-equal country for the 14th consecutive year, with a gender gap score of 91.2%.

ii) Norway, Finland, and Sweden also rank high, consistently placing in the top five.

About India's Performance

1. India is ranked 129 in this year's index. The ranking reflects a slight regression compared to the previous edition.

2. The decline is primarily due to small decreases in 'Educational Attainment' and 'Political Empowerment.' Despite the overall decline, there was a slight improvement in 'Economic Participation and Opportunity.'

3. India ranks the third-lowest among South Asian economies. India fares worse than Bangladesh, Nepal, Sri Lanka, and Bhutan.

Prelims Point: **Global Gender Gap Report 2024**

ENVIRONMENT

1. India successfully concludes hosting of the 46th Antarctic Treaty Consultative Meeting (ATCM-46) and the 26th Committee on Environmental Protection (CEP-26)

Context:

26th Committee on Environmental Protection (CEP-26)

India successfully hosted the 46th Antarctic Treaty Consultative Meeting (ATCM-46) and the 26th Committee on Environmental Protection (CEP-26) from May 20th to May 30th, 2024, in Kochi, Kerala.

Key outcome of the event

1. Environmental Evaluations for Maitri-II: India will submit comprehensive environmental evaluations for the establishment of the new research station, Maitri-II.

2. CEP Priorities: The Committee agreed to focus on:
   a) Management of implications of sea ice change
   b) Enhancing environmental impact assessments of major activities
   c) Protecting the emperor penguin
   d) Developing an international framework for environmental monitoring in Antarctica

3. Management Plans Adoption: The Parties adopted 17 revised and new management plans for Antarctic Specially Protected Areas (ASPAs) and made several modifications and additions to the list of Historic and Monument sites.

4. Renewable Energy and Biosecurity: The ATCM encouraged efforts to increase the use of renewable energy and to ensure robust biosecurity measures to minimize the risks of Highly Pathogenic Avian Influenza.

5. Awareness Initiatives: A commemorative My Stamp featuring the ATCM-46 logo was released, and a mural titled 'Species-rich Antarctica' was unveiled to enhance awareness of Antarctica.

6. Tourism Framework: A significant outcome was the adoption of a decision to develop an ambitious, comprehensive, flexible, and dynamic framework for regulating tourism and non-governmental activities in Antarctica. The Parties also discussed consultative status requests from Canada and Belarus, but no consensus was reached.

About Committee for Environmental Protection (CEP)

The CEP was established in 1991 under the Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol).

Purpose:

The CEP advises the Antarctic Treaty Consultative Meeting (ATCM) on matters related to environmental protection and conservation in Antarctica.

CEP-26 Agenda Focus:

a) Assessing the current state of the Antarctic environment.

b) Evaluating the environmental impact of activities in the region.

c) Managing and reporting on environmental protection efforts.

d) Developing strategies to respond to climate change impacts in Antarctica.

e)   Creating and updating management plans for protected areas, including marine spatial protection.

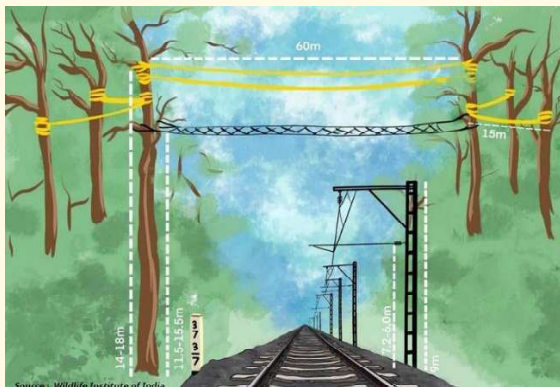f)   Implementing measures to conserve Antarctic biodiversity and protect native species.

Prelims point: **Committee for Environmental Protection (CEP), CEP-26, Madrid Protocol**

2.   Railways to construct canopy bridges across track in Assam gibbon habitat

Context:

Canopy Bridges for Gibbons in Assam The Northeast Frontier Railway (NFR) has allocated funds to build canopy bridges, allowing India's only ape to safely traverse a railway track that divides its primary habitat in eastern Assam.

About Canopy Bridges for Gibbons in Assam

Source : Wildlife Institute of India

About:

Northeast Frontier Railway (NFR) will construct canopy bridges in Assam's gibbon habitat.

Purpose:

●   To facilitate the movement of Hoolock gibbons across a railway track that divides their prime habitat in Hollongapar Gibbon Sanctuary.

Designed by:

Canopy bridges are designed by the Wildlife Institute of India (WII) in collaboration with NFR. The project involves NFR, Assam State Forest Department, WII, and other stakeholders.

●   These bridges will be installed at strategic points to ensure the safe movement of gibbons between the divided sections of the sanctuary.

●   High-grade fastening materials and techniques will be used to secure the bridges. Safety nets will be installed below the bridges as a fail-safe mechanism. Lianas and creepers will be guided along the bridges to make them look natural.

Previous Efforts:

Past efforts included an artificial canopy bridge by NFR and a natural canopy bridge by the Assam State Forest Department and Aaranyak. Gibbons preferred the natural bridge over the artificial one.

About Hoolock Gibbons

Gibbons are the smallest and fastest of all apes.

Characteristics

Hoolock gibbons are known for their intelligence, distinct personalities, and strong family bonds.

Habitat

1.   They inhabit tropical and subtropical forests in Southeast Asia.

2.   They are found in forested areas of Northeast India, Bangladesh, Myanmar, and Southern China.

Population

The estimated current population of hoolock gibbons is approximately 12,000 individuals.

Threats

1.   All 20 gibbon species, including hoolock gibbons, face a high risk of extinction due to various conservation challenges.

2.   Habitat Decline: Gibbon populations and their habitats have significantly

declined over the past century, now restricted to small areas in tropical rainforests.

3. Primary Threat in India: The main threat to hoolock gibbons is habitat loss due to deforestation for infrastructure projects.

Conservation Status

1. International Union for Conservation of Nature's Red List:

    a) Western Hoolock Gibbon: Endangered

    b) Eastern Hoolock Gibbon: Vulnerable

2. Indian Wildlife Protection Act 1972: Both species are listed on Schedule 1.

Prelims Point: **Canopy Bridges for Gibbons in Assam**

3. Tonga volcano could cause unusual weather for rest of decade: study

Context:

Impact of the Hunga Tonga-Hunga Ha'apai Eruption

Recently, a study was conducted in the Journal of Climate to investigate the climatic effects caused by the eruption of Hunga Tonga-Hunga Ha'apai volcano. It erupted on January 15, 2022, in Tonga, generating a tsunami and triggering warnings across the Pacific basin.

Findings of the study

1. Ozone Layer Effect:

From August to December 2023, there was a large hole in the ozone layer partly because of the Hunga Tonga eruption. This effect on the ozone was short-term and not expected to last past 2023.

2. Weather Changes:

The eruption caused some unusual weather changes:

    i) Australia had a wetter summer in 2024, which is not usual for an El

Niño year when it's typically drier.

    ii) The global average temperature only went up by a tiny bit, around 0.015 degrees Celsius.

3. Regional Climate Effects:

    i) Northern Australia might experience colder and wetter winters than usual up to 2029.

    ii) North America could see warmer winters during the same period.

    iii) Scandinavia might have colder winters.

4. Atmospheric Changes:

The eruption changed the way air moves in the atmosphere, which could affect weather patterns.

Hunga Tonga Different from Typical Volcanic Eruptions

1. Unique Eruption:

Hunga Tonga-Hunga Ha'apai is an underwater volcano that erupted on January 15, 2022. This eruption was extraordinary because it shot a huge amount of water vapor high into the sky, into the stratosphere (about 15-40 kilometers above the Earth).

2. Usual Volcanic Effects:

Typically, volcanoes release smoke and sulfur dioxide which leads to a cooling effect on Earth. This happens because sulfur dioxide turns into tiny particles that float in the air and reflect sunlight away from Earth.

3. Hunga Tonga's Impact:

Being underwater, Hunga Tonga didn't produce much smoke but sent 100-150 million tonnes of water vapor into the stratosphere instead.

4. Effects of Water Vapor:

In the stratosphere, water vapor can harm the ozone layer and act like a greenhouse gas, which might warm the Earth.

About Hunga Tonga-Hunga Ha'apai volcano

Location:

The Hunga Tonga-Hunga Ha'apai volcano is situated in the western South Pacific Ocean, west of Tonga's main inhabited islands.

Type of Volcano:

It is a submarine volcano, one of twelve along the Tofua Arc, part of the larger Tonga-Kermadec volcanic arc.

Geological Formation:

This arc is formed by the subduction of the Pacific Plate beneath the Indo-Australian Plate.

Composition:

The volcano includes two small, uninhabited islands named Hunga-Ha'apai and Hunga-Tonga.

Prelims Point: **Impact of the Hunga Tonga-Hunga Ha'apai Eruption**

Mains Point: **Impact of the Hunga Tonga-Hunga Ha'apai Eruption**

4. Maha Pench Tiger Reserve reports first photographic record of forest eagle owl

Context:

Spot Bellied Eagle Owl

Recently, Pench Tiger Reserve (PTR), Maharashtra reported the first photographic record of a spot-bellied eagle owl. write in active voice

About Spot Bellied Eagle Owl

Spot-bellied Eagle-Owl (Bubo nipalensis nipalensis)

The spot-bellied eagle-owl is a large bird of prey with a formidable appearance.

They are also known as the forest eagle-owl.

Distribution

1) It inhabits diverse environments such as tropical and subtropical forests, woodlands, and savannas.

2) This bird is widely distributed across India, Sri Lanka, Nepal, Bhutan, Bangladesh, and various regions in Southeast Asia.

Characteristic features

1) They are large, measuring between 50 and 65 cm in length and weighing between 1500 to 1700 grams.

2) It boasts a wingspan of up to 1.7 meters.

3) Its distinctive appearance is characterized by a rich chocolate brown color on the upper body, dotted with white spots.

4) Its name derives from the light cream color of its underbelly and breast, which are prominently marked with bold black spots.

5) This species is primarily active at night.

6) As an apex predator, it preys on rodents, small mammals, reptiles, and insects.

7) It is solitary and territorial, maintaining a specific home range.

Conservation Status

1) IUCN Status: Least Concern

2) Wildlife (Protection) Act, 1972: Schedule IV

3) CITES: Appendix II.

Prelims Point: **Spot Bellied Eagle Owl**

5. Fish moving between marine & freshwater ecosystems have designated protected areas, but no protection in them: Study

Context:

Diadromous fish

Recently, a study was published in the British Ecological Society's Journal of Applied Ecology. The researchers discovered that marine protected areas (MPAs) designated to safeguard diadromous fish species did not align with their core habitats.

This finding highlights the need for better coordination and planning to ensure effective conservation efforts for these migratory fish.

About Diadromous fish

1. Diadromous fish are those species that migrate between saltwater and freshwater environments.

2. They move back and forth between the ocean and rivers or streams during different stages of their lives.

Types of Diadromous Fish

1) Anadromous Fish: These fish are born in freshwater. As juveniles, they migrate to the ocean, where they grow into adults. Later, they return to freshwater to spawn (lay eggs).

2) Catadromous Fish:

These fish are born in saltwater. As juveniles, they move into freshwater, where they mature into adults. Eventually, they migrate back to the ocean to spawn.

3) Amphidromous Fish:

These fish are born in freshwater or estuaries (where freshwater meets the sea). Initially, they drift into the ocean as larvae. Later, they return to freshwater to grow into adults and spawn.

4) Potamodromous Fish:

These fish are born in upstream freshwater habitats (upstream areas of rivers). As juveniles, they migrate downstream within freshwater to grow into adults. Finally, they migrate back upstream to spawn.

Threats to Diadromous Fish

Diadromous fish face various human-induced pressures:

i) Agricultural and pollutant runoffs: Contaminants from agriculture and other sources can harm their habitats.

ii) Habitat destruction: Dam construction and land development impact their migration routes.

iii) Barriers to migration: Dams, weirs, and other structures hinder their movement.

iv) Fishing and bycatch: Overfishing and accidental capture affect their populations.

v) Climate change: Altered water temperatures and habitats impact their survival.

Prelims Point: **Diadromous fish**

6. Direct Seeded Rice (DSR) cropping system

Context:

Direct Seeded Rice (DSR) cropping system

The Indian Council of Agricultural Research (ICAR) has commercialized herbicide-tolerant (Ht) basmati rice

varieties, which they claim can control weeds in rice crops and support the water-saving technique of direct seeded rice (DSR).

About Direct Seeded Rice (DSR) cropping system

DSR is a modern rice cultivation method where seeds are directly sown into the field, bypassing the traditional transplanting of seedlings from a nursery.

This method is recognized for its efficiency and sustainability, benefiting farmers, the environment, and the economy.

Previous Context and Innovations in DSR

i) Historically, the Northwestern Plains, including Punjab and Haryana have used DSR for growing Basmati rice.

ii) The Green Revolution favored water-intensive transplanted rice leading to ecological challenges.

iii) Innovations from 2014 to 2017 at IARI Karnal, such as TAR-VATTAR technology utilized climatic factors and effective herbicides like Pendimethalin to cut costs and conserve water.

Development of Herbicide-Tolerant Basmati Rice

i) The Indian Council of Agricultural Research (ICAR) has commercialized non-genetically modified herbicide-tolerant (Ht) basmati rice varieties.

ii) These varieties are engineered with a mutated ALS gene that allows for the direct application of the herbicide Imazethapyr.

Scientific Research and Debates

i) Studies suggest that manual weeding at intervals (20 and 40 days after sowing) in DSR fields leads to better yields than using Imazethapyr.

ii) ICAR supports eco-friendly practices like hand weeding over repeated herbicide use to control weeds and improve seed yield.

Challenges with Herbicide Use

i) Imazethapyr specifically targets broadleaf weeds but does not affect all weed types.

ii) The evolution of herbicide-resistant weeds poses a potential threat to rice production and food security.

Prelims Point: **Direct Seeded Rice (DSR) cropping system**

7. Fungus Breaks Down Plastic Polyethylene in the Ocean

Context:

Fungus Parengyodontium album

Researchers discovered that the marine fungus Parengyodontium album can break down the plastic.

About Parengyodontium album

Parengyodontium album is a marine fungus capable of breaking down plastic polyethylene (PE) which is the most common plastic found in the ocean.

Discovery:

This fungus was discovered by marine microbiologists from the Royal Netherlands Institute for Sea Research (NIOZ).

Bioremediation Process:

During the bioremediation process, PE-derived carbon is converted into the fungal biomass of Parengyodontium album, serving as its energy source.

Role of UV Light:

Initial photodegradation of PE by UV sunlight is crucial for this process. This makes the fungus effective in degrading floating oceanic plastic litter.

Plastic Production:

Humans produce over 400 billion kilograms of plastic annually, much of which ends up in the ocean.

Potential for Deeper Ocean:

Fungi are considered the "masters of degradation" because they utilize a

variety of digestive enzymes for breaking down materials, including plastic. Researchers expect that there could be more plastic-degrading fungi in the deeper parts of the ocean.

Prelims Point: **Fungus Parengyodontium album**

8 . Remarkable new plant species steal nutrients from underground fungi

Context:

Thismia malayana- Fungus

Scientists have discovered a new plant species called Thismia malayana. It is distinctive plant species which steals nutrients from underground fungi.

About Thismia malayana

1. This plant was found in the tropical rainforests of Peninsular Malaysia.

2. The discovery was made by botanists from the Forest Research Institute Malaysia (FRIM) in collaboration with local naturalists and stakeholders.

 Locations

Thismia malayana was identified in two locations:

i) The lowlands of Gunung Angsi Forest Reserve in Negeri Sembilan.

ii) The hilly dipterocarp forests of Gunung Benom in the Tengku Hassanal Wildlife Reserve, Pahang.

Unique Characteristics

1. Thismia malayana is part of a group of plants known as mycoheterotrophs.

2. Unlike most plants, mycoheterotrophs do not perform photosynthesis.

3. Instead, they act as parasites, stealing nutrients from fungi on their roots.

4. It takes advantage of the mycorrhizal symbiosis, which is usually a mutually beneficial relationship between colonising fungi and a plant's root system.

5. This plant thrives in low-light conditions of dense forest understories.

6. Its flowers are pollinated by fungus gnats and other small insects.

7. The plant is around 2 cm long.

8. It is typically found hidden in leaf litter and growing near tree roots or old rotten logs.

Conservation Status

1. Thismia malayana is very sensitive to environmental changes.

2. It has been classified as Vulnerable according to the IUCN Red List criteria.

3. Its limited distribution and the potential threat from trampling due to its proximity to hiking trails highlight the need for continued conservation efforts.

Prelims Point: **Thismia malayana- Fungus**

9. Global project 'paints' evidence of air pollution in India

Context:

Air of the Anthropocene Initiative

The "Air of the Anthropocene" project uses light painting to visualize air pollution in India, Ethiopia, and the UK. This emphasizes severe health risks and ignites global discussions on air quality.

About the 'Air of the Anthropocene' Initiative

1. The "Air of the Anthropocene" project is an international effort that combines art and science to show air pollution in a visual way using light painting.

2. Artists and researchers worked together to create photographic evidence of air pollution by using digital light painting techniques and low-cost air pollution sensors.

3. The "painting with light" team used low-cost air pollution sensors to measure PM mass concentrations. They used the sensors' real-time data to control a moving LED array, which flashed more rapidly as PM concentrations increased.

About Particulate Matter

1. Particulate matter (PM) is a mixture of tiny solid particles and liquid droplets floating in the air. It includes things like dust, pollen, soot, smoke, and liquid drops.

2. PM10- inhalable particles, with diameters that are generally 10 micrometers and smaller; and.

3. PM2.5- fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

4. These particles can be both organic (from living things) and inorganic (from non-living things) and come in various sizes and from different sources.

Prelims Point: **Air of the Anthropocene Initiative**

10. Remoulding the Global Plastics Treaty

Context:

The global plastics problem

The article discusses the need for a global treaty on plastic pollution to support informal waste workers. These workers, often overlooked, play a crucial role in recycling. It highlights the importance of integrating and protecting their contributions in new legal frameworks.

Global plastics problem

Massive Increase in Plastic Waste: Global production of plastic waste has reached 353 million tonnes in 2019, more than double since 2000, and is expected to triple by 2060.

Low Recycling Rates:

Only 9% of the plastic waste produced globally is recycled. The majority is either incinerated (19%), dumped in landfills (50%), or disposed of at uncontrolled sites (22%).

Contribution of Informal Sector:

Informal recycling workers, who make up a significant part of the recycling workforce, manage to recycle 85% of this small percentage. They play a key role in reducing the plastic in landfills and preventing environmental leakage.

These workers are vulnerable to job losses due to privatization and new public policies like waste-to-energy projects. They are often not included in formal waste management discussions and policies.

Environmental Impact:

About 60 million tonnes of plastic from municipal solid waste end up polluting the environment, including water bodies, largely due to inadequate waste management services. Without the efforts of the informal sector, this figure would be even higher.

Global Plastics Treaty

●   The Global Plastics Treaty is a crucial international initiative aimed at reducing and eventually eliminating plastic pollution globally.

●   It was kick-started in 2021 when an Intergovernmental Negotiating Committee (INC) was established during the fifth UN Environment Assembly in Nairobi, Kenya.

●   Since its inception, the treaty has progressed through several meetings held across the world—in places like Dakar, Senegal; Uruguay; Paris, France; Nairobi, Kenya; and Canada—with the final meeting scheduled to take place in South Korea.

- A key aspect of these discussions has been the active participation of the International Alliance of Waste Pickers, who advocate for the inclusion and consideration of informal waste pickers in the treaty to ensure sustainable waste management and fair policies.

India's importance

- Balanced Approach:
  o India advocates for managing plastic through repair, reuse, refill, and recycling methods, without completely eliminating plastic use.

- Local Adaptations:
  o The country emphasizes the importance of adapting the treaty to suit country-specific conditions and capacities, ensuring that the global policies are practical and effective locally.

- **Support for Informal Sector:**
  o India highlights the critical role of informal waste pickers in the recycling process. Their inclusion in treaty discussions is vital to ensure that these workers are not marginalized by new international regulations

Prelims Point: **The global plastics problem**

11. **Competitive Bidding initiated for total available capacity of 5.39 Lakh MT/ annum of Green Ammonia intended for production and supply**

Context:

Green Ammonia Production

Recently, Solar Energy Corporation of India initiated Competitive Bidding for Green Ammonia Production.

About Green Ammonia Production

1. As part of India's National Green Hydrogen Mission, the Solar Energy Corporation of India (SECI) has launched a Request for Selection (RfS)

to identify producers of Green Ammonia.

2. This move is under the Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme, managed by the Ministry of New & Renewable Energy (MNRE).

3. SECI aims to allocate a total of 5.39 lakh metric tonnes per annum of Green Ammonia production capacity through this initiative.

4. The selection process involves e-bidding followed by an e-Reverse Auction to ensure cost-effectiveness and transparency.

5. The Green Ammonia produced under this initiative is designated for supply to fertilizer companies, supporting sustainable agriculture practices.

About SIGHT Programme Details

1. SECI is the appointed agency to implement the Green Ammonia Production incentive under Mode 2A of the SIGHT Programme.

2. Under the same programme, MNRE has already allocated 4.12 lakh metric tonnes per annum of Green Hydrogen production capacity and 1.5 GW per annum of Electrolyzer manufacturing capacity.

About National Green Hydrogen Mission

1. It was launched on January 4, 2023.

2. It aims to make India self-reliant in clean energy.

3. The mission is designed to reduce carbon emissions, lessen dependency on fossil fuel imports, and position India as a leader in Green Hydrogen technology and markets globally.

About Green Ammonia

1. Green ammonia is synthesized using hydrogen obtained from water electrolysis and nitrogen extracted from the air. These components are combined in the Haber process, which is powered by renewable energy sources.

2. The Haber Process: In the Haber process, hydrogen and nitrogen react at high temperatures and pressures to form ammonia (NH3).

3. The key to green ammonia is that the entire process, including the energy for the Haber process, is sourced from 100% renewable and carbon-free options.

Uses of Green Ammonia

1. Green ammonia serves as a cleaner fuel alternative for engines in locomotives and ships, aiming to replace traditional diesel and marine fuel oils.

2. It can be used as a fuel source for generating electricity.

3. As a primary component in fertilizer production, it supports sustainable agricultural practices.

4. Green ammonia is a versatile feedstock used in various applications, including water purification and pharmaceutical manufacturing.

Prelims Point: **Green Ammonia, SIGHT Programme**

12. Highway to 'climate hell': What breaching the 1.5-degree Celsius warming threshold could mean

Context:

Breaching the 1.5-degree Celsius warming threshold

Recently, Europe's Copernicus Climate Change Service (C3S) reported that this May was the warmest on record. It has also been found that there is an 80% chance that the world will temporarily cross the 1.5-degree Celsius threshold in the next five years.

About Current Climate Situation

i) May 2024 was the warmest May on record, with each of the past 12 months setting new warming records.

ii) The average global temperature last month was 1.5°C above the 1850-1900 pre-industrial reference period. From June 2023 to May 2024, the average

temperature was 1.63°C above this baseline.

iii) The World Meteorological Organization (WMO) predicts an 80% chance that at least one calendar year between 2024 and 2028 will see average temperatures exceed 1.5°C above pre-industrial levels.

About the 1.5 Degree Celsius Threshold

i) Paris Agreement (2015) was signed by 195 countries, it aims to limit global temperatures to "well below" 2°C above pre-industrial levels, with an aspirational goal of capping warming at 1.5°C.

ii) Climate scientists generally use the 1850-1900 period as the baseline for measuring temperature increases.

iii) Breaching this threshold could lead to high risks for some regions and vulnerable ecosystems over extended periods.

iv) The 1.5°C limit is set to avoid the disastrous and irreversible impacts of climate change, which become more pronounced at 2°C warming.

Consequences of Breaching the Threshold

i) Breaching 1.5°C does not instantly trigger a climate apocalypse but significantly increases the risk and intensity of adverse effects such as sea level rise, intense floods, droughts, and wildfires.

ii) The world is already experiencing severe heatwaves, coral bleaching, and other climate-related events exacerbated by rising temperatures.

iii) North and Central India experienced a heatwave with temperatures nearing 50°C, attributed to global warming.

iv) High Ocean temperatures triggered the fourth global mass coral bleaching event, affecting marine life and human communities dependent on reefs.

v) Five major climate tipping points are at risk of being crossed due to warming, leading to irreversible changes.

Prelims Point: **Europe's Copernicus Climate Change Service**

13. A push for more climate action
Context:

ITLOS advisory on marine pollution

The article discusses the International Tribunal for the Law of the Sea (ITLOS) advisory opinion. It includes outlining states' obligations under UNCLOS to mitigate climate change, specifically by addressing marine pollution from greenhouse gas emissions. This opinion emphasizes the importance of taking necessary measures based on the best available science.

About COSIS:
● Small Island States on Climate Change and International Law (COSIS) was established on the eve of COP 26 to develop international law on climate change.

● COSIS membership is open to all members of the Alliance of Small Island States (AOSIS).

● The mandate of the Commission shall be to promote and contribute to the definition, implementation, and progressive development of rules and principles of international law concerning climate change.

Significance of the ITLOS advisory
New Finding

● ITLOS accepted a request from the Commission of Small Island States on Climate Change and International Law (COSIS).

● ITLOS confirmed that human-released carbon dioxide is a pollutant under UNCLOS.

● This aligns with scientific findings that oceans absorb about a quarter of CO_2

emissions, causing acidification and temperature rise.

Legal Implication

● ITLOS's opinion emphasized countries' obligations under Article 194(1) of UNCLOS to prevent marine pollution from greenhouse gases.

● Measures should be based on the best available science and international agreements like the Paris Agreement.

Standard for State Obligation

● ITLOS described the obligations as due diligence but with a high standard due to serious risks.

● States must gradually reduce GHG emissions; immediate cessation is not required.

● Collective Interest

● The Opinion supports the principle that climate change is a collective interest, not just a bilateral issue. This approach adds a new chapter to international environmental law.

Other

● The opinion's political significance is notable, despite lacking legal force.

● The Netherlands Supreme Court's Urgenda case shows the need for concrete emission reduction targets, like reducing emissions by 25% below 1990 levels by 2020.

● The ITLOS advisory opinion gains more attention due to upcoming ICJ proceedings on states' climate change obligations.

Limitations of the ITLOS opinion
● Lack of Concrete Methodology:
  o ITLOS did not provide a clear method to assess state actions, unlike the detailed targets set in the Urgenda judgment by the Netherlands Supreme Court.

● Equity Considerations:
  o The opinion states measures depend on states' capabilities and

available means, emphasizing fairness but potentially limiting strict action.

● Advisory Nature:

o The opinion is advisory and not legally binding, limiting its direct influence on state actions but retaining political significance.

Prelims Point: **ITLOS advisory on marine pollution**

Mains Point: **ITLOS advisory on marine pollution**

14. Wild horse species is returned to the Kazakh steppes

Context:

Przewalski horses

Przewalski horses were reintroduced to their native habitat in Kazakhstan.

About Przewalski horses

1. Przewalski horses were found in Mongolia. They are the last truly wild horse.

2. Once thought to be the ancestor to the domestic horse, they are actually distant cousins.

3. Mitochondrial DNA suggests that they diverged from a common ancestor 500,000 years ago.

Physical Description

i) They are small, stocky, heavily built with a large head, thick neck, and short legs.

ii) They have dun-colored with a dark zebra-like erect mane, no forelock, and a dark stripe along the backbone to a dark, plumed tail.

iii) There are markings in their body which are of yellowish-white belly, dark lower legs, and zebra-like stripes behind the knees.

iv) Horses can withstand harsh winters with temperatures dropping below minus 30 degrees Celsius.

Native Habitat

i) They were originally found across Europe and Asia. Now they are found at reintroduction sites in Mongolia, China, and Kazakhstan.

ii) There are now 2,000 Przewalski horses around the world, mainly in China and Mongolia but, they are also found in France, Russia and living wild in the Chernobyl exclusion zone between Belarus and Ukraine.

Diet

Grass and leaves from shrubby trees

Social Structure   Typically consist of several mares, a dominant stallion, and their offspring.

Younger stallions form bachelor herds and must defeat the dominant stallion to breed. Offspring are chased out upon reaching breeding age.

Distinction

Wild Status: It is the only true wild horses left. Other "wild" horses are actually feral domestic horses.

Conservation status

IUCN: Endangered

Prelims Point: **Przewalski horses**

15. MP: Rare 4-Horned Antelope Sighted in Veerangana Durgavati Tiger Reserve

Context:

Four-horned Antelope

A rare four-horned antelope has been sighted for the first time in the Veerangana Durgavati Tiger Reserve.

About four-horned antelope

1. The four-horned antelope, also known as Chousingha, is a small bovid antelope.

2. Its scientific name is Tetracerus quadricornis.

3. These antelopes are the smallest found in Asia.

Characteristic features

1. The four-horned antelope has a yellowish-brown to reddish coat, a slender build, small legs, and a short tail.

2. One of their unique features is the presence of four horns. Only males grow horns, with one pair located between the ears and another on the forehead.

3. These antelopes are typically diurnal and solitary, although they can sometimes be seen in loose groups of three to four.

Distribution

1. The four-horned antelope is endemic to India and Nepal.

2. In India, their range extends from the foothills of the Himalayas in the north to the Deccan Plateau in the south.

Habitat

1. They predominantly inhabit open, dry, deciduous forests in hilly terrain.

2. They prefer areas with significant grass cover or heavy undergrowth and are usually found close to water bodies.

Conservation Status

IUCN Red List: Vulnerable on the IUCN Red List.

About Veerangana Durgavati Tiger Reserve

1. Veerangana Durgavati Tiger Reserve is spread across Sagar, Damoh, and Narsinghpur districts in Madhya Pradesh.

2. It is the seventh tiger reserve in Madhya Pradesh.

3. The reserve will encompass areas within the Nauradehi Wildlife Sanctuary and Durgavati Wildlife Sanctuary.

Characteristic Features

1. The Singorgarh Fort is located within the reserve.

2. The reserve will include areas within the Nauradehi Wildlife Sanctuary and Durgavati Wildlife Sanctuary.

3. A green corridor will be developed to connect Panna Tiger Reserve (PTR) with Durgavati facilitating the natural movement of tigers to the new reserve.

Rivers

Parts of the reserve fall under the Narmada and Yamuna River basins.

Vegetation

The vegetation in the reserve is of the dry deciduous type.

Flora

The chief floral elements include Teak, Saja, Dhaora, Ber, Amla, and others.

Fauna

The reserve is home to a variety of animals, including tigers, leopards, wolves, jackals, Indian foxes, striped hyenas, Nilgai, Chinkara, Chital, Sambhar, Black Buck, Barking deer, Common Langur, and Rhesus Macaque.

Prelims Point: **Four-horned Antelope**

16. APEDA facilitates first Consignment of MD 2 Pineapples from India to UAE

Context:

MD2 Pineapple

The Agricultural and Processed Food Products Export Development Authority (APEDA) has facilitated the successful export of the first consignment of MD 2 variety pineapples to the United Arab Emirates (UAE). The consignment included 8.7 metric tons (650 boxes) of MD 2 pineapples.

About MD2 Pineapple

1. The MD 2 pineapple, also known as "Golden Ripe" or "Super Sweet."

2. It was developed by Del Monte in the 1980s through selective breeding.

Production

1. It is largely cultivated in Costa Rica, the Philippines, and Thailand.

2. In India, it is produced in the Sindhudurg district of the Konkan region in Maharashtra.

Unique features

1. MD2 pineapples are known for their exceptionally sweet flavor, with a sugar content higher than that of traditional pineapples.

2. They have lower acidity, making them more palatable and easier on the stomach for those sensitive to acidic fruits.

3. These pineapples contain more vitamin C than traditional varieties, making them a healthier choice.

Appearance

MD2 pineapples have a uniform cylindrical shape and a golden-yellow skin when ripe. Their flesh is also more golden compared to other varieties.

Shelf Life

They have a longer shelf life, which makes them ideal for export and extended storage.

Uses of MD2 Pineapple

i) Nutritional Value: High in vitamins, especially vitamin C, and minerals.

ii) Digestive Aid: Contains bromelain, an enzyme that aids in digestion and has anti-inflammatory properties.

iii) Versatility: Can be used in a variety of dishes, including salads, desserts, juices, and as a garnish.

Consumption

i) They are eaten fresh as a snack or in fruit salads.

ii) They are used in recipes for cooking and baking, adding a sweet and tangy flavor to dishes.

iii) They are also made into fresh juice or smoothies.

Prelims Point: **MD2 Pineapple**

17. Study ranks India second in nitrous oxide emissions

Context:

Report on Nitrous Oxide Emissions

A new report published by the Global Carbon Project reveals that planet-warming nitrous oxide (N_2O) emissions increased by 40 percent between 1980 and 2020.

Highlights of the Report on Nitrous Oxide Emissions

Global Impact

i) Nitrous oxide is the third most significant greenhouse gas, after carbon dioxide and methane.

ii) Over 100 years, nitrous oxide is 273 times more potent than carbon dioxide.

iii) The increase in greenhouse gases has already raised the Earth's average surface temperature by 1.15 degrees Celsius compared to the 1850-1900 average.

iv) Anthropogenic nitrous oxide emissions contribute to about 0.1 degrees Celsius of this warming.

Emission Trends

i)   Nitrous oxide emissions grew by 40% between 1980 and 2020.

ii)   China is the largest emitter, followed by India and the United States. The top 10 emitters are China, India, the United States, Brazil, Russia, Pakistan, Australia, Indonesia, Turkey, and Canada.

Major Sources

i)   Seventy-four percent of nitrous oxide emissions over the last decade originated from agricultural practices, specifically the use of nitrogen fertilizers and animal manure.

ii)   Other significant sources include industrial activities and the burning of forests or agricultural waste.

Atmospheric Concentration

i)   In 2022, the concentration of nitrous oxide in the atmosphere reached 336 parts per billion.

ii)   This concentration is 25% higher than the levels seen before the industrial age (1850-1900) and significantly surpasses the predictions made by the Intergovernmental Panel on Climate Change (IPCC).

About Nitrous oxide

1.   Nitrous oxide is commonly known as laughing gas or happy gas.

2.   It is a colorless, odorless, and non-flammable gas. While nitrous oxide is not flammable, it supports combustion similarly to oxygen. It leads to a state of euphoria, explaining its nickname 'laughing gas.'

3.   Nitrous oxide is soluble in water, and its vapors are heavier than air.

Applications:

i)   Medical Use: Nitrous oxide is commonly used by dentists and medical professionals to sedate patients undergoing minor medical procedures.

ii)   Food Industry: The gas is also used as a propellant in food aerosols.

iii) Automotive Industry: It is used in the automotive industry to enhance engine performance.

Prelims Point: **Report on Nitrous Oxide Emissions**

18.   Union Jal Shakti Minister Shri C.R. Paatil reviews progress of Namami Gange Mission Projects

Context:

Launch of the E-Flow Monitoring System

Shri C.R. Paatil launched the Environmental flows (E-flows) Monitoring System developed by the NMCG.

About the Launch of the E-Flow Monitoring System

1.   The E-flow Monitoring System is developed by the National Mission for Clean Ganga.

2.   It is an integral component of the PRAYAG portal which is a real-time monitoring centre for the planning and monitoring of projects, river water quality, and other crucial parameters.

3.   This portal encompasses online dashboards such as the Ganga Tarang Portal, Project Management Tool Dashboard, and the Ganga Districts Performance Monitoring System.

4.   This platform facilitates real-time analysis of the water quality of the Ganga, Yamuna, and their tributaries, and monitors the Namami Gange programme activities at the central level.

5.   The performance of Sewage Treatment Plants (STPs) is monitored through the Online Continuous Effluent Monitoring System (OCEMS), ensuring that all STPs operate at their rated capacity. River water quality is also monitored at various locations.

6. The launch of the E-flow Monitoring System marks a significant step towards ensuring the continuous and sustainable flow of the Ganga River.

7. The Government of India has mandated minimum E-flow for various stretches of the Ganga River to be maintained year-round.

8. The National Mission for Clean Ganga laid down the flow specifications essential for preserving the river's ecological balance, safeguarding aquatic life, and ensuring sustainability amidst diverse water usage demands.

About National Mission for Clean Ganga (NMCG)

- The NMCG was established in 2011. It is registered as a society under the Societies Registration Act, 1860.

- The NMCG has a two-tier management structure comprising a Governing Council and an Executive Committee.

- The Executive Committee meets every month to coordinate, supervise, and deliberate on funding for Namami Ganga projects.

- The NMCG operates under the National Ganga Council. The NMCG is supported by State Programme Management Groups (SPMGs) in Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, and West Bengal.

Objective:

The primary objective of the NMCG is to accomplish the mandate of the National Ganga Council.

Goals:

One of the key goals is to prevent, control, and abate environmental pollution in the Ganga River. The NMCG adopts a river basin approach for the rejuvenation of the Ganga River.

Aim:

The NMCG aims to maintain minimum ecological flows in the river to ensure water quality and environmentally sustainable development.

Vision

i) Continuous Flow: The vision includes ensuring Aviral Dhara, which means a continuous flow of water in the Ganga.

ii) Unpolluted Flow: The vision also encompasses Nirmal Dhara, which means an unpolluted flow of water.

iii) Geologic and Ecological Integrity: The NMCG strives to preserve the geologic and ecological integrity of the river.

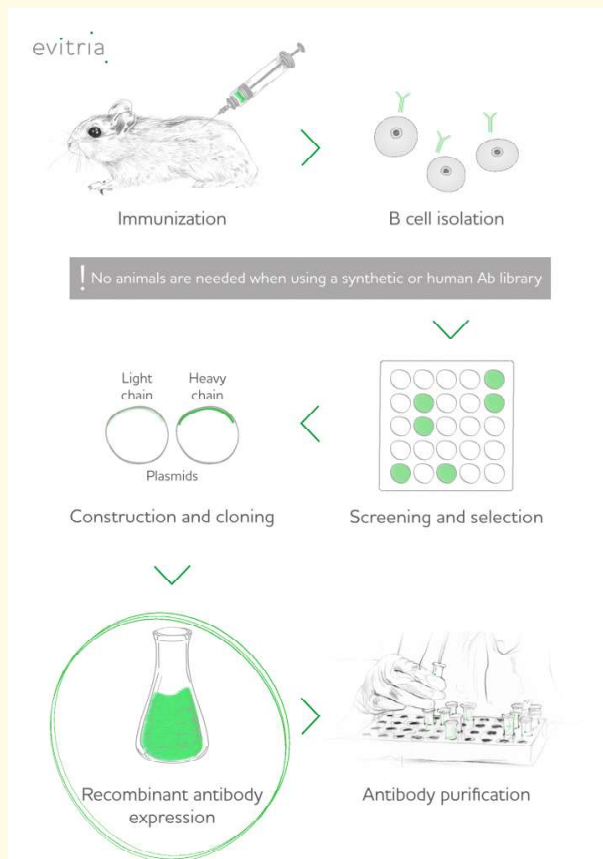Prelims Point: **Launch of the E-Flow Monitoring System**

SCIENCE AND TECHNOLOGY

1.   Recombinant Proteins

Context:

Researchers at the Department of Biochemistry, Indian Institute of Science have devised an innovative method for producing recombinant proteins.

About Recombinant Proteins

Source: evitria

· **Recombinant Proteins:** They are proteins that are artificially produced by introducing specific genes (Recombinant DNA) into host organisms, such as bacteria or yeast. These genes instruct the host organisms to manufacture the desired protein.

· **Types of Recombinant Proteins:** There are various types based on their applications and production methods. Some of the well know recombinant protein types are interferons, recombinant hormones, tumor necrosis factors, tumor necrosis factors, etc.

· **Examples:** Examples of recombinant proteins include human insulin for diabetes, human growth factors for growth hormone deficiency, Factor VIII for hemophilia, and therapeutic monoclonal antibodies for treating cancer and viral infections like SARS-CoV-2.

· **Process of Production: Recombinant protein production** involves inserting a modified gene into a suitable vector (like a plasmid) and transferring it into host cells (like bacteria or yeast). It involves:

· **Insert Gene:** A gene is modified and inserted into a vector.

· **Transfer to Cells:** The vector is introduced into host cells.

· **Cell Growth:** These cells are grown in a culture until they reach high concentration.

· **Harvesting:** After growing, the cells are harvested to obtain the recombinant protein.

Applications of Recombinant Proteins:

· **Biomedical Research:** It is used to understand health and disease mechanisms.

· **Biotherapeutics:** It is employed in the development of biotherapeutic products.

· **Protein-Based Polymers:** They are also utilized in drug delivery systems.

· **Disease Treatment:** It is used to produce antibodies and enzymes.

· **Tissue Engineering:** It provide protein scaffolds for tissue engineering applications.

About Protein

· A protein is a large, complex molecule that is a key building block of life.

Role in Biological Systems:

· **Facilitator:** Proteins facilitate most biological processes in a cell, including gene expression, cell growth, proliferation, nutrient uptake, intercellular communication, and apoptosis.

· **Synthesis Blueprint:** The blueprint for protein synthesis is stored in DNA, which serves as a template for regulated transcriptional processes to produce messenger RNA (mRNA).

UPSC Prelims point: Recombinant proteins

2.   Cryonics Practice for Freezing Human Body

Context:

Recently, a cryonics company in Australia has frozen its first client, with the hope of reviving him in the future.

About Cryonics

· The practice of freezing an individual who has died, to revive them in the future, is known as cryonics.

· The word cryonics is derived from the Greek word "krýos," meaning "icy cold."

· **Objective:** Cryonics aims to save lives by preserving individuals at extremely low temperatures until future medical technologies can restore them to full health.

· Individuals in this state are referred to as "cryopreserved patients," as Cryonicists do not consider them truly dead.

· **Process:** The process of Cryonic preservation involves the following process:

· Cryonic preservation can only be performed after an individual has been legally declared dead. The process begins shortly after death, with the body being packed in ice and transported to a cryonics facility.

· At the facility, blood is drained and replaced with antifreeze and organ-preserving compounds known as cryoprotective agents.

· In this vitrified state, the body is placed in a chamber filled with liquid nitrogen and preserved at -196 °C.

· Currently, a few hundred bodies have been frozen through cryonics.

UPSC Prelims point: **Cryonics**

3.   Non-infectious Nipah Virus-Like Particles (VLPs)

Context:

Recently, Scientists at the Institute of Advanced Virology (IAV) in Thonnakkal have created a new method to produce non-infectious Nipah virus-like particles (VLPs) in the lab.

About the new research

Source: The Hindu

About Virus-Like Particles (VLPs)

· **About:** VLPs are molecules that resemble viruses but are non-infectious. They are useful for studying viral behavior without the risk of causing disease.

· The new VLPs are tagged with a small peptide called HiBiT, which enhances their functionality in research, particularly in drug screening and vaccine development.

· **Vaccine Development**: They are highly effective in creating vaccines for

diseases such as human papillomavirus (HPV), hepatitis B, and malaria.

·   **Immune Response**: When introduced into the body, VLPs trigger an immune response without causing disease symptoms, effectively training the body to recognize and fight the actual virus.

·   **Applications:** These virus-like particles (VLPs) allow scientists to test vaccines and treatments for the Nipah virus in safer labs with lower safety requirements (BSL-2). This makes the research process safer and more accessible.

·   **Nanomachine Use**: Recently, VLPs have been used as nanomachines to deliver drugs to specific sites and cells within the body.

Structure and Function:

·   **Size**: VLPs are small, with a radius of about 20 to 200 nm, allowing them to enter lymph nodes and activate the immune system.

·   **Composition**: Composed of one or more structural proteins, possibly arranged in multiple layers, and may include an outer lipid envelope that mimics the virus's protective outer layer.

·   **Vaccine Production**: VLP vaccines can be produced using bacterial, yeast, insect, or mammalian cells and are known for their strong immune response due to the dense display of epitopes.

About Nipah Virus

·   Nipah virus (NiV) is a zoonotic virus, transmitting from animals to humans, through contaminated food, or directly between people.

·   **Disease Impact**: It can cause a spectrum of illnesses in humans, ranging from asymptomatic infections to acute respiratory problems and fatal encephalitis. It also causes severe disease in animals like pigs, affecting economic stability for farmers.

Treatment and Management:

·   **Lack of Specific Treatments**: Currently, there are no specific drugs or vaccines for Nipah virus.

·   **Supportive Care**: Intensive supportive care is crucial to manage severe respiratory and neurological complications in infected individuals.
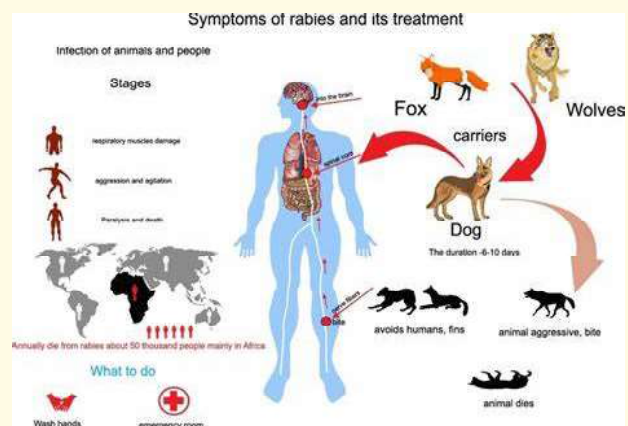
UPSC Prelims point: **Virus-Like Particles**

4.   J&K Classifies Rabies as a Notifiable Disease

Context:

The government of Jammu and Kashmir has classified human rabies as a notifiable disease under the Epidemic Diseases Act of 1897.

About Rabies

Source: medium.com

·   **Nature of Disease:** Rabies is a zoonotic, viral disease preventable by vaccine, caused by the RABV virus.

·   **Affected System:** It primarily targets the central nervous system, causing severe brain disease and, ultimately, death if treatment is not administered before symptoms appear.

·   **Transmission:**

·   **Main Carriers:** Domestic dogs are the primary transmitters of the rabies virus to humans in up to 99% of cases. It can affect both domestic and wild animals.

·   **Mode of Spread:** The virus spreads to humans and animals through saliva, typically via bites, scratches, or direct

contact with mucous membranes (e.g., eyes, mouth, or open wounds).

· **Symptoms:**

· **Early Signs:** Initial symptoms include lethargy, fever, vomiting, and anorexia.

· **Advanced Symptoms:** Rapid progression to cerebral dysfunction, ataxia, paralysis, difficulties in breathing and swallowing, excessive salivation, unusual behavior, aggressiveness, and self-mutilation.

· **Outcome:** Once clinical symptoms manifest, rabies is almost always fatal.

· **Prevention:**

· Rabies can be prevented through vaccination.

· The most cost-effective method to prevent rabies in humans is by vaccinating dogs, including puppies, to cut off the transmission at its source.

· **Treatment:**

· **Post-Exposure Prophylaxis (PEP):** Treatment after exposure to rabies includes wound care, administration of human rabies immune globulin (HRIG), and a series of four or five rabies vaccines.

· This treatment is nearly 100% effective in preventing the disease if given promptly after exposure.

About notifiable disease

· **About:** A notifiable disease is one that law mandates must be reported to government authorities. This reporting helps in monitoring the disease and providing early warnings of potential outbreaks. Here's who notifies these diseases and how the notification process works:

· **Who Notifies:**

· **Healthcare Providers**: Doctors, nurses, and other healthcare professionals are typically required to report cases of notifiable diseases.

· **Laboratories**: Medical laboratories must report findings that indicate the presence of notifiable diseases.

· **Hospitals and Clinics**: Both government and private hospitals and clinics are responsible for reporting cases of notifiable diseases.

How They Notify:

· **Written Notification**: For most diseases, healthcare providers must fill out a specific form detailing the case and submit it to local or state health authorities within three days.

· **Verbal Notification**: In urgent situations, healthcare providers are required to report cases verbally via phone within 24 hours.

· **Electronic Reporting Systems**: Some regions may use electronic health records and reporting systems to streamline the notification process

UPSC Prelims point: **Notifiable disease and Rabies**

5.   Diadromous fish

Context:

· Recently, a study was published in the British Ecological Society's Journal of Applied Ecology. The researchers discovered that marine protected areas (MPAs) designated to safeguard diadromous fish species did not align with their core habitats.

· This finding highlights the need for better coordination and planning to ensure effective conservation efforts for these migratory fish.

About Diadromous fish

Source: Down To Earth

Aspects	Description

About

1. Diadromous fish are those species that migrate between saltwater and freshwater environments.
2. They move back and forth between the ocean and rivers or streams during different stages of their lives.

Types of Diadromous Fish

1) **Anadromous Fish:** These fish are born in freshwater. As juveniles, they migrate to the ocean, where they grow into adults. Later, they return to freshwater to spawn (lay eggs).

2) **Catadromous Fish:** These fish are born in saltwater. As juveniles, they move into freshwater, where they mature into adults. Eventually, they migrate back to the ocean to spawn.

3) **Amphidromous Fish:** These fish are born in freshwater or estuaries (where freshwater meets the sea). Initially, they drift into the ocean as larvae. Later, they return to freshwater to grow into adults and spawn.

4) **Potamodromous Fish:** These fish are born in upstream freshwater habitats (upstream areas of rivers). As juveniles, they migrate downstream within freshwater to grow into adults. Finally, they migrate back upstream to spawn.

Threats to Diadromous Fish

Diadromous fish face various human-induced pressures:

i) **Agricultural and pollutant runoffs:** Contaminants from agriculture and other sources can harm their habitats.

ii) **Habitat destruction:** Dam construction and land development impact their migration routes.

iii) **Barriers to migration:** Dams, weirs, and other structures hinder their movement.

iv) **Fishing and bycatch:** Overfishing and accidental capture affect their populations.

v) **Climate change:** Altered water temperatures and habitats impact their survival.

UPSC Prelims point: **Diadromous fish**

6. Stromatolites- Geological Structures

Context:

Recently, scientists discovered living stromatolites which are ancient geological structures formed by algae on Sheybarah Island, located on the northeastern shelf of the Red Sea in Saudi Arabia.

About Stromatolites

· **About Stromatolites:** These are layered structures formed by the activity of microorganisms, primarily cyanobacteria (blue-green algae). They are also known as stromatoliths.

· **Formation Process:** These organisms trap and bind sedimentary grains in shallow waters, creating layers upon layers until they form mound-like structures.

· **Appearance**: Stromatolites typically display thin, alternating light and dark layers. Their shapes can vary, being flat, rounded (hummocky), or dome-shaped.

· **Historical Significance**

· They are ancient structures, most common during the Precambrian era, over 542 million years ago.

· While primarily marine, some ancient stromatolites from more than 2.5 billion years ago are found in environments ranging from intertidal zones to freshwater lakes.

· **Current Locations:** Today, living stromatolites are rare which are found in a few salty lagoons or bays, notably

in Western Australia. Shark Bay is a key location for these living marine stromatolites.

Importance of Stromatolites

· **Fossil Records:** It provide critical evidence of early life on Earth, with fossils dating back over 3.5 billion years.

· **Oxygen Production:** The cyanobacteria in stromatolites are photosynthetic. They produce oxygen as a byproduct of their metabolism.

· **Role in Understanding the Great Oxygenation Event and evolution of complex life forms:** About 2.5 billion years ago, as stromatolites became more prevalent, they significantly increased the oxygen levels in the atmosphere. This transformation was crucial as it changed the atmosphere from being rich in carbon dioxide to one rich in oxygen. The rise in atmospheric oxygen set the stage for the evolution of more complex life forms, including the development of eukaryotic cells, which are cells with a nucleus.

UPSC Syllabus: Science & Technology

7.   Reverse Transcriptase

Context:

During the COVID-19 pandemic, the enzyme reverse transcriptase was widely used in labs worldwide. It became the gold standard for detecting the SARS-2 virus through diagnostic tests.

About Reverse Transcriptase and Its Role in Bacteria

Source: The Hindu

· Reverse transcriptase was discovered independently by Howard Temin and David Baltimore in 1970, as published in the journal Nature. This enzyme can reverse the usual flow of genetic information by converting RNA into DNA.

· This discovery changed the understanding of genetic information flow and revolutionized research methods, allowing scientists to study genes more effectively.

· **Application in Diagnostics and Treatment**

· **Diagnostics:** The enzyme is crucial in molecular diagnostics, converting viral RNA into DNA to measure viral loads especially in diseases like hepatitis B and HIV.

· **Treatment of HIV:** Reverse transcriptase inhibitors became a fundamental part of treating HIV/AIDS which is significantly improving patient survival rates.

About Bacterial Reverse Transcriptase and Gene Creation

· The first bacterial reverse transcriptase was identified in 1989, showing that bacteria have similar genetic mechanisms as humans.

· **Function in Klebsiella pneumoniae:** When attacked by bacteriophages (viruses that infect bacteria), Klebsiella pneumoniae bacteria use reverse transcriptase to create DNA from non-coding RNA, leading to the production of a protein named 'Neo'.

· **Defense Mechanism:** The researchers have named this protein 'Neo,' which stands for "never-ending open-reading frame."

· Neo can put the bacterial cell into a sort of deep sleep, stopping it from multiplying. This also stops the virus that's infecting the bacteria from multiplying, effectively halting the infection.

Implications and Future Directions

· **Potential in Biotechnology and Medicine:** The role of reverse transcriptase in bacterial defense opens new avenues for biotechnological and medical innovations, particularly in combating antimicrobial resistance.

· **Research Opportunities:** Exploring reverse transcriptases further could unveil new genetic evolution mechanisms and viral resistance strategies, offering novel therapeutic and biotechnological applications.
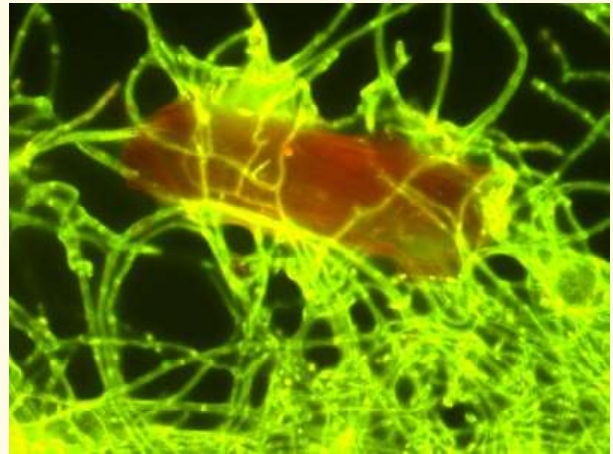
UPSC Prelims point: **Reverse transcriptase**

8. Fungus Parengyodontium album

Context:

Researchers discovered that the marine fungus Parengyodontium album can break down the plastic.

About Parengyodontium album

· Parengyodontium album is a marine fungus capable of breaking down plastic polyethylene (PE) which is the most common plastic found in the ocean.

· **Discovery:** This fungus was discovered by marine microbiologists from the Royal Netherlands Institute for Sea Research (NIOZ).

· **Bioremediation Process:** During the bioremediation process, PE-derived carbon is converted into the fungal biomass of Parengyodontium album, serving as its energy source.

· **Role of UV Light:** Initial photodegradation of PE by UV sunlight is crucial for this process. This makes the fungus effective in degrading floating oceanic plastic litter.

· **Plastic Production:** Humans produce over 400 billion kilograms of plastic annually, much of which ends up in the ocean.

Source: Laboratory Equipment

· **Potential for Deeper Ocean:** Fungi are considered the "masters of degradation" because they utilize a variety of digestive enzymes for breaking down materials, including plastic. Researchers expect that there could be more plastic-degrading fungi in the deeper parts of the ocean.
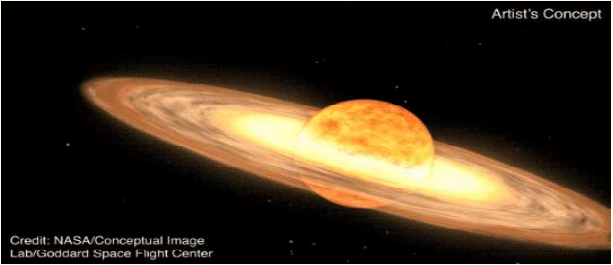
9. Minuteman III

Context:

The US Air Force recently tested an unarmed Minuteman III intercontinental ballistic missile from Vandenberg Space Force Base in California.

About Minuteman III

Source: National Air and Space Museum

About   Description

About LGM-30G Minuteman III

1. The LGM-30G Minuteman III is a solid-fueled intercontinental ballistic missile (ICBM) first deployed by the United States Air Force (USAF) in the 1960s.

2. It is the only land-based component of the U.S. nuclear triad.

3. Originally intended for a ten-year service life, it has been continuously modernized, with its replacement, the Ground-Based Strategic Deterrent (GBSD), expected to be available by 2029.

4. It was the first U.S. missile equipped with multiple independently targetable reentry vehicles (MIRVs).5. The U.S. currently has approximately 440 Minuteman III missiles in its arsenal.

Designed and manufactured by Boeing Corporation.

Features

1. Three-Stage, Solid-Fuel Design: The missile consists of three stages powered by solid fuel.

2. **Dimensions:** It is 18.2 meters long, with a diameter of 1.85 meters, and a launch weight of 34,467 kilograms.

3. **Range and Payload:** The Minuteman III has a maximum range of 13,000 kilometers and can carry a payload of three reentry vehicles.

4. **Current Warhead Configuration:** It now carries a single nuclear warhead in accordance with arms control agreements between the United States and Russia.

5. **Reliability and Launch Capabilities:** The missile boasts a fast launch time, nearly 100 percent testing reliability, and has

backup airborne launch controllers to maintain retaliatory capabilities.

UPSC Prelims point: **Minuteman III**

10. Blaze Star

Context:

The upcoming explosion of "Blaze Star" (T Coronae Borealis) which is a rare celestial event. It will be visible to the naked eye for the first time since 1946. This event highlights the dynamic nature of the universe and the complex processes governing stellar evolution.

About Blaze Star

Source: NASA's Goddard Space Flight Center

· Blaze Star is a dim star located 3,000 light-years away from our solar system.

· It is situated in the constellation Corona Borealis, also known as the "Northern Crown."

· Blaze Star is a rare example of a recurrent nova, which means it experiences explosive increases in brightness approximately once every 80 years.

Stellar Components:

· The nova involves a binary star system comprising a white dwarf and a red giant.

· The white dwarf draws material from the red giant, leading to periodic explosive increases in brightness.

· An explosion occurs when the red giant's surface temperature escalates dramatically, causing it to shed material onto the white dwarf, which then ignites a thermonuclear explosion.

· **Upcoming Explosion:** The next stellar explosion is expected to be visible to the naked eye. It is predicted to shine as brightly as Polaris, the North Star, for about a week. NASA predicts this event will occur sometime between now and September 2024.

· **Historical Eruptions:** Past notable eruptions of T CrB were recorded in the years 1946 and 1866. Earlier documented observations date back to 1787 and 1217.

· **Frequency and Impact:** Novae like T CrB occur once every few decades to a century. They differ from supernovae in scale, frequency, and consequences. Unlike supernovae, novae do not destroy the star system but allow it to reset and repeat the cycle.

UPSC Prelims point: Blaze star

11. PraVaHa software

Context:

The Indian Space Research Organisation (ISRO) recently developed PraVaHa, a Computational Fluid Dynamics (CFD) software.

About PraVaHa software

Aspects	Description
About	1. PraVaHa is a software developed by ISRO's Vikram Sarabhai Space Centre (VSSC) for analyzing the aerodynamics and thermodynamics of aerospace vehicles. 2. This software, known as a Computational Fluid Dynamics (CFD) tool helps simulate the flow of air around various vehicles like rockets and re-entry vehicles (both with and without wings).
Aim	1. PraVaHa aims to take over most of the CFD simulations for aerospace vehicle design,

currently done using commercial software.

2. This means it could become a primary tool for designing missiles, aircraft, and rockets, providing solutions to complex aerodynamic problems.

Applications of PraVaHa

1. **Gaganyaan Program:** PraVaHa is crucial in analyzing the aerodynamics of human-rated launch vehicles, including HLVM3, Crew Escape System (CES), and Crew Module (CM).

2. **Collaborative Development:** It's designed to be secure and flexible, allowing academic institutions and government labs to work together on developments.

3. **Simulation Capabilities:** Currently, PraVaHa can simulate airflow in both perfect gas and real gas conditions. Work is ongoing to extend its capabilities to simulate chemical reactions, such as those occurring during re-entry into Earth's atmosphere and in scramjet engines.

Importance of Computational Fluid Dynamics (CFD):

· **Design Studies:** Initial design studies for launch vehicles require evaluating many different configurations to find the best one.

· **Aerodynamic Loads:** Aerospace vehicles face extreme aerodynamic and thermal loads (pressure and heat) during launch and re-entry into Earth's atmosphere.

· **Flow Understanding:** Understanding how air flows around vehicles like rockets or crew modules during re-entry is crucial for designing their shape, structure, and thermal protection systems (TPS).

· **Unsteady Aerodynamics:** The unsteady (changing) part of aerodynamics can

cause serious flow issues and significant noise during a mission.

UPSC Prelims point: **PraVaHa software**

12. Musankwa Sanyatiensis- Dinasaur species

Context:

Scientists discovered fossils on the shoreline of Lake Kariba in Zimbabwe that represent a completely new dinosaur species.

About Musankwa Sanyatiensis

Source: PHYS.ORG

· Musankwa sanyatiensis is a newly identified dinosaur species found from fossils along the shores of Lake Kariba in Zimbabwe.

· This is the first dinosaur named from the Mid-Zambezi Basin in northern Zimbabwe in over 50 years and only the fourth dinosaur ever named from Zimbabwe.

· "Musankwa" is named after the houseboat scientists used during their expeditions. "Sanyatiensis" refers to the Sanyati River that flows into Lake Kariba.

· Musankwa sanyatiensis was a plant-eater and mainly lived in swampy areas.

· Previous Discoveries: The other three dinosaurs named from Zimbabwe are "Syntarsus" rhodesiensis (1969), Vulcanodon karibaensis (1972), and Mbiresaurus raathi (2022). The rocks where Musankwa sanyatiensis was found date back to the Late Triassic period, about 210 million years ago.

Fossil Details:

· The dinosaur is known from a single hind leg, including the thigh, shin, and ankle bones.

· Musankwa sanyatiensis weighed around 390 kg, making it one of the larger dinosaurs of its time.

Evolutionary Significance:

· It belonged to the Sauropodomorpha, a group of bipedal, long-necked dinosaurs common in the Late Triassic.

· It is closely related to similar dinosaurs found in South Africa and Argentina.

UPSC Prelims point: **Musankwa Sanyatiensis**

13. Placenta Mammals

Context:

Researchers at Stockholm University have found that brown fat, the typical mammalian heater organ, has evolved exclusively in modern placental mammals.

About Placenta Mammals:

Source: Phys.org

· **About Placenta Mammals:** A placental mammal is an animal that has a placenta.

· The placenta is a special organ that forms during pregnancy in female mammals (except for monotremes and marsupials). It is made from both the mother's and the fetus's tissues.

· **The placenta helps by:**

·   Transporting nutrients from the mother to the fetus.

·   Removing waste products from the fetus.

·   **Fetal Development:**

·   Placental mammals carry their fetus in the uterus until it is born at an advanced stage.

·   The fetus gets nourishment through the placenta before birth.

·   The placenta delivers nutrients and oxygen to the fetus in the uterus.

·   This allows a long period of fetal growth in the uterus, so the fetus can become large and mature before birth.

·   **Classification:** Placental mammals are classified under the subclass Eutheria. There are 4,000 identified species of placental mammals.

·   **Evolution:** Fossil evidence shows that the first placental mammals evolved between 163 million and 157 million years ago during the Jurassic Period.

·   **Diversity:** Placental mammals include all living mammals except marsupials and monotremes (egg-laying mammals). Marsupials and monotremes have a less-developed and less-efficient type of placenta that limits the gestation period.

About Marsupials

·   **About Marsupials:** Marsupials are a group of mammals known for giving birth to relatively undeveloped young.

·   **Reproduction:**

·   Marsupials have a short-lived placenta that nourishes their young for just a few days before they are born.

·   After birth, the young continue to grow and develop outside the womb, usually in a pouch.

·   The young get their nutrition from the mother's teats inside the pouch.

·   **Anatomy:** Marsupials have an extra pubic bone called the epipubic bone to support their pouch.

·   **Species:** There are over 330 species of marsupials. About two-thirds of them live in Australia and the other third mostly live in South America. Examples: Kangaroos, Koalas, Opossums, etc

14.   How heat impacts our lives

Context:

Increasing global warming compels us to reconsider how heat impacts our lives.

About Heat:

·   **Definition of Heat:**

·   **Microscopic View:** An object's temperature is the average kinetic energy of its particles. Heat is the thermal energy exchanged between two bodies at different temperatures.

·   **Macroscopic View:** Heat is treated as a form of energy characterized using thermodynamics and statistical mechanics.

·   **Heat Transfer:**

·   When two bodies at different temperatures come into contact, heat flows from the hotter body to the cooler one until thermal equilibrium is reached.

·   A medium can absorb heat in one location and release it in another, which is the basis for technologies like thermal power plants and air conditioning.

Conversion of Heat to Mechanical Energy:

·   Internal Combustion Engines (ICEs): This convert heat to work using the Carnot cycle, which has four steps: isothermal expansion, isentropic expansion, isothermal compression, and isentropic compression.

·   Thermal Power Plants: Its operation is based on the Rankine cycle, involving four steps: isentropic compression, heat addition, isentropic expansion, and heat removal.

Note: Carnot Cycle describes the maximum efficiency of heat engines and Rankine

Cycle is ideal form for thermal power plants.

About Applications of Heat:

· In Industrial feild, heat is used in metallurgy, mining and refineries, chemical Reactions and semiconductor electronics.

· It is used for centralized heating for homes and offices.

· It is used in internal Combustion Engines (ICEs) and steam engines.

· It is also used in transportation in the form of internal combustion engines in vehicles and aircraft and also thermal management in electric vehicles.

Heat role in climate change

· Heat plays a central role in climate change through both mitigation and adaptation strategies.

· Effective management of heat production and adaptation to heat waves are essential to combat the adverse effects of climate change.

· The greenhouse effect is a key mechanism by which heat is implicated in global warming.

UPSC Prelims and Mains point: Heat waves

15. Portable Optical Atomic Clock

Context:

A new portable optical atomic clock has been developed for accurate timekeeping at sea.

About recent research

Researchers have built a portable optical atomic clock that can be used onboard ships. It is more accurate than other vessel-borne timekeeping options. The researchers claim it is the most performant optical clock at sea.

About portable clock and its working

· An atomic clock is a timekeeping device that uses the vibrations of atoms to measure time with extreme precision.

· Some atomic clocks use the isotope caesium-133 (Cs-133) to keep time.

These clocks measure the microwave radiation emitted when Cs-133 atoms transition between two energy levels.

· The duration of one second is defined by the exact frequency of this energy transition, specifically 9,192,631,770 Hz. Caesium atomic clocks are highly accurate, losing only one second every 1.4 million years.

How Optical Atomic Clocks is different:

· Optical atomic clocks represent a significant advancement in accuracy over traditional atomic clocks. These clocks use lasers to induce atomic transitions instead of microwaves.

· Strontium or ytterbium atoms are typically used in optical atomic clocks.

· Optical transitions occur more frequently, allowing these clocks to count more cycles per second. The higher operating frequency and narrower linewidths of optical atomic clocks enable more precise time measurements.

· As a result, optical atomic clocks can measure time more accurately than traditional atomic clocks.
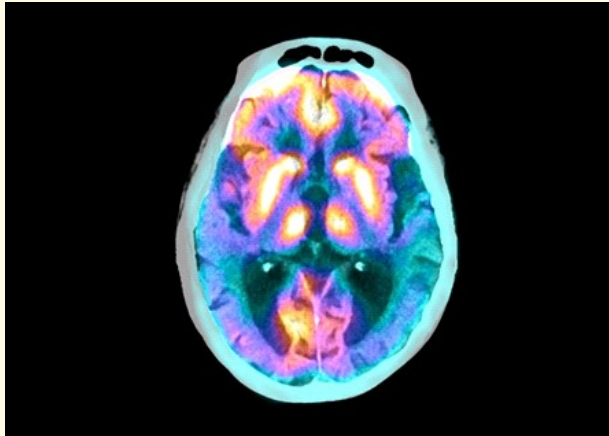
Accuracy and Applications

· It is suitable for navigation, maritime communication, and scientific research.

· It can monitor underwater seismic and volcanic activity with precision.

· It has potential applications in space for testing relativity theories and improving satellite navigation.

16. Donanemab Antibody to fight Alzheimer

Context:

Donanemab which is currently in trials has shown significant potential in slowing cognitive decline in individuals with early Alzheimer's.

About Donanemab

Source: IE

· Donanemab is a monoclonal antibody that attacks amyloid, which is a sticky protein that accumulates in the brains of people with Alzheimer's disease.

· It proved more effective in individuals with low to moderate tau levels at the trial's onset, compared to those with high tau levels.

· Note: Tau (t-tau) protein reflect the intensity of the neuronal damage in neurodegeneration, including Alzheimer's disease (AD)

Breakthrough in Slowing Cognitive Decline

· **Phase III Trial Results**: Donanemab slowed cognitive decline by 35% compared to a placebo in a phase III trial.

· **Significance**: This represents a significant milestone in Alzheimer's research, being the second drug within a year to show effectiveness in slowing cognitive decline in early-stage patients.

· **Limitations**: Donanemab and similar drugs do not stop or reverse Alzheimer's disease but can significantly improve the quality of life by slowing cognitive decline for affected individuals and their families.

· **Urgent Need**: With an estimated 14 million dementia cases, including Alzheimer's, expected in India by 2050,

effective treatments are urgently needed.

About Alzheimer's Disease

· **Nature of the Disease**: Alzheimer's disease is a progressive and irreversible neurological disorder.

· **Protein Toxicity**: Beta-amyloid is a protein vital for brain function. It becomes toxic in Alzheimer's patients, forming clumps that disrupt brain cell connections, leading to cognitive issues such as memory loss.

· **Neuronal Damage**: These protein deposits interfere with neuron communication, causing deterioration and death of brain cells.

· **Early Symptoms**: Initial signs include forgetfulness, difficulty finding words, problem-solving challenges, confusion, and disorientation.

· **Causes**: The exact cause is not fully understood but involves genetic, environmental, and lifestyle factors.

· **Risk Factors**: Family history, genetic mutations, head injuries, cardiovascular disease, and certain lifestyle factors increase the risk.

UPSC Prelims point: **Donanemab Antibody and Alzheimer**

17.   Working of Google Search Algorithms
Context:

Recently, an anonymous email claimed to have access to API documents of Google's Search algorithm and reached Rand Fishkin, the CEO of SparkToro and an SEO expert.

About Google Search Algorithms

· Google's search algorithms are complex mechanisms used to retrieve and present information from its search index based on a given query.

· These algorithms sift through billions of pieces of content to match phrases and keywords with the query. Google uses hundreds of specific criteria to

rank content, including backlinks, page speed, and content quality.

· The search company also regularly updates its algorithm to improve the quality of search results and stay ahead of spammers.

How Search Works:

There are three Stages of the Search Process:

· **Crawling:** During the crawling stage, web crawlers discover and examine URLs on the internet. These crawlers automatically index the content they find on these URLs.

· **Indexing:** In the indexing stage, the content contained in URLs is tagged with attributes and metadata to help categorize it.

· **Searching and Ranking:** In the final stage, the user enters a query, and the search engine ranks and returns content based on the query.

How Google's Algorithm Works

· Google's algorithm **uses language models to understand the words** in a query. It corrects spelling, uses synonyms, and determines the type of information being sought. The system can recognize local intent in queries and provide relevant local results.

· The algorithm assesses the relevance of content using aggregated and anonymized interaction data. Matching keywords in the content to keywords in the query sends a strong relevance signal.

· The algorithm looks for signals of expertise, authoritativeness, and trustworthiness. Signals include backlinks from prominent websites and content length.

· The algorithm prioritizes more user-friendly websites. Factors such as mobile-friendliness, page load times, HTTPS usage, and the absence of intrusive ads send positive signals.

· The algorithm considers information like location, search history, and user settings to personalize results. Previous activity on a user's Google account also influences search results.

UPSC Prelims point: **Google's search algorithms**

18. Divya Drishti

Context:

The Ingenious Research Solutions Pvt Ltd., a start-up developed an AI tool named 'Divya Drishti.' The development of 'Divya Drishti' was supported by the Centre for Artificial Intelligence & Robotics (CAIR), a DRDO laboratory based in Bangalore.

About 'Divya Drishti'

· 'Divya Drishti' is an AI tool which integrates facial recognition with immutable physiological parameters, such as gait and skeleton, to create a robust biometric authentication system.

· This innovation follows Dr. Verma's victory in the Dare to Dream Innovation Contest 2.0, organized by the Defence Research and Development Organisation (DRDO).

· The tool's dual approach of combining facial recognition with gait analysis minimizes the risk of false positives and identity fraud, ensuring a higher level of precision in identification.

· The AI tool is applicable across various sectors, including Defence, Law Enforcement, Corporate, and Public Infrastructure.

· The development under the Technology Development Fund (TDF) exemplifies DRDO's commitment to promoting start-ups in the defence and aerospace industries, aligning with the vision of 'Aatmanirbhar Bharat.'

About Centre for Artificial Intelligence & Robotics (CAIR)

· CAIR is a premier DRDO laboratory dedicated to research and development

in Artificial Intelligence, Robotics, Command and Control, and Information and Communication Security.

·   CAIR develops mission-critical products for secure battlefield communication and information management systems, enhancing the effectiveness and robustness of battlespace information systems.

·   The laboratory proactively addresses emerging cybersecurity challenges, ensuring robust defenses against evolving threats.

·   CAIR leverages advancements in cognitive and artificial intelligence systems to increase the autonomy of unmanned systems, pushing technological boundaries in complex scenarios.

·   CAIR plays a crucial role in driving national debates on technology policy, emphasizing the importance of preserving national security and achieving self-sufficiency.

UPSC Prelims point: **Divya Drishti AI tool**

SOCIAL ISSUES

1.   Impact of Methodological Changes on Poverty Data in India's 2022-23 Household Consumption Expenditure Survey

Context:

This article discusses the recent Household Consumption Expenditure Survey (HCES) in India, focusing on how poverty rates are calculated and the debate over whether poverty reduction was more effective under the NDA or UPA government. It highlights changes in survey methods and questions their impact on poverty data comparability.

The changes were made in the recent Household Consumption Expenditure Survey in India:

1.   **Use of MMRP:** Since the inception of HCES, the NSSO has employed a 30-day recall period, known as the Uniform Reference Period (URP). But now the latest survey shifted to the Modified Mixed Reference Period (MMRP) for better data accuracy, incorporating seven-day, 30-day, and 365-day recall periods.

2.   **Multiple Questionnaires:** Unlike earlier surveys that used a single questionnaire, the 2022-23 survey employed three distinct questionnaires for food items, consumables and services items, and durable goods.

3.   **Multiple Visits for Data Collection**: Previously, data collection involved a single visit, but the latest survey adopted a multiple-visits approach, aimed at improving the quality of responses.

4.   **Impact on Non-Food Reporting:** This led to a sharp increase in reported non-food items consumption in 2022-23 due to improved reporting.

The poverty rates calculated:

●   Initially, poverty rates were calculated based on calorie intake, but dissatisfaction with this method led to new guidelines by the Tendulkar Committee, which didn't focus solely on calories.

●   In 2012, the Planning Commission, guided by the Rangarajan Committee, suggested a broader approach, including food, clothing, and other essential needs to define the poverty line.

●   **Use of Price Indexes:** Consumer Price Index is used to update the base year poverty line across studies, ensuring adjustments for inflation.

The data show about poverty reduction under different governments:

●   **UPA Period (2004-2011):** Poverty decreased from 37.2% to 21.9%, averaging an annual decline of 2.2 percentage points.

●   **NDA Period (2011-2022):** Poverty fell from 21.9% to about 6%, with an average annual reduction of 1.6 percentage points.

It hard to determine which government reduced poverty more:

●   **Temporal Misalignment:** Data collection periods do not coincide exactly with the terms of UPA or NDA, making direct comparisons difficult.

●   **Changing Survey Methods:** Differences in survey methodologies, such as the shift to MMRP and multiple-questionnaire use, affect data comparability.

- **Impact Delay:** Anti-poverty measures take time to show results, so effects may not align with the government's tenure.
- **Near-Poverty Reduction Challenges:** As poverty rates decline, reducing them further becomes more difficult, complicating percentage comparisons.
5. **Inflation Adjustments:** Different approaches to updating poverty lines with the Consumer Price Index can lead to varied estimates, influencing perceived effectiveness.

Mainspoint:The changes in survey methods in the 2022-23 Household Consumption Expenditure Survey impacted the reported consumption of non-food items in India.

2. Trafficking of Young Born Children .

Context:

The article highlights the issue of the recent inter-State baby smuggling racket busted by the Telangana police. An inter-State gang smuggled children from Delhi and Pune and sold them to prospective parents in Telangana and Andhra Pradesh.

The reasons behind the inter-state baby smuggling:

- Criminal activities are often driven by a combination of socio-economic factors, such as poverty, wealth, and unmet needs or desires.

1) **Supply Side: –**
   A) Poverty often compels biological parents to sell their newborns for meager sums.
   B) Newborns are also smuggled from government hospitals with lax security.

2) **Demand Side: –**
   A) Childless couples are eager to have children but face long waiting times (2-4 years) for legal adoption of children under two years.
   B) The shortage of babies available for adoption has led to the demand seeking illegal supply avenues.

The way forward:
1) **Poverty Alleviation: –**
   A) The government should undertake effective poverty alleviation schemes
   B) There should be the creation of employment opportunities for youth.

2) **Adoption Reforms: –**
   A) The government should generate awareness about adoption schemes for biological and adoptive parents.
   B) The government should remove unnecessary bureaucratic processes in adoption.

3) **Law Enforcement:** Ensure effective policing to nip such plots in the bud Children should not be treated as goods to be bought from the open market when there is a shortage.

Mains point:The reasons behind the inter-state baby smuggling? What steps can be taken to address these issues.

3. Importance of Healthcare Cost Management.

Context:

The article emphasizes the urgency of addressing healthcare costs and ensuring equitable access to medical services in India. With rising health disparities, sustainable and fair healthcare policies are crucial.

The role of private hospitals in driving innovation:

- Private hospitals, particularly those accredited by organizations like JCI and NABH, serve not only as centers of specialized care but also as hubs for innovation, investing in advanced

technologies like telemedicine to enhance patient outcomes.

The concerns regarding price caps in healthcare:

1) **Implementing uniform price caps** could greatly reduce healthcare quality. Research indicates that hospitals facing financial strain due to these caps experience a 15% rise in patient dissatisfaction.

2) Such caps could significantly hinder the advancement of new treatments and technologies, particularly in critical areas like cancer research and robotic surgery, which require substantial investment.

3) **Properly implemented rate standardization** can alleviate healthcare disparities. However, they should not destabilize providers' economic health.

The way forward:

1) **Pricing Models**- There is a need to employ dynamic pricing models that change depending on how complex the medical issue is and the patient's financial situation. Thailand's system, which looks at how much patients earn and how necessary the treatment is, could be a good example for India's diverse economy.

2) **Addressing Legal and Regulatory Challenges**– Legislative reform is necessary to accommodate local conditions and support rate standardization. States like Rajasthan and Tamil Nadu are advocating for robust legal frameworks to address gaps in rate fixation provisions.

3) **Leveraging the Role of Technology**– Technology, such as artificial intelligence and telemedicine programs, can make healthcare more available and affordable, particularly in distant regions, while advancements like mobile health applications can be useful in handling long-term health conditions beyond hospital settings. For ex- telemedicine initiatives in Karnataka that have reduced hospital visits by 40%.

4) **Stakeholder Engagemen**t- There is a need to engage all stakeholders, including private healthcare providers, to understand the nuanced dynamics and craft effective, sustainable policies.

5) **Data-driven policymaking –** The government needs to prioritize data-driven policymaking. They should use data analysis and predictions to decide on rates and understand how they'll affect healthcare innovation and accessibility in the long run.

6) **Establish Public-Private partnerships-** There is a need to allocate government subsidies to support research and development in private hospitals and establish public-private partnerships to integrate cutting-edge technologies in public hospitals.

7) **Pilot projects-**The government can implement pilot projects to gauge the impact of rate caps on healthcare quality and innovation.

Mains point:The concerns regarding price caps in healthcare? What steps can be taken to address this.

4. Women-led philanthropy will improve the act of giving"

Context:

The article discusses the growing impact of women in philanthropy in India. It highlights how women like Melinda French, MacKenzie Scott, and Rohini Nilekani are using their wealth to support various causes.

The key women leaders in philanthropy:

Global Leaders in Philanthropy:

- **Melinda French:** After divorcing Bill Gates, she founded Pivotal Philanthropies Foundation and plans to focus on gender development with a budget of $12.5 billion.

- **MacKenzie Scott:** Post-divorce from Jeff Bezos, she distributed $16.6 billion to over 2,000 NGOs with a 'no strings attached' policy, making a significant impact on global philanthropy.

Indian Leaders in Philanthropy:

- **Rohini Nilekani:** Independent of her family's Infosys wealth, she has led significant philanthropic efforts, focusing on environmental and climate change issues.
- **Rajashree Birla:** Continued the Birla family's philanthropic legacy by leading CSR initiatives after her husband's death.

The reason for increasing women-led philanthropy:

- **Financial Independence:** Women now have more financial autonomy due to ownership stakes in companies. This shift allows them to redistribute wealth as they wish, influenced by pioneers like Rohini Nilekani and Rajashree Birla.
- **The emergence of women billionaires** like Savitri Jindal, Rohiqa Cyrus Mistry, and Rekha Jhunjhunwala has indeed boosted women-led philanthropy significantly
- **Inspirational Role Models:** Figures such as Melinda French, MacKenzie Scott, and Rohini Nilekani demonstrate impactful, independent philanthropy, inspiring other women to follow suit.
- **Government and Industry Support:** Organizations like the Confederation of Indian Industry help channel CSR funds, often led by women, fostering a supportive environment for philanthropic activities.

The benefit of women-led philanthropy:

- **Innovative Giving Approaches:** MacKenzie Scott's "no strings attached" policy allowed NGOs full control over the funds, challenging traditional restrictive practices.

- **Direct Impact on Societal Challenges:** Women tend to focus on complex issues with greater accountability. A 2024 Bain and Company-Dasra study shows women donate a larger portion of their wealth to directly achieve better outcomes.
- **Role Model Effect:** Leaders like Rohini Nilekani inspire other women, creating a multiplying effect that encourages more female involvement in philanthropy.
- **Increased Accountability:** Women show a higher degree of responsibility in fund usage, leading to more effective and impactful philanthropic activities.

Mains point:The factors that have contributed to the rise of women-led philanthropy in India.

5. **Findings of National Achievement Survey (NAS) 2021**

Context:

The article discusses the importance of not just access to education but also its quality. It highlights disparities in educational outcomes across Indian states and suggests solutions like better teaching practices and targeted interventions to improve learning outcomes for all students.

The main findings of the National Achievement Survey (NAS) 2021:

- **Decline in Performance:** Compared to NAS 2017, student performance has declined significantly across grades.
- Class 3 scores dropped by 3.9% in Language, 4.7% in Mathematics, and 4.4% in Environmental Studies (EVS).
- Class 10 scores fell by 13.4% in Mathematics, 18.6% in Science, and 9.1% in Social Science.
- **Disparities Across States:** States like Punjab, Rajasthan, and Haryana excel, while Meghalaya, Mizoram, Nagaland, and Chhattisgarh lag behind.

- **Performance Drop with Progression**: Scores decline as students advance from Class 3 to Class 10.
- Language scores fell from 64.6% in Class 3 to 52% in Class 10.
- Mathematics scores dropped from 61.2% in Class 3 to 44% in Class 10.

There declines in performance:

- **Shift in Assessment Style:** The move from rote learning to competency-based assessments challenges students not used to this approach.
- **Impact of COVID-19 Pandemic:** Disruptions in regular schooling due to the pandemic contributed significantly to learning losses.
- **Inadequate Foundational Learning:** Students' foundational skills in early grades are not strong enough, leading to compounded difficulties in higher grades.
- **Insufficient Reinforcement of Concepts:** According to Jerome Bruner's Spiral Curriculum Theory, a lack of regular revisitation and reinforcement of core concepts leads to gaps in knowledge as students' progress.

The National Curriculum Framework (NCF) for School Education 2023 address quality disparities:

- It aims to define learning standards clearly and systematically align educational goals with measurable outcomes, supporting the core vision of the NEP 2020.
- By detailing specific learning outcomes, the NCF allows for precise assessment and targeted interventions, which help educators identify and close learning gaps effectively.
- The framework includes operational guidelines for adapting learning outcomes to different contexts and customizing teaching strategies, ensuring that all students meet set competencies.

- These measures contribute to reducing educational quality disparities, as highlighted by the disparities in NAS 2021 data.

Way forward:

- **Strengthen Foundational Learning:** The NEP 2020 aims to ensure all children achieve foundational literacy and numeracy by Grade 3, with an emphasis on a shift from rote learning to holistic, integrated, and experiential learning approaches.
- **Enhance Teacher Training:** The NEP 2020's focus on continuous professional development and the establishment of National Professional Standards for Teachers to elevate teaching quality.
- **Use Data-Driven Approache**s: Utilize NAS data to identify and address specific areas where students are underperforming, ensuring targeted interventions.
- **Promote Competency-Based Education:** The NEP 2020 promotes shifting from memorization to competency-based education, ensuring students master essential skills before moving on to more advanced topics.
- **Engage Community and Parents:** Actively involve parents and communities in the educational process, making them partners in improving education.
- **Align State Policies with NEP 2020:** Ensure that state education policies support the goals of NEP 2020, particularly around foundational learning and teacher training.
- **Implement Bloom's Mastery Learning:** Emphasize mastery of lower-order cognitive skills before advancing to higher-order thinking skills. This approach ensures that students fully understand the material at each stage of their education before moving on to more complex concepts.

Mains point:The key factors contributing to the decline in student performance, and what should be done to address this.

6. The ageism debate: India will gain from raising the retirement age.

Context:

The article discusses how both young and older workers in India face age-related discrimination at work. It highlights how such issues might grow as India's population ages. It suggests considering raising the retirement age to utilize the experience of older workers more effectively.

The Demographic Projection for India:

● The UN Population Fund projects a sharp rise in the elderly population's growth rate, from 35.5% (2011-21) to 41% (2021-31). By 2046, the elderly population will surpass children under 15 years.

Age-Related Discrimination in Indian Workplaces:

● **Prevalence**: 40% of employees experienced or witnessed age-related discrimination.

● **Younger vs. Older Workers**: 42% of employees below 55 faced discrimination, compared to 29% of those over 55.

● **Compensation Issues**: 32% of employees under 35 feel inadequately compensated.

● **Job Advertisements**: 61% report age or experience criteria in job ads, with multinationals leading this trend.

● **Gender Disparity:** 42% of women report discrimination, compared to 37% of men.

India's Retirement Age Compare Globally:

● India's retirement age is 58-60 for most workers, with 70 for whole-time directors and 75 for non-executive directors.

● Advanced countries like Iceland, Australia, Spain, and Italy set retirement ages at 66-67.

● France faced protests over proposals to raise the pension age from 62 to 64.

● Singapore recently raised the retirement age from 63 to 64 and the re-employment age from 68 to 69.

Way forward:

● **Raise Retirement Age:** Increase the retirement age to benefit from older workers' experience. India's current retirement age is 58-60 years, while countries like Iceland and Australia set it at 66-67 years.

● **Prepare for Demographic Changes:** Plan for an ageing population. The UNPF projects the elderly population will surpass children by 2046, necessitating policy adjustments.

Mains point:The potential impact of raising the retirement age in India on addressing age-related discrimination and leveraging the experience of older workers in the workforce.

7. Impact of misinterpretation of the Special Marriage Act (SMA)

Context:

The article discusses a case where the Madhya Pradesh High Court incorrectly applied Muslim personal law instead of the Special Marriage Act (SMA), which allows inter-faith couples to marry legally without religious rituals. The court wrongly questioned the validity of an inter-faith marriage under Muslim law, even though the SMA should have been the only relevant law.

The Special Marriage Act Say:

● The SMA allows inter-faith couples to marry legally without following their religious marriage rituals. The act is designed to help couples who come from different religions to marry in a

secular manner, without needing to convert.

The court misinterpret the law:

- **Irrelevance of Personal Law in SMA:** The judge questioned the validity of the marriage under Muslim law, which is irrelevant when a couple opts for the SMA, designed to supersede personal religious laws.

- **Ignoring the Act's Purpose:** The SMA's purpose is to enable secular, inter-faith marriages without the need for religious conversion or compliance with the specific marriage rituals of any religion. The court's focus on personal law contradicts this aim.

The impact of this misinterpretation:

- If this judgment is accepted, it could weaken the purpose of the SMA, making it ineffective for inter-faith couples who want a secular marriage.

- It might also slow down efforts toward a uniform civil code, which aims to standardize personal laws across all religions in India.

- This could lead to more people converting to another religion just to get married, which isn't the intention of the SMA.

Mains point:The misinterpretation of the Special Marriage Act by the Madhya Pradesh High Court could potentially impact inter-faith couples seeking legal recognition of their marriages in India.

8.   Issues and trends in India's higher education system

Context:

The article discusses the issues and trends in India's higher education system, focusing on the mismatch between student aspirations and available courses, leading to exclusion. It highlights the growing preference for empirically oriented social science courses and calls for improvements in teaching and course content to enhance quality. Issues and trends in India's higher education system

The current status of higher education:

- **Mismatch in Demand and Supply:** There's a significant imbalance between student aspirations and available higher education seats, leading to exclusions due to competition, financial constraints, and limited regional offerings.

- **Enrollment Growth: A**ccording to the AISHE report, undergraduate enrollment increased by 4.1% from 2017-18 to 2021-22, with postgraduate enrollment up by 5.9%. Specifically, the Bachelor of Arts (BA) program saw a 15% rise in enrollment, often becoming a default option for many excluded students.

The students excluded from higher education:

- **Excessive Competition:** Top institutions have strict selection processes. For example, multiple filtering rounds in premier colleges limit opportunities.

- **Financial Constraints: P**rivate institutions have high fees, often unregulated, making them inaccessible. Public colleges also charge more due to reduced government funding.

- **Regional Disparities: Som**e regions lack diverse courses. For instance, BA programs see a 15% increase, showing many students settle for generic options. This leads to a mismatch between student aspirations and available courses, affecting overall educational quality.

The trends are emerging in social sciences:

- **Increased Demand for Empirical Courses**: There's a growing preference for social science courses that focus on empirical analysis, like economics. This trend is driven by the higher employability of graduates from these courses compared to those from

traditional subjects like anthropology or sociology.

- **Specialization and Policy Skills**: Courses that offer specialized policy intervention skills are becoming more popular, reflecting a shift towards problem-solving approaches similar to those in engineering.

- **Rise of Private Universities:** Private institutions are drawing students to less demanded courses by offering high-quality education, making subjects like sociology and political science more attractive to the affluent segment.

Way forward:

- **Increase Course Offerings:** Address the demand-supply mismatch by expanding the number and variety of courses, especially in less represented regions.

- **Enhance Teaching Quality:** Prioritize improving teaching methods and course content.

- **Reduce Financial Barriers:** Make education more affordable to decrease financial exclusion. Private institutions' high fees create significant access issues.

- **Promote Balanced Development:** Encourage balanced growth in both public and private universities to ensure equal opportunities across different social science disciplines.

- Enhance the overall educational experience to meet the needs of a changing society and economy.

Mains point:The current challenges and emerging trends in India's higher education system.

9.   Dietary Patterns and Vegetarianism in India.

Context:

The article examines the dietary patterns in India, particularly focusing on the consumption of vegetables, fruits, pulses, and milk.

Key Findings from the Survey on Household Consumption Expenditure (2022-23):

- **Expenditure on Food Items: T**he average monthly per capita spending in rural India on vegetables (₹ 202.86), fruits (₹ 140.16), and pulses (₹ 75.98) is lower compared to milk and milk products (₹ 314.22). In urban India, the spending is higher on milk (₹ 466.01) than on vegetables (₹ 245.37), fruits (₹ 245.73), and pulses (₹ 89.99).

- **Regional Variations: Surprisingly, in "vegetarian" Rajasthan**, per capita expenditure on vegetables, fruits, and pulses is below the national average. In contrast, the Northeastern states have higher per capita vegetable consumption than Gujarat, known for its Vaishnav-Jain population.

- **Milk Primacy states:** States where the average household spends more on milk than on eggs, fish, and meat are primarily in North, West, and Central India. These include Gujarat, Rajasthan, Haryana, Punjab, Uttar Pradesh, Madhya Pradesh, Bihar, Maharashtra, and Karnataka.

- **Non-Vegetarian States:** States with higher expenditure on eggs, fish, and meat than on milk include Kerala, Goa, West Bengal, the Northeastern states, Odisha, Jharkhand, and Chhattisgarh. These states often have significant tribal populations and a cultural preference for non-vegetarian items.

India is lacto-vegetarian state:

- **Milk Consumption: Ind**ians are predominantly lacto-vegetarian, meaning they consume milk and dairy products even if they avoid other animal-origin products. This distinguishes them from vegans, who do not consume any animal products.

- **Nutritional Perspective:** Milk and dairy products are rich in essential amino acids that are lacking in plant-based

proteins. This makes milk a crucial part of the Indian vegetarian diet, ensuring nutritional adequacy.

Milk has been given Nutritional Significance in India:

● **Protein Source: Mil**k provides a balanced combination of essential amino acids that are crucial for human health. This makes it an important dietary component for those who do not consume meat, fish, or eggs.

● **Cultural and Nutritional Balance:** In India, milk is traditionally associated with purity and good health. It serves as a practical alternative to ensure nutritional balance in a predominantly vegetarian diet.

Mains point:Key Findings from the Survey on Household Consumption Expenditure (2022-23):

10.　CSIR-ASPIRE Scheme

Context:

300 women scientists to receive research grants for three years under the CSIR-ASPIRE scheme.

About CSIR-ASPIRE Scheme:

1. **About:** The ASPIRE scheme is an initiative by the Council of Scientific and Industrial Research (CSIR) to provide research grants to women scientists and technologists.

2. **Aim: T**he scheme aims to support women in conducting research in various fields of science and technology. The scheme also aims to promote and encourage women to participate in scientific research and technology development in India.

3. **Criteria:** The CSIR ASPIRE Women Research Grant is open to women scientists and technologists who are Indian citizens and have a PhD degree in any area of science or technology.

4. **The scheme is also open to women:**

i)　who have completed their PhD and have at least three years of research experience.

ii)　scientists and technologists who have taken a career break due to family responsibilities and want to resume their research careers.

Benefits of the ASPIRE Scheme:

1. **Financial Support: Th**e ASPIRE scheme provides research grants to women scientists and technologists for conducting research in various fields of science and technology.

2. **International Exposure:** The scheme also offers funding for international travel, enabling women scientists to attend conferences and workshops abroad, facilitating global exposure and collaboration.

3. **Participation in Research: Th**e CSIR ASPIRE Women Research Grant aims to promote and encourage women to participate in scientific research and technology development in India.

4. **Support for Underrepresented Areas:** The scheme focuses on supporting women in conducting research in areas where they are traditionally underrepresented, helping to bridge the gender gap in these fields.

About One Week One Lab initiative

1. The 'One Week One Lab' initiative is a countrywide campaign of the Council of Scientific and Industrial Research (CSIR) in India.

2. The campaign aims to showcase the technological breakthroughs and scientific innovations of CSIR labs across the country.

3. There are 37 CSIR labs dedicated to different areas of work, which will have an opportunity to present their achievements and inform stakeholders about their work.

Prelims point:CSIR-ASPIRE Scheme

MISCELLANEOUS ISSUES

1.   Manual of Tobacco Free Educational Institutions (ToFEI) .

Context:

Recently, the Ministry of Education launches the implementation Manual of ToFEI on World No Tobacco Day, 2024.

About Manual of Tobacco Free Educational Institutions (ToFEI):

Source: PIB

1.   It was launched on the occasion of World No Tobacco Day (WNTD) 2024.

2.   It was launched with the collaboration of the Department of School Education & Literacy (DoSEL), the Ministry of Education, and the Socio-Economic and Educational Development Society (SEEDS)

3.   This year's WNTD theme is "**Protecting children from tobacco industry interference".** The newly launched manual has been designed in line with the theme.

4.   **Manual Objectives:**

   a)   **Guidelines Adherence:** It assists schools in following the Manual of Tobacco Free Educational Institutions(ToFEI) guidelines issued by the Ministry of Health and Family Welfare

   b)   **Healthy Environment**: It aims to create a tobacco-free environment for students.

   c)   **Stakeholder Empowerment:** It encourages all stakeholders in adoption and enforcement of guidelines to protect students from tobacco dangers

5.   **Event Highlights:**

   a)   All dignitaries took an oath against tobacco use, committing to creating a healthier, tobacco-free future for the nation's youth.

   b)   Senior officials from the Ministry of Education, autonomous bodies, and States/UTs attended the event.

Prelims point:About Manual of Tobacco Free Educational Institutions (ToFEI):

2.   International Health Regulations (IHR) Amendments.

Context:

Recently, the 77th World Health Assembly approved a set of amendments to the International Health Regulations (IHR 2005). These amendments, based on 300 proposals from member countries following the Covid-19 pandemic, aim to enhance global health preparedness and response.

About the International Health Regulations (IHR) Amendments:

Source: PIB

1) **About:** The 77th World Health Assembly endorsed amendments to the International Health Regulations (IHR 2005).

2) **Objective:** The amendments enhance global readiness and response to Public Health Emergencies of International Concern (PHEIC) and Pandemic Emergencies (PE).

3) The amendments facilitate equitable access to health products and mobilize financial resources to help developing countries enhance their health systems under the IHR.

4) **Key Features of the Amendments:**
   i) Provisions for equitable access to health products during emergencies.
   ii) Strategies to mobilize financial resources to aid developing countries in building and maintaining necessary health capabilities.

5) The amendments were unanimously adopted on June 1, 2024, at the 77th World Health Assembly.

6) **Significance:** They represent steps toward greater equity and global solidarity, described as a "**gift to our children and grandchildren.**"

About 77th World Health Assembly (WHA):

1. **Event and Date:** The Seventy-seventh World Health Assembly took place in Geneva, Switzerland, from May 27 to June 1, 2024.

2. **Theme**: This year's theme was "All for Health, Health for All."

3. **Strategic Approval**: Delegates approved a four-year strategy with a budget of US$ 11.1 billion. The strategy aims to promote, provide, and protect health and well-being for all people.

4. **Focus Areas:**
   i) The strategy addresses critical issues such as climate change, aging, migration, pandemic threats, and equity.
   ii) It is designed to adapt to the changing geopolitical landscape, scientific advancements, and technological developments.

5. **Role of WHA:**
   i) The WHA serves as a platform for WHO Member States to discuss and shape leadership, priorities, budgets, and policies in global health.
   ii) It plays a vital role in influencing the direction of future health initiatives worldwide.

About the World Health Assembly:

1. It serves as the decision-making body of the World Health Organization.

2. **Membership:** WHA attended by delegations from all WHO Member States.

3. **Functions:**
   a) **Policy Determination:** It establishes the policies of the WHO.
   b) **Director-General Appointment:** It appoints the Director-General.
   c) **Financial Oversight:** It oversees financial policies and reviews and approves the proposed program budget.

4. **Annual Meeting:** The Health Assembly meets annually in Geneva, Switzerland.

Mains point:About the International Health Regulations (IHR) Amendments

3.   Colombo Process .

Context:

For the first time since its inception in 2003, India is chairing the Colombo Process.

About the Colombo Process:

Aspects   Description

About

The Colombo Process is a Regional Consultative Process that serves as a platform for managing overseas employment and contractual labor for Asian countries of origin.

Objectives Exchange of Information:

Members share experiences, lessons learned, and best practices for managing labor migration.

Consultation: The process involves consultations on challenges faced by migrants, countries of origin, and destination countries, with the aim of improving the well-being of overseas workers.

Optimization of Benefits: The goal is to maximize the developmental benefits from organized overseas employment and to enhance dialogues with destination countries.

Review and Monitoring: There is ongoing review and monitoring of the implementation of recommendations, and identification of further action steps.

Function

It acts as a forum for sharing best practices related to overseas employment.

Composition

The Colombo Process includes 12 Asian member states that are countries of origin for migrant workers.

Members

1.   The member countries are Afghanistan, Bangladesh, China, Cambodia, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam.

2.   India has been a part of the Colombo Process since its establishment.

Governance and Coordination

Decision-Making: Decisions within the Colombo Process are made by consensus and are non-binding.Coordination: The process is coordinated through the Permanent Missions of the member states at the United Nations in Geneva.

About International Organization for Migration (IOM)

1.   The International Organization for Migration (IOM) has been offering technical support to the Colombo Process since it began and functions as its Secretariat.

2.   **The process includes five Thematic Area Working Groups (TAWGs):**

i)   Skills and Qualification Recognition, led by Sri Lanka;

ii)   Fostering Ethical Recruitment, led by Bangladesh;

iii) Pre-Departure Orientation and Empowerment, led by the Philippines;

iv)   Remittances, led by Pakistan;
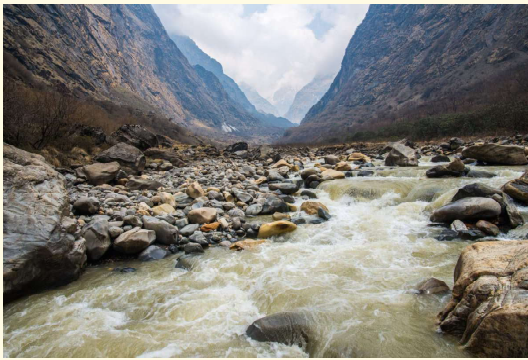
v)   Labour Market Analysis, led by Thailand.

Mains point:the Colombo Process

4.   Sunkoshi River.

Context:

Under the PLEASE (Plastic Free Rivers and Seas of South Asia) program, a river cleanup campaign has successfully removed 24,575 kg of waste from the Sunkoshi River banks and waste hotspots.

About Sunkoshi River:

Source: DD News

Aspects   Description

About

1. It is also known as the "**river of gold,**" the Sunkoshi is located in Nepal and is part of the Koshi or Saptkoshi River system.

2. This river is among the longest and most rafted in Nepal.

Course

1. The Sunkoshi originates from the Zhangzangbo Glacier in Tibet.

2. It merges with the Saptkoshi River and eventually joins the Ganga (known as the Ganges) in the Katihar district of Bihar, India.3. It drains into the Bay of Bengal in Bangladesh.

About Koshi River

Aspects   Description

About

1. The Koshi River is a transboundary river that flows through China, Nepal, and India.

2. It serves as a prominent tributary of the Ganges.

3. The Kosi River has earned the nickname "the sorrow of Bihar" due to its history of flooding and frequent alterations in its course as it flows from Nepal to Bihar

Course

1. It originates from the Tibetan Plateau and crosses the Himalayas and flows through the Mahabharat range and Siwalik hills.

2. It reaches the plains of eastern Nepal and finally meets the Ganges in Bihar, India.

3. The Kosi drains an area of 74,500 sq.km, with only 11,070 sq.km lying within Indian Territory. The Koshi River system drains about 45% of Nepal.

4. The Kosi River valley is bounded by steep margins, disconnecting it from other rivers such as the Yarlung Zangbo River, Mahananda River, Gandaki, and Ganga.

5. The Koshi River is known for its tendency to change course, often flowing westward. Over the last 200 years, it has shifted westwards by approximately 112 km, causing significant changes to agricultural land.

Tributaries

The Koshi River has seven major tributaries: Sun Koshi, Tama Koshi (or Tamba Koshi), Dudh Koshi, Indravati, Likhu, Arun, and Tamore (or Tamar).

Prelims point: PLEASE (Plastic Free Rivers and Seas of South Asia) program

5.   Dnipro.

Context:

A recent Russian missile attack on the central city of Dnipro injured seven people, including two children, and damaged civilian infrastructure.

About Dnipro:

1. **Dnipro is a city of regional significance** in the Dnipropetrovsk Oblast, eastern Ukraine. It covers an area of 409,718 square kilometers.

2. **The city is located along both banks of the Dnieper Rive**r, near its confluence with the Samara River.

3. **The city center** is on the right bank, which is part of the Dnieper Upland, while the left bank is part of the Dnieper Lowland.

4. **Dnipro is Ukraine's fourth-largest city,** following Kyiv, Kharkiv, and Odesa.

5. **Industrial Significance:**

    i) Dnipro is one of Ukraine's major industrial centers.

    ii) The city hosts numerous facilities for heavy industries, producing launch vehicles, rolled metal, cast iron, machinery, agricultural equipment, chemicals, and more.

About the Dnieper River

1. **The Dnieper River** is the fourth-longest river in Europe, after the Volga, the Danube, and the Ural.

2. **The river's name varies by language:** Dnepr in Russian, Dnipro in Ukrainian, and Dnyapro in Belarusian.

3. **Location:** It is located in Eastern Europe, the Dnieper River and its tributaries drain much of Belarus and Ukraine.

4. **Course:** The river originates in Russia, in the low Valday Hills, west of Moscow. It runs a total length of 1,368 miles (2,201 kilometers) through western Russia, Belarus, and Ukraine before emptying into the Black Sea.

5. **The Dnieper passes** through several urban centers, including Smolensk and Dorogobuzh in Russia; Mogilev in Belarus; and Kyiv, Cherkasy, Dnipro, and Zaporizhia in Ukraine.

6. **Tributaries**- The Dnieper River has approximately 32,000 tributaries, including notable rivers such as the Sozh, Desna, Trubizh, Bilozerka, Drut, Berezina, and Prypiat.

Prelims point:About Dnipro

6. **Mount Kanlaon.**

Context:

Recently, Mount Kanlaon on Negros island exploded sending a plume of ash, rocks and gases five kilometres.

Mount Kanlaon:

Source: PwC Philippines

About   Description

About

1. Mount Kanlaon is a stratovolcano located in the north-central part of Negros Island in the Philippines.

2. It is the highest mountain on Negros Island and the 42nd tallest peak on an island worldwide.

3. Kanlaon is one of the active volcanoes in the Philippines and is part of the Pacific Ring of Fire.

4. The volcano has several pyroclastic cones and craters.

Geological Features

1. The summit of Kanlaon features a broad, elongated caldera with a crater lake, and a smaller, more active crater to the south.

2. It is made up of tropical volcanic materials, including sheeted lava flows, lahar deposits, airfall tephra, and apron pyroclastic materials.

3. Mount Kanlaon is home to a wide variety of flora and fauna.4. The slopes of Kanlaon serve as

headwater catchments for major river systems on Negros Island.

Eruptions

1. Kanlaon has erupted several times since 1886.
2. These eruptions typically involve phreatic explosions of small to moderate size, producing minor ashfalls near the volcano.

About Phreatic Eruption

1. **A phreatic eruptio**n is a steam-driven explosion that occurs when water beneath the ground or on the surface is heated by volcanic activity.
2. **Process:** The heated water begins to boil or can even flash into steam, causing an explosion. Phreatic eruptions can occur before, during, or after a more traditional volcanic eruption.
3. **Causes:** Groundwater near volcanic vents gets heated as magma rises to the surface, leading to these phreatic eruptions.

Prelims point:Mount Kanlaon

7. National Crisis Management Committee (NCMC) .

Context:

Recently, Union Cabinet Secretary chaired a meeting of the National Crisis Management Committee (NCMC). This is to review preparedness to deal with heat waves and forest fires.

About National Crisis Management Committee (NCMC)

Aspects	Description
About NCMC	It is a key committee involved in top-level decision-making for disaster management in India.
Composition of NCMC	Chairperson: The Cabinet Secretary.Members: Secretaries of various Ministries/Departments and agencies responsible for disaster management.

Role of NCMC

Crisis Management: It handles major crises with serious or national implications.

Disaster Preparedness: It reviews measures to ensure readiness for natural disasters.

Coordination: It coordinates relief efforts across different agencies and states.

Support: It provides logistic and financial support to state governments.

Preventive Measures: It ensures all necessary steps are taken to minimize damage and loss of life.

Prelims point: National Crisis Management Committee (NCMC)

8. Competition Commission of India (CCI).

Context:

Recently, The Competition Commission of India (CCI) has approved acquisition of Global Infrastructure Management, LLC by BlackRock Funding, Inc.

About Competition Commission of India (CCI):

Aspects	Description
About the CCI	The Competition Commission of India (CCI) is a statutory body of the Government of India responsible for enforcing the Competition Act, 2002.It was established in 2003.
Composition	A Chairperson and 6 Members appointed by the Central Government.
Headquarters	New Delhi.
Preceding agency	Monopolies and Restrictive Trade Practices Commission.

Mandate

It was established to prevent activities that have an adverse effect on competition, to promote and sustain competition in markets, to protect the interests of consumers, and to ensure freedom of trade in the markets of India.

Powers of Competition Commission of India (CCI):

1. **Inquiry and Investigation**: CCI has the power to inquire into any alleged contraventions of the anti-competitive agreements and abuse of dominant position. It can also investigate suo moto, or on receipt of a complaint from any person, consumer or their association, or trade association.

2. **Penalties and Orders:** After an inquiry, CCI can pass orders and impose penalties on companies found in violation of the Competition Act. It can direct parties to modify or terminate agreements and even impose monetary penalties based on the nature of the violation.

3. **Direction to Modify Practices**: CCI has the authority to direct enterprises to discontinue anti-competitive practices and not to re-enter such agreements.

4. **Division of Enterprises: In** extreme cases, CCI can order the division of a dominant enterprise to ensure that it does not abuse its position or form monopolies.

5. **Temporary Injunctions:** CCI can issue interim orders, temporarily restraining parties from continuing with anti-competitive practices during an investigation.

6. **Appeal:** Decisions or orders passed by CCI can be appealed to the National Company Law Appellate Tribunal (NCLAT), and further appeal lies with the Supreme Court of India.

Functions of CCI:

1. **Advocacy:** CCI engages in competition advocacy, creating awareness and imparting training on competition issues.

2. **Research and Monitoring: It** conducts studies and research, and monitors market practices and the operation of the competition laws in India.

3. **Consultation**: It consults with governmental and non-governmental entities on policies that may affect competition in the Indian market.

4. **Regulation of Combinations: C**CI regulates combinations (acquisition, acquiring of control, and Mergers and Acquisitions) through a process of notification to ensure that these combinations do not have an adverse effect on competition in India.

5. **Partnerships: C**CI collaborates with other regulatory authorities, enhancing the effective enforcement of the Competition Act.

6. **Training and Capacity Building:** CCI organizes training programs for its staff and other stakeholders to build capacity in dealing with competition issues.

Prelims point: Competition Commission of India (CCI)

9. **National Institute of Indian Medical Heritage (NIIMH)**

Context:

Recently, The World Health Organization (WHO) has designated the National Institute of Indian Medical Heritage (NIIMH), Hyderabad, as a WHO Collaborating Centre (CC) for **"Fundamental and Literary Research in Traditional Medicine" (CC IND-177).**

About NIIMH as Collaborating Centre for Traditional Medicine Research:

1. The World Health Organization (WHO) has designated the National Institute of

Indian Medical Heritage (NIIMH), Hyderabad as a WHO Collaborating Centre (CC) for **"Fundamental and Literary Research in Traditional Medicine" (CC IND-177).**

2. Duration: This recognition is granted for four years, starting from June 3, 2024.

3. India hosts approximately 58 WHO Collaborating Centres across various disciplines of biomedicine and allied sciences.

4. CCRAS-NIIMH, Hyderabad, is the third WHO Collaborating Centre in the domain of Traditional Medicine in India, alongside the Institute for Teaching & Research in Ayurveda, Jamnagar, and the Morarji Desai National Institute of Yoga (MDNIY), New Delhi.

5. As the first WHO Collaborating Centre for "Fundamental and Literary Research in Traditional Medicine," NIIMH will assist WHO in standardizing terminologies for Ayurveda, Unani, Siddha, and Sowa-Rigpa, and updating the Traditional Medicine Module-II for the Eleventh edition of the International Classification of Diseases (ICD-11).

6. The WHO Collaborating Centre will support Member States in developing research methodologies for Traditional Medicine.

About National Institute of Indian Medical Heritage (NIIMH):

1. NIIMH was founded in 1956.

2. It is located in Gaddiannaram, Dilsuknagar, Hyderabad. It was previously known as the National Center of Indian Medical Heritage (NCIMH).

3. It operates under the administrative control of the Central Council for Research in Ayurvedic Sciences **(CCRAS),** Ministry of AYUSH, Government of India.

4. It is dedicated to documenting and showcasing medico-historical research in Ayurveda, Yoga Naturopathy, Unani, Siddha, Sowa-Rigpa, Homoeopathy, Biomedicine, and related healthcare disciplines in India.

5. It is known for its extensive collection of research materials on the History of Medicine, making it accessible globally.

6. It supplies resource materials for historians, scientists, and researchers interested in the historical aspects **of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, Homoeopathy, and Sowa Rigpa) along with Modern Medicine.**

7. It is the only institution of its kind in Southeast Asia, dedicated to the medico-historical research of traditional and modern medicine.

8. NIIMH houses more than 500 physical manuscripts, alongside the Medical Heritage Museum and Library, featuring rare books and manuscripts dating back to the 15th century AD.
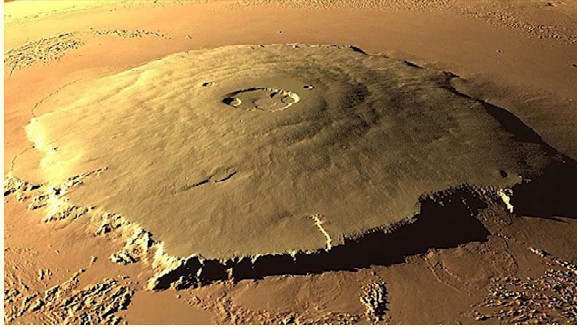
Prelims point: NIIMH as Collaborating Centre for Traditional Medicine Research

10. Olympus Mons.
Context:

Recently, Scientists have discovered frost on Mars' tallest volcano, Olympus Mons, revealing an active water cycle on the Red Planet.

About Olympus Mons:

1. Olympus Mons is a shield volcano situated in Mars' western hemisphere.

2. It is the highest point on Mars and the largest known volcano in the solar system, standing at 16 miles (24 kilometers) high, which is about three times taller than Mt. Everest.

3. Olympus Mons is 340 miles (550 kilometers) wide, covering an area larger than the entire chain of Hawaiian Islands.

4. Olympus Mons is approximately 3.5 billion years old, indicating it formed early in Mars' history. It has a very flat structure with slopes ranging from only 2 to 5 degrees.

6. The summit has a large depression called a caldera, spanning 50 miles (80 kilometers) wide. The summit caldera consists of several overlapping pits created by different eruptive phases. It has multiple pits.

About Shield Volcanoes

1. Shield volcanoes are the largest volcanoes on Earth.

2. They have broad, gentle slopes rather than soaring, conical peaks like composite volcanoes.

3. They are almost exclusively composed of basalt which is a type of lava that is very fluid when erupted.

4. **Shield volcanoes** are built by repeated eruptions over vast periods of time.

5. **Eruptions a**re usually low-explosivity, characterized by lava fountaining that

forms cinder cones and spatter cones at the vent. Eruptions can become explosive if water gets into the vent.

6. **Examples:** The Hawaiian shield volcanoes are the most well-known examples of this type of volcano.

Prelims point:Olympus Mons

11.   Global Gender Gap Report 2024
Context:

The World Economic Forum (WEF) has released the Global Gender Gap Report 2024, highlighting persistent gender inequality across various sectors worldwide.

About Global Gender Gap Report 2024:

1. The Global Gender Gap Report 2024 is published by the World Economic Forum.

2. It assesses gender parity across four key dimensions: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment.

3. It is the longest-standing index tracking the progress of numerous countries' efforts towards closing these gaps over time since its inception in 2006.

Key findings of the report

1. The global gender gap score for all 146 countries included in this edition stands at 68.5%.

2. Among the 101 countries continuously covered since 2006, the gap has also improved by +0.1 points to reach 68.6%.

3. Despite progress, no country has achieved full gender parity. However, 97% of economies included in this edition have closed more than 60% of their gender gap (compared to 85% in 2006).

5. **Top-Ranking Countries:**

   i) Iceland maintained its position as the most gender-equal country for

the 14th consecutive year, with a gender gap score of 91.2%.

ii) Norway, Finland, and Sweden also rank high, consistently placing in the top five.

About India's Performance

1. India is ranked 129 in this year's index. The ranking reflects a slight regression compared to the previous edition.

2. The decline is primarily due to small decreases in 'Educational Attainment' and 'Political Empowerment.' Despite the overall decline, there was a slight improvement in 'Economic Participation and Opportunity.'

3. India ranks the third-lowest among South Asian economies. India fares worse than Bangladesh, Nepal, Sri Lanka, and Bhutan.

Prelims point: Global Gender Gap Report 2024