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Science Reporter

TABLE OF CONTENTS

- Volcano in Iceland erupts after being preceded by thousands of earthquakes
- Sahitya Akademi announces awards; Requiem in Raga Janki best English work
- Bengaluru airport wins award at UNESCO's 2023 Prix Versailles
- India receives price bids for 26 Rafale jets, 3 submarines
- Centre approves deployment of CISF in Parliament complex
- Government aims to set up 17,000 creches across India
- China bans export of rare earth technologies
- Centre exploring one-stop health sector regulator
- UN approves watered-down resolution on aid to Gaza
- No extreme curbs for now, will wait for NCR air quality to improve: Central body
- Supreme Court rules that tribunals cannot direct government to frame policy
- A strategic choke point
- Chum Salmon Migration
- RTI:CERT-IN exemption
- Aspirational Block Programme
- Revanth govt. plans an onsite 'expose' into Telangana's Kaleshwaram project
- Tele communications Act gets Presidential assent
- India-ASEAN to rejig 15 year trade pact in early 2024
- India, Russia ink 'key' pacts related to Kudankulam nuclear power plant
- Ministry sends social media firms advisory to regulate deepfakes
- Ammonia leak in TN
- Japan's SLIM spacecraft
- Uighurs in Xinjiang
- Huntington's disease
- Union Minister fails to break stalemate over SYL canal
- 82nd annual Indian History Congress
- Women account for 49% of Ayushman cards, says Ministry
- Spectre of civil war in Sudan as civilians search for arms fearing rival militias
- Indian Navy's new insignia
- X-37B
- Argentina rejects BRICS membership
- India closing in on lithium deal with Argentina
- Census postponed again
- Babbar Khalsa International
- Indian Tamils in Sri Lanka
- PM Ujjwala Yojana

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13th December to 17th January, 2024	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Economics
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23rd May to 2nd June, 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024
3rd June to 5th July, 2024				Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance
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7th March to 10th April, 2023	Geography	Geography					
11th April to 15th May, 2023	Polity	Polity	Polity				
16th May to 16th June, 2023	Economics	Economics	Economics	Economics			
19th June to 21st July, 2023	Ethics + Governance	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India	Modern History + Post Independent India		
24th July to 25th August, 2023	Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management	Geography	Geography	Geography	Geography	
28th August to 3rd October, 2023	International Relations + World History	International Relations + World History	International Relations + World History	Polity	Polity	Polity	Polity
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13th December to 17th January, 2024	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Geography
18th January to 21st February, 2024	Focus Prelims	Ethics + Governance	Ethics + Governance	Ethics + Governance	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
22nd February to 27th March, 2024	Focus Prelims	Focus Prelims	Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management	Environment & Ecology + Science & Technology + Compulsory Language Paper	Environment & Ecology + Science & Technology + Compulsory Language Paper
28th March to 2nd May, 2024	Focus Prelims	Focus Prelims	Focus Prelims	Focus Prelims	Focus Prelims	Focus Prelims	Ancient India + Medieval India + Art & Culture
3rd May to 22nd May, 2024	Focus Prelims	Focus Prelims	Focus Prelims	International Relations	International Relations	International Relations	International Relations
23rd May to 2nd June, 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024
3rd June to 14th June, 2024				World History	World History	World History	World History
18th June to 22nd July, 2024					Ethics + Governance	Ethics + Governance	Ethics + Governance
23rd July to 27th August, 2024						Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management
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February (04, 05, 11, 12, 18, 19, 25 & 26) + March (04, 05 & 11)	Economics				
March (12, 18, 19, 25 & 26) + April (01, 02, 08, 09, 15 &16)	Polity	Polity			
April (23, 29 & 30) + May (06, 07, 13, 14, 20, 21, 27 & 28)	Geography	Geography	Geography		
June (03, 04, 10, 11, 17, 18, 24 & 25) + July (01, 02 & 08)	Modern History + Post Independent	Modern History + Post Independent	Modern History + Post Independent	Modern History + Post Independent	
July (09, 15, 16, 22, 23 & 30) + August (05, 06, 12, 13 & 19)	Environment & Ecology + Science & Technology + Compulsory Language Paper	Economics	Economics	Economics	Economics
August (20, 26 & 27) + September (02, 03, 09, 10, 16, 17, 23 & 24)	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Polity	Polity	Polity
September (30) + October (01, 07, 08, 14, 15, 21, 22, 28 & 29) + November (04)	Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management	Geography	Geography
November (05, 11, 18, 19, 25 & 26) + December (02, 03, 09, 10 & 16)	Ethics + Governance	Ethics + Governance	Ethics + Governance	Ethics + Governance	Modern History + Post Independent
December (17, 23, 24, 30 & 31) + January '24 (06, 07, 13, 14, 20 & 21)	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT	Internal Security + CSAT
January '24 (27 & 28) + February '24 (03, 04, 10, 11, 17, 18, 24 & 25) + March '24 (02)	Focus Prelims	Environment & Ecology + Science & Technology + Compulsory Language Paper	Environment & Ecology + Science & Technology + Compulsory Language Paper	Environment & Ecology + Science & Technology + Compulsory Language Paper	Environment & Ecology + Science & Technology + Compulsory Language Paper
March '24 (03, 09, 10, 16, 17, 23, 24, 30 & 31) + April '24 (06 & 07)	Focus Prelims	Focus Prelims	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture	Ancient India + Medieval India + Art & Culture
April '24 (13, 14, 20, 21, 27 & 28) + May '24 (04, 05, 11, 12 & 18)	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History	International Relations + World History
31st May to 11th June, 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024	PRELIMS 2024
June '24 (01, 02, 08, 09, 15, 16, 22, 23, 29 & 30) + July (06)				Social Issues & Social Justice + Essay + Disaster Management	Social Issues & Social Justice + Essay + Disaster Management
July '24 (07, 13, 14, 20, 21, 27 & 28) + Aug '24 (03, 04, 10 & 11)					Ethics + Governance
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POLITY

1. The Broadcasting Services (Regulation) Bill

Syllabus: GS-2, Statutory, Regulatory and various Quasi-judicial Bodies

Mains: Provisions of Broadcasting Services (Regulation) Bill and challenges associated with it

Evolution of Broadcasting Regulation: A Timeline
- **1997: The Genesis of Broadcasting Regulation**
  - Introduction of the Broadcasting Bill, aiming to establish a regulatory framework for cable and satellite broadcasting during the sector's infancy.
- **2007: The Previous Attempt**
  - The Broadcasting Services Regulation Bill made efforts to regulate broadcasting comprehensively.
- **2023: Broadcasting Services (Regulation) Bill**
  - The latest iteration in the continuous endeavour to regulate broadcasting in an integrated manner.

Positive Aspects of the Current Bill:
- **Subscriber Data and Audits:** Requires broadcasting entities to maintain subscriber data and undergo external audits for transparency.
- **Audience Measurement and Transparency:** Seeks a methodology for audience measurement and data sale, enhancing transparency in the cable and satellite TV business.
- **Inclusion of Private Actors in Terrestrial Broadcasting:** Encourages competition for state broadcasters like Doordarshan but raises concerns about potentially diminishing supplier diversity.

Concerns and Apprehensions:
- **Inclusion of OTT Content Suppliers:** Expanding the definition of broadcasting services to include OTT content suppliers, sparking jurisdictional conflicts between ministries.
- **Impact on News Media:** Constricts conditions for journalists and news outlets not affiliated with large television networks, potentially limiting their professional pursuits.
- **Content Evaluation Committee:** Mandating an internal body for self-certification of news programming, raising feasibility, cost, and desirability concerns.

Silent Aspects and Key Omissions:
- **Ownership Issues:** Silence on cross-media and vertical ownership, impacting supplier diversity and viewpoints in the news marketplace.
- **Absence of an Independent Broadcast Regulator:** Lack of provisions for an independent regulator; instead, proposing a 'Broadcast Advisory Council' raises autonomy and capacity concerns.

Government Empowerment and Intrusive Measures:
- **Inspecting Broadcasters and Impounding Equipment:** Empowers the government to inspect broadcasters without prior intimation and impound their equipment.
- **Violation Consequences:** Violations lead to content deletion or modification, transmission cessation, and broad government leeway to curtail broadcasting in the "public interest."

Conclusion: The Bill's evolution needs to address omissions, revise intrusive measures, and refine positive provisions to safeguard press freedom and diversity in broadcasting.

Nut Graf: *The Broadcasting Services (Regulation) Bill strives to overhaul broadcasting regulations. While introducing transparency measures and permitting private actors in terrestrial broadcasting, it raises concerns regarding OTT inclusion, limitations on news outlets, and lack provisions for ownership scrutiny and an independent regulator, necessitating careful refinement for press freedom protection.*

2.   The role of special inquiry committees of Parliament

Syllabus: Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these.

Mains: About committees and their functioning, Issues with expelling M.P from Parliament

Prelims: Ethics Committee, Privileges Committee

Context: The Lok Sabha ethics committee suggests expelling Trinamool Congress MP Mahua Moitra for alleged unethical conduct, prompting debate on constitutional validity and democratic representation concerns.

Role of Ethics Committee:
- Constituted in 2000 to oversee the moral and ethical conduct of members in the Lok Sabha.
- Examines complaints against members by other members, outsiders through a member, or those referred by the Speaker.
- Conducts a prima facie inquiry before deciding to examine a complaint.
- Determines whether an act is 'unethical' without a specific definition.
- Submits a report to the Speaker for consideration by the House.
- Past instances include recommendations for suspension based on 'unethical' behaviour.

Privileges Committee:
- Privileges Committee or special enquiry committee examines the more serious accusations against a member.
- Investigates severe allegations, such as promoting business interests for financial gains or involvement in scandals like 'cash for query.'
- In 2005, a special committee probed the 'cash for query' scam involving 10 Lok Sabha MPs, recommending their expulsion.

Constitutional Validity of Expulsion:
- Article 101 of the Constitution outlines grounds for an MP's seat vacation but doesn't explicitly mention expulsion.
- **Conflicting Supreme Court judgments:** Raja Ram Pal versus Hon'ble Speaker (2007) upheld Parliament's power to expel members, while Amarinder Singh versus Special Committee, Punjab Vidhan Sabha (2010) deemed expulsion by State Assembly unconstitutional.
- Interpretations vary concerning whether expulsion aligns with democratic principles.

Privilege of the House vs. Democratic Representation:
- Balancing the House's privileges developed historically to protect it from authoritarianism and ensuring democratic representation is crucial.
- Serious allegations, like 'cash for query' against Mahua Moitra, raise questions about the proportionality of expulsion as punishment.
- Expulsion leaves citizens without representation until the next election or a bye-election, potentially impacting democratic rights.
- Parliamentary Committee proceedings lack the depth of a judicial case governed by the Evidence Act.

Suggested resolution: Establish fast-track courts for timely trials within 60 days for such cases. Conviction should result in disqualification under the Representation of the People Act, 1951, while acquitted members continue their House membership.

Nut Graf: *The parliamentary ethics committee, formed to oversee moral conduct, recommended the expulsion of an MP for alleged unethical behaviour. While privilege committees handle severe accusations, the constitutional validity of expulsion remains ambiguous. Balancing House privileges with democratic representation is crucial, raising questions about the proportionality of punishment and the continuity of constituent representation.*

3. Ethics committee v/s Privilege committee

Syllabus: Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these.

Prelims: Ethics Committee, Privileges Committee

Context: Recently, Lok Sabha Ethics Committee has initiated investigation over 'Cash for Query' allegations against a Member of Parliament (MP) accused of accepting bribes to ask questions in Parliament.

Lok Sabha Ethics Committee?
● Each of the two Houses of Parliament has an ethics committee. The ethics committee in Lok Sabha has 15 members. The ethics committee in Rajya Sabha has 10 members.
● The members of the Lok Sabha Ethics Committee are appointed by the Speaker for a period of one year.

History of Evolution of Ethics Committees
● **1996:** In 1996, Presiding Officer's Conference held in Delhi first mooted the idea of ethics panels for the two Houses (Lok Sabha and Rajya Sabha).
● **1997:** On 4th March 1997, the Vice President (and Rajya Sabha Chairman) K R Narayanan constituted the Ethics Committee of the Rajya Sabha to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it.
● **2000:** In 2000, an ad hoc Ethics Committee of Lok Sabha was constituted by the late speaker G.M.C. Balyogi on the recommendations of the Committee of Privileges.
● **2015:** In 2015, the Lok Sabha Ethics committee became a permanent Committee.

Functions of Lok Sabha Ethics Committees
● Lok Sabha Ethics Committee oversees the moral and ethical conduct of the members.
● Lok Sabha Ethics committee prepares a Code of Conduct for members, which are amended from time to time.
● Lok Sabha Ethics Committee examines every complaint relating to unethical conduct of a member of Lok Sabha referred to it by the Speaker and make such recommendations as it may deem fit

Procedure for handling of complaints by the Lok Sabha Ethics committee
● **Complaint's Origin:** The complaint against Lok Sabha MP can be initiated by another Lok Sabha MP only.
● However, any person can complain against any Lok Sabha MP. But this complaint can be submitted by only a Lok Sabha MP, along with evidence of the alleged misconduct, and an affidavit stating that the complaint is not "false, frivolous, or vexatious".
● If the Lok Sabha MP himself complains, the affidavit is not needed.
● **Speaker's Role:** The Speaker of the Lok Sabha can refer to the Committee any complaint of unethical behaviour against an MP.
● The Committee does not entertain complaints based only on media reports or on matters that are sub-judice.
● Prima Facie Inquiry and Report presentation
● The Committee makes a Prima Facie inquiry before deciding to examine a complaint.
● The committee makes its recommendations after evaluating the complaint.
● The Committee presents its report to the Speaker, who asks the House if the report should be taken up for consideration. There is also a provision for a half-hour discussion on the report.

What actions can be taken by the committee
● If the Ethics Committee finds merit in the complaint, it can make recommendations. The potential punishment it can recommend typically involves Suspension of the MP for a specified period.
● The House, which includes all MPs, ultimately decide whether to accept the committee's recommendation and determine the nature and extent of the punishment, if any.

Previous cases of Ethics committee
● In 2005, the two Houses adopted motions to expel 10 Lok Sabha MPs and one Rajya Sabha MP who were accused of agreeing to ask questions in Parliament for money. In Rajya Sabha, the complaint was examined by the House Ethics Committee which recommended suspension.
● However, the motion in Lok Sabha was based on the Bansal Committee's report, a special committee set up by the Speaker to examine the issue. The expelled MPs, demanded that the Bansal Committee's report be sent to the Privileges Committee, so that the parliamentarians could defend themselves.

Difference between Ethics Committee and Privileges Committee
● The work of the Ethics Committee and the Privileges Committee often overlap. An allegation of corruption against an MP can be sent to either body, but usually more serious accusations go to the Privileges Committee.
● The Ethics Committee can take up only cases of misconduct that involve MPs. The privilege committee can interrogate a non-MP also for actions that attack the authority and dignity of the House.

Significance of Lok Sabha Ethics Committee
● Advice and Guidance- The committee helps Members of Parliament understand and abide by the code of conduct required of them as elected officials by offering them advice and guidance on ethical issues.
● Investigation and Decision-Making- In cases where unethical conduct is established, the committee can recommend appropriate action or sanctions against the erring MPs, including suspension or expulsion from the Lok Sabha. This helps in ensuring that ethical decisions are taken by the MPs.
● 'Code of Conduct' as a guide map for the MPs- The 'code of conduct' devised by the committees provides clarity to the 'MPs in their conduct' to uphold the 'principle of transparency' and 'clarity and consistency'.

Issues with the committee's working
● Issues with the functioning of Ethics Committee- The term 'unethical conduct' has not been defined anywhere. It is left entirely to discretion of the committee to examine a particular act of conduct as ethical or unethical.
● Evolution of Ethical Standards- Ethical standards often evolve with time and a rigid view of these ethical standards by the Lok Sabha Ethics committee, limits the ability of the MP to adapt to changing norms and expectations.
● Referring the graft cases to the Ethics Committee instead of the Privileges Committee/Special committees- Complaints of MPs accepting money for parliamentary work are usually referred to the privileges committee or special committees appointed by the House for that purpose. Ex- Bansal Committee on the "cash for query case 2005". However, the present case of "cash for query" has been referred to the ethics committee. There are chances of partisanship in the investigation.

4.   Suspension of Members of Parliament

Syllabus: Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these.

Mains: Suspension of Members of Parliament

Context: Recently, 146 Members of Parliament (MPs) have been suspended during the winter session of Parliament 2023.
● MPs in both Houses faced suspension due to their disruption of Parliamentary proceedings in protest of the recent breach of security in Parliament.

Why do MPs disrupt Parliament?
As per the analysis done by political leaders, and presiding officers there is four main causes that lead to disruption:
● MPs do not have enough time to raise crucial issues.
● The government's lack of responsiveness
● Parties intentionally cause disturbance for political or publicity reasons.
● The failure to take immediate action against MPs who interrupt parliamentary proceedings.

Who Can Suspend a Minister of Parliament?
● The general principle is that it is the role and duty of the Presiding Officer i.e., Speaker of Lok Sabha and Chairman of Rajya Sabha to maintain order so that the House can function smoothly.
● In order to ensure that proceedings are conducted in the proper manner, the Speaker/ Chairman is empowered to force a Member to withdraw from the House.

What are the Rules Under Which the Presiding Officer Suspends MPs?

Rules of Procedure and Conduct of Business of Lok Sabha :
● **Rule 373:** Rules The Speaker can direct a member to withdraw immediately from the House if he finds the member's conduct disorderly.
● Members so ordered to withdraw shall do so forthwith and shall remain absent during the remainder of the day's sitting.
● **Rule 374:** The Speaker can name a member who disregards the authority of the Chair or abuses the rules of the House by persistently and wilfully obstructing the business thereof.
● And the member so named will be suspended from the House for a period not exceeding the remainder of the session.
● A member suspended under this rule shall forthwith withdraw from the precincts of the House."
● **Rule 374A:** Rule 374A was incorporated in the Rule Book in December 2001.
● In case of gross violation or severe charges, on being named by the Speaker, the member stands automatically suspended from the service of the House for five consecutive sittings or the remainder of the session, whichever is less.

Rules of Procedure and Conduct of Business of Rajya Sabha:
- **Rule 255:** The Chairman of Rajya Sabha is empowered under Rule 255 of its Rule Book to "direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately" from the House.
- **Rule 256:** Under this rule, the Chairman may "name a Member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing" business.
- In such a situation, the House may adopt a motion suspending the Member from the service of the House for a period not exceeding the remainder of the session.

What are the Drawbacks of the Suspension of MPs?
- The suspension of MPs in Parliament is a drastic measure that is taken to maintain the order and decorum of the House. However, it also has several disadvantages for the functioning of democracy, such as:
- It curbs the voice and representation of the people who elected the suspended MPs. It deprives them of their right to raise issues of public interest and hold the government accountable.
- It reduces the scope and quality of debate and discussion on important matters of legislation and policy.
- It undermines the role of the opposition as a constructive and responsible partner in the parliamentary process.
- It creates a trust deficit and animosity between the ruling and opposition parties.
- It erodes the spirit of cooperation and consensus-building that is essential for a healthy democracy.
- It sets a bad precedent and encourages the misuse of power by the majority party.
- It violates the norms and conventions of parliamentary democracy and weakens the institution of Parliament.
- The suspensions are a threat to the federal structure and the diversity of the country, as they affect MPs from different regions and parties.

Way Forward
- Ensuring that the government responds to the concerns and demands of the opposition in a timely and respectful manner, and avoids using suspension as a tool to suppress dissent or criticism.
- Strengthening the role and authority of the presiding officers to maintain order and discipline in the House, and imposing stricter penalties for MPs who violate the rules and norms of parliamentary conduct.
- Encouraging dialogue and consensus-building among different parties and groups on key issues, and avoiding confrontation and disruption as a means of protest or pressure.
- Enhancing the awareness and accountability of MPs towards their constitutional duties and responsibilities, and respecting the sanctity and dignity of the House.

5. 114 seats, migrant quota cleared for J&K Assembly

Syllabus: GS 2 – Polity

Prelims: About J&K Reorganisation (Amendment) Bill

Introduction
- The Lok Sabha recently approved the Jammu and Kashmir Reorganisation (Amendment) Bill, 2023, and the Jammu and Kashmir Reservation (Amendment) Bill, 2023.
- The former focuses on reserving seats in the upcoming J&K Assembly for Kashmiri migrants, individuals displaced from Pakistan Occupied Kashmir (PoK), and Scheduled Tribes.

Key Points from the Bills
- **J&K Reorganisation (Amendment) Bill**
  - Seeks to reserve seats in the new 114-seat J&K Assembly for Kashmiri migrants, PoK-displaced individuals, and Scheduled Tribes.
  - Increases the total assembly seats from 107 to 114.
  - Empowers the Lieutenant-Governor to nominate three members, including two from the Kashmiri migrant community and one representing PoK refugees.
- **J&K Reservation (Amendment) Bill**
  - Aims to replace the term "weak and underprivileged classes (social castes)" in the J&K Reservation Act, 2004, with "Other Backward Classes" as declared by the Union Territory.
  - Pertains to reservation in appointment and admission in professional institutions for Scheduled Castes, Scheduled Tribes, and other Socially and Educationally Backward Classes.

Government's Response to Terrorism Concerns
- Union Home Minister emphasised the implementation of a "zero-terror" plan formulated three years ago, assuring it will be fully executed by 2026 to address terrorism in J&K.
- Reservation for Kashmiri migrants in the assembly aims to amplify their voices and prevent crises.

6. Restoration of statehood & polls in J&K

Syllabus: Issues and Challenges Pertaining to the Federal Structure

Mains: Jammu and Kashmir Reorganisation (Amendment) Bill, 2023

Context: In the backdrop of Jammu & Kashmir's transformative political landscape, recent Lok Sabha amendments spark debate amid legal uncertainties, emphasising the urgency for democratic reinstatement and Statehood.

Story So Far in Jammu & Kashmir:
- **Elected Government Collapse (5.5 Years Ago):** The Governor's rule was imposed after the collapse of the elected government, leading to significant changes in the erstwhile State.
- **Article 370 Removal and Bifurcation:** Article 370, providing special status, was removed; the State bifurcated into Union Territories – Jammu and Kashmir, and Ladakh.
- **Constitutionality Under Question:** The legality of these changes, including Article 370 removal and bifurcation, remains under question, with the Supreme Court reserving its verdict.

Recent Amendment Bills Passed in Lok Sabha:
- **Jammu and Kashmir Reorganisation (Amendment) Bill, 2023:**
  - **Increase in Assembly Seats: Total seats increased from 107 to 114.**
  - **Scheduled Tribes Reservation:** Nine seats are reserved for Scheduled Tribes.
  - **Nomination Powers:** Lieutenant-Governor empowered for certain nominations.
- **Jammu and Kashmir Reservation (Amendment) Bill, 2023:**
  - **Change in Terminology:** Replaces "weak and underprivileged classes (social castes)" with "Other Backward Classes" as declared by the UT.
- **Timing of Amendments:** Amendment timing is questionable as it was introduced despite the Supreme Court's pending verdict on the legality of earlier changes.

Way Forward for Jammu & Kashmir:
- **Propriety and Supreme Court Verdict:**
  - **Waiting for Verdict:** Propriety suggests waiting for the Supreme Court's verdict on the legality of Article 370 removal and bifurcation before implementing further changes.
- **Involvement of Elected Representatives:**
  - **Importance of Inclusion:** Changes without the involvement of elected representatives may be perceived as fait accompli, alienating the citizens.
- **Restoration of Democratic Process:**
  - **Immediate Priority:** The first order of business should be the restoration of the democratic process by holding popular elections in Jammu & Kashmir.
- **Restoration of Statehood:**
  - **Citizens' Aspiration:** Addressing the citizens' sentiments by prioritizing the restoration of the Statehood of Jammu & Kashmir.
- **Addressing Long-Pending Issues:**
  - **Setting the Stage:** Holding elections and restoring Statehood should set the stage for addressing long-pending issues contributing to the persistence of militancy.
- **Avoiding Alienation:**
  - **Sensitivity Needed:** Recognizing the region's history and challenges, changes should be implemented in a way that does not alienate the citizens of Jammu & Kashmir.
- **Respecting Civil Liberties:**
  - **Ending Suspensions and Detentions:** Addressing the suspension of political and civil liberties, arbitrary arrests, communication shutdowns, and other restrictions imposed in the last five and a half years.

Nut Graf: In the aftermath of Jammu & Kashmir's significant political changes, including Article 370's revocation and bifurcation, recent amendments in Lok Sabha face scrutiny amidst pending Supreme Court verdicts. Concerns arise over changes made without elected representatives' involvement, highlighting the pressing need for democratic restoration, Statehood return, and addressing citizen alienation in this sensitive region.

7.   Article 370 judgment is a case of constitutional monism

Syllabus: Amendments in the Indian Constitution

Mains: Significance of abrogation of Article 370

Context: The Supreme Court's unanimous decision to uphold the abrogation of Article 370, more than four years after its implementation, signifies a case of constitutional monism, according to the author.
- While discussions have primarily centred around the implications for statehood, the essence of the matter lies in the special status of Jammu and Kashmir (J&K).

Federalism and Constitutional Sovereignty
- The judgment reflects a monist perspective by perceiving the Union Constitution as the exclusive repository of internal and external sovereignty.
- Contrary to the intricate power distribution envisioned by Article 370, the Court emphasizes a singular concept of sovereignty, sidelining the shared sovereignty model advocated by the J&K Constituent Assembly.
- The failure to recognize the nuanced nature of sovereignty in federal constitutions raises concerns about the impact on India's federal structure.

Contingency of Presidential Power
- Constitutional monism operates prominently in the Court's interpretation of Clause 3 of Article 370.
- The rejection of Article 370's permanence after the Constituent Assembly's dissolution neglects the contingent nature of presidential power.
- The Court's assertion that the President holds unbridled power to abrogate Article 370 contradicts the principles of federalism and constitutional democracy, says the author.
- The interpretation collapses the question of the nature of powers into the effect of powers, eroding the federal balance envisioned by the Constitution.

State's Views on Its Future
- The judgment's monist approach envisions popular sovereignty as a unified entity, dismissing the significance of an individual State's views in the context of reorganization.
- By asserting that Parliament can represent the entire nation's views, the Court places the popular sovereignty of a State's people beneath the overarching sovereignty of the entire nation.
- This poses a worrisome precedent, particularly considering J&K's historical threshold for reorganization, which was notably higher than other states.

Issues
- **Monist Approach:** The Court's reliance on constitutional monism undermines the intricate federal structure envisioned by Article 370.
- **Unbridled Presidential Power:** The interpretation of presidential powers as unbounded contradicts the principles of constitutional democracy and federalism.
- **Subordination of State's Views:** The Court's stance diminishes the significance of an individual State's views, potentially compromising the federal balance.

Way Forward
- **Reevaluate Constitutional Interpretation:** Encourage a more nuanced interpretation of the Constitution that respects the federal principles enshrined in Article 370.
- **Review Presidential Powers:** Reassess the scope of presidential powers, ensuring they align with the principles of checks and balances in a federal structure.
- **Empower State Views:** Recognize and uphold the significance of individual State views in matters of reorganization, safeguarding the principles of federalism.

Nut Graf: The Article 370 judgment, shaped by constitutional monism, raises critical concerns about its impact on federalism in India. The implications of this judgment extend beyond the specific case of Jammu and Kashmir, influencing the broader constitutional fabric of the country.

8.   Section 6A of Citizenship Act, 1955

Syllabus: GS 2- Polity

Prelims: About Section 6A of Citizenship Act of 1955

Introduction
- The Constitution Bench, headed by Chief Justice Chandrachud, is hearing petitions challenging Section 6A of the Citizenship Act, 1955, raised by indigenous Assamese groups.
- The Supreme Court has directed the Centre to file an affidavit on the estimated inflow of illegal migrants into India, particularly Assam.

Background on Section 6A of the Citizenship Act
- Section 6A, introduced after the 1985 Assam Accord, categorises immigrants from Bangladesh into three time periods.
  - Those entering before January 1, 1966, are deemed Indian citizens.
  - Those arriving between January 1, 1966, and March 25, 1971, can be registered as Indians under certain conditions.
  - Individuals crossing into India after March 25, 1971, are deemed illegal migrants and subject to deportation.
- Assamese groups argue that Section 6A, introduced after the 1985 Assam Accord, has attracted illegal immigration, impacting local rights and culture.

Supreme Court's Observations and Concerns
- Chief Justice Chandrachud highlighted the delicate balance needed between controlling illegal migration and ensuring due process of law.
- The court ordered the Govt. to submit an affidavit detailing the estimated inflow of illegal migrants post-March 25, 1971, and the steps taken to address illegal immigration.
- Questions were raised about the selective application of Section 6A only to Assam and not West Bengal.
- Concerns were also expressed by the parties that legislative policies like Section 6A create division, fostering an "us versus them" mentality.

9.   Reservation in Bihar

Syllabus: Indian Constitution- features, amendments, significant provisions and basic structure; Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure

Mains: Policies and constitutional provisions governing the allocation of reservations to various communities, impacting the federal structure of governance.

Context:
Bihar's recent approval of laws exceeding the 50% reservation limit for jobs and education sparks a legal debate, challenging Supreme Court norms and setting the stage for potential constitutional reconsideration.

Introduction
- On November 17, Bihar's Governor approved two laws increasing reservations in jobs and education to 75%, sparking a debate on the permissible limits of reservations in India.
- The laws include quotas for Scheduled Castes, Scheduled Tribes, Other Backward Classes, Extremely Backward Classes, and economically weaker sections (EWS).

The 50% Rule
- The Supreme Court has historically capped reservations at 50% of total seats/posts.
- The Mandal Commission case (Indra Sawhney, 1992) reaffirmed this limit, with exceptions for extraordinary circumstances, particularly for communities from remote areas or those socially marginalised.
- The 103rd Constitutional Amendment permits an additional 10% reservation for EWS, bringing the effective limit to 60% for total reservations.

Bihar's Laws and Constitutional Concerns
- Bihar's laws breach the 60% limit set by the Mandal case.
- The Bihar government must justify this breach by demonstrating that the communities benefiting from reservations are either from remote areas or socially marginalised.
- Chief Minister Nitish Kumar's justification based on the results of the caste census may face scrutiny, as the court has ruled that reservations should aim for "adequate" representation, not proportional to the population of reserved classes.

Other States and Legal Precedents:
- Chhattisgarh, Tamil Nadu, and several northeastern states have already surpassed the 50% limit, with Chhattisgarh at 72%, Tamil Nadu at 69%, and northeastern states at 80%.
- Lakshadweep has 100% reservations for Scheduled Tribes.
- Previous attempts by Maharashtra and Rajasthan to exceed the limit were struck down by the courts.

Legal Challenges and Future Implications
- Bihar's move follows other states in challenging the 50% limit, and legal challenges are anticipated.
- The validity of Bihar's laws may be brought to the Supreme Court, questioning the constitutionality of the 50% ceiling limit.
- The court's inclination to reconsider the limit entirely remains uncertain.

NutGraf:
Bihar's breach of the 50% reservation cap, justified by caste census results, prompts legal scrutiny. The move challenges established norms, potentially leading to Supreme Court reconsideration and broader constitutional implications.

10. On selecting Election Commissioners

Syllabus: Constitutional and non-constitutional bodies

Prelims: Election Commissioner

Mains: Issues in the Selection of Election Commissioners

Context: The Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Office and Terms of Office) Bill, 2023, recently passed by the Rajya Sabha, marks a significant development in the process of appointing key officials responsible for overseeing India's electoral process.
- This legislation introduces a new mechanism for appointing the Chief Election Commissioner (CEC) and the two Election Commissioners (ECs), addressing a legislative vacuum identified by the Supreme Court.

Issues with the Current System
- **Absence of Legal Framework:** The Constitution (Article 324) outlines the composition of the Election Commission of India. (ECI), but there has been no specific law addressing the appointment process, leading to a lack of independence.
- **Legislative Vacuum:** The Supreme Court, in response to a PIL, identified a legislative void lasting 73 years, emphasizing the need for an independent mechanism to ensure the ECI's autonomy.

Significance of the Supreme Court Ruling
- **Call for Independence:** The Supreme Court emphasized the importance of an independent Election Commission for safeguarding free and fair elections, drawing parallels with other institutions supporting constitutional democracy.
- **Interim Mechanism:** The court, using its powers under Article 142, proposed an interim measure: the appointment of CEC and ECs by a committee comprising the Prime Minister, Chief Justice of India (CJI), and Leader of the Opposition until Parliament enacts a law on the matter.

Proposed Law's Provisions
- **Structured Appointment Mechanism:** The Bill introduces a committee-based selection process, a departure from the previous executive decision.
- **Search Committee:** A search committee, led by the Minister of Law and Justice, will prepare a panel of candidates for the selection committee's consideration.
- **Selection Committee:** Comprising the Prime Minister, Leader of Opposition in the Lok Sabha, and a Union Cabinet Minister nominated by the Prime Minister, this committee will recommend candidates to the President for appointment.
- **Omission of CJI:** Notably, the proposed law omits the CJI from the selection process, contrary to the Supreme Court's interim directive.

Global Best Practices
- **Diverse Models:** Different democracies employ varied models for the selection and appointment of electoral body members.
- **Examples from South Africa, U.K., and U.S.:** In South Africa, the Constitutional Court President, human rights court representatives, and gender equality advocates are involved. The U.K. sees House of Commons approval, while U.S. appointments are made by the President and confirmed by the Senate.

Evaluation of the Proposed Bill
- **Move towards Committee-Based Selection:** While the Bill introduces a committee-based selection, concerns remain about its inclination towards the incumbent government.
- **CJI's Exclusion:** The exclusion of the CJI, recommended by the Supreme Court, raises questions about the proposed law's alignment with the principles of independence.

Nut Graf: The Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Office and Terms of Office) Bill, 2023, signifies a positive step towards a more structured and transparent appointment process.

11. One person, one vote, one value

Syllabus: Parliament and State Legislatures

Mains: Issues and challenges with Delimitation, the way forward related to it

Prelims: Provisions related to Delimitation

Context: Delimitation holds pivotal importance in democracy as it ensures equitable representation by adjusting constituency boundaries. It upholds the principle of one person, one vote, preventing unfair dilution of voting power and safeguarding minority interests for a more balanced and representative governance.

Provisions Related to Delimitation in Constitution:
- **Constitutional Basis:** Articles 81, 170, 327, 330, and 332 lay down the constitutional framework for delimitation.
- **Equal Representation:** The Constitution aims for equal political rights, emphasising the same population ratio for Lok Sabha and State Legislative Assembly constituencies.
- **Safeguards:** Provisions empower Parliament to enact delimitation laws, and an independent commission, led by a retired Supreme Court judge, is formed to avoid dilution.
- **Reservation:** Articles 330 and 332 ensure reserved seats for Scheduled Castes (SCs) and Scheduled Tribes (STs), a crucial consideration during delimitation.
- **Regular Revision:** Delimitation based on the decennial Census ensures ongoing efforts to maintain equality in vote value.

Delimitation Commissions So Far:
- **Historical Context:** Delimitation commissions were formed in 1952, 1962, 1972, and 2002, with each order adjusting constituency boundaries.
- **Legislative Changes:** The 42nd Amendment Act (1976) froze the 1971 Census figure for delimitation until after the 2001 Census.
- **Limits on Seat Increase:** The Delimitation Act of 2002 restrained the Commission from increasing seats but allowed boundary adjustments.
- **Recent Changes:** The fourth Delimitation Commission increased reserved seats for SCs and STs based on population growth.

Way to Distort Delimitation Process:
- **Quantitative Dilution:** Population growth disparities among states lead to unequal representation, evident in the significant variation in the value of votes.
- **Qualitative Dilution:** Gerrymandering tactics such as cracking, stacking, and packing can undermine the influence of minority votes, impacting their representation.
- **Historical Examples:** The National Commission and the Sachar Committee revealed instances where constituencies reserved for SCs had a Muslim majority, affecting Muslim representation in Parliament.

Way Forward:
- **Urgency of Delimitation:** Postponing delimitation may result in further deviation in the population-representation ratio, necessitating timely action.
- **Addressing Quantitative Dilution:** The next Delimitation Commission should consider the changing population dynamics and maintain fair representation.
- **Tackling Qualitative Dilution:** Strategies must be devised to prevent gerrymandering tactics, ensuring adequate representation for minorities.
- **Balancing State Interests:** While addressing population growth concerns, the interests of southern States should be safeguarded to prevent weakened parliamentary representation.

Nut Graf: Constitutional provisions mandate fair delimitation for equal representation in democratic processes. Historical delimitation commissions adjusted boundaries but faced challenges of quantitative (population variation) and qualitative (gerrymandering) dilution. Urging timely action, the focus lies on addressing these issues, ensuring equitable representation and safeguarding minority interests in the electoral landscape.

12. A blow for the rights of the legislature, in law-making

Syllabus: Issues and Challenges Pertaining to the Federal Structure

Mains: The Governor's role in assenting the bill passed by the Assembly

Context: Chief Justice D.Y. Chandrachud's redefinition of the Governor's power under Article 200 significantly impacts legislative processes and their execution.

Article 200 and Options Available to Governor:
- The inherent ambiguity of Article 200 led to divergent interpretations, particularly concerning the extent of the Governor's authority in assent withholding from bills passed by the State Legislature.
- **The lack of clarity raised questions:** Is the Governor's power to withhold assent absolute or discretionary?
- **CJI's Clarifications:**
  ○ Chandrachud's interpretation links the act of withholding assent directly to the immediate requirement of returning the bill for reconsideration.
  ○ This interpretation reshapes the understanding of the proviso, emphasizing that if the Governor chooses to withhold assent, prompt return of the bill for reconsideration becomes mandatory.
- **Impact on Legislative Authority:** This interpretation serves as a safeguard, curtailing the Governor's unilateral authority and bolstering the legislature's pivotal role in the law-making process.

Misuse of Governor's Discretion:
- Instances of Governors intentionally stalling bills, resulting in significant delays in State legislatures.
- The discretionary power previously wielded by Governors led to instances of arbitrary decision-making in withholding assent.

Supreme Court Opinion:
- The Supreme Court's stance emphasizes the need for Governors to promptly decide on Bills, disallowing undue delays.
- Upholding the significance of immediate action on Bills presented for assent, the Court underlines the importance of preserving the legislature's authority.

Issue of State Subject:
- The Constitution indirectly references the President's role in Article 254, stipulating that Bills on State subjects ought not to undergo the President's assent.
- It underscores the Governor's responsibility to ensure Bills align with constitutional principles without unilaterally resorting to Presidential scrutiny, maintaining a balance within their jurisdictional framework.

Way Forward:
- Governors are urged to refrain from forwarding Bills on State subjects for Presidential assent, preserving the integrity of the State legislative domain.
- Bills concerning concurrent subjects necessitate Presidential consideration solely in cases where conflicts with central laws arise.
- Governors should return Bills deemed unconstitutional for reconsideration, allowing courts to arbitrate legality and maintaining the sanctity of the legislative process.

Nut Graf: *In a landmark judgment, Chief Justice D.Y. Chandrachud's reinterpretation of Article 200 redefines the Governor's power, emphasizing prompt action on bills. The Supreme Court's stance safeguards legislative authority, curtails misuse, and clarifies the intricate interplay between state and federal considerations.*

13. Governor's legislative powers

Syllabus: GS 2 – Polity

Prelims: Governor's legislative powers

Context: Recently, the Supreme Court (SC) of India has stated when the Governor chooses to withhold assent to a Bill, it is mandatory for them to follow a specific course of action outlined in Article 200 of the Constitution.
- The key aspect of Article 200 is that it mandates the Governor to communicate their reasons for withholding assent and prompt the Legislature to reconsider the Bill.

Supreme Court's ruling
- If a Governor refuses to approve a Bill, they have to follow Article 200.
- The SC has held that if a Governor decides to withhold assent to a Bill, then he has to return the bill to the legislature for reconsideration.
- The Governor's withholding of assent without the necessary step of communicating the need for the Legislature to

reassess the Bill violates constitutional principles.
● The elected Legislature has the final say on the Bill, and the Governor's message doesn't force them to agree. That is, once the House re-passes the returned Bill, with or without amendments, the Governor has no choice but to grant consent.
● The ultimate authority to accept or reject a Bill lies with the elected Legislature, and the Governor's message does not bind the legislative body.

What are the Governor's Powers over Bills?
● **Article 200:**
   ○ Article 200 of the Indian Constitution outlines the process for a Bill passed by the Legislative Assembly of a State to be presented to the Governor for assent, who may either assent, withhold assent or reserve the Bill for consideration by the President.
   ○ The Governor may also return the Bill with a message requesting reconsideration by the House or Houses.
● **Article 201:**
   ○ It states that when a Bill is reserved for the consideration of the President, the President may assent to or withhold assent from the Bill.
   ○ The President may also direct the Governor to return the Bill to the House or Houses of the Legislature of the State for reconsideration.

Options available with the Governor
● He may give assent, or he can send it back to the Assembly requesting it to reconsider some provisions of the Bill, or the Bill itself.
● He may reserve the bill for the consideration of the president. The reservation is obligatory where the bill passed by the state legislature endangers the position of the state high court. However, the governor can also reserve the bill if it is of the following nature:
● Against the provisions of the Constitution
● Opposed to the DPSP
● Against the larger interest of the country
● Of grave national importance
● Deals with compulsory acquisition of property under Article 31A of the Constitution.
● Can the Governor withhold His Assent to a Bill in Exercise of His Discretionary Powers?
● While a plain reading of Article 200 suggests that the Governor can withhold his assent, experts question whether he can do so only on the advice of the Council of Ministers.
● The Constitution provides that the Governor can exercise his executive powers only on the advice of the Council of Ministers under Article 154.
● The larger question is why a Governor should be allowed to withhold assent when the Bill is passed by the Assembly.

What are the Issues with Pending Bills?

Delay in Decision-Making:
● The Governor's failure to take a decision on the Bills passed by the legislature leads to a delay in decision-making, which affects the effective functioning of the state government.
● When the Governor fails to make a decision on a Bill passed by the assembly, it delays the implementation of policies and laws.
● Undermines the Democratic Process:
● The Governor, who is appointed by the Centre, can use his powers to delay or reject Bills passed by state assemblies for political reasons, which undermines the democratic process.

Public Perception:
● The public often views pending Bills with the Governor as a sign of inefficiency or even corruption in the state government, which can damage the government's reputation.

Lack of Accountability:
● When the Governor withholds assent, he does not provide any reason for his decision.
● This lack of accountability undermines the principles of transparency and accountability in governance.

14. All India Judicial Service

Syllabus: GS 2 – Polity

Prelims: All India Judicial Service

Context: AIJS is a proposed centralized recruitment system for judges at the level of additional district judges and district judges across all states.

Details:
- AIJS aims to centralize the recruitment of judges, similar to the UPSC model, assigning successful candidates to states.
- Originating from Law Commission reports in 1958 and 1978, AIJS seeks to address structural issues like varying pay, faster vacancy filling, and standardized nationwide training.
- The idea was revisited in 2006 by the Parliamentary Standing Committee, supporting a pan-Indian judicial service.
- **Constitutional Basis:** Article 312 of the Constitution provides for the establishment of AIJS, similar to central civil services, upon a resolution by the Rajya Sabha supported by at least two-thirds of its members. However, Article 312 (2) states that the AIJS cannot include any post inferior to that of a district judge, as defined in Article 236.
- According to Article 236, a district judge can include a city civil court judge, additional district judge, joint district judge, assistant district judge, chief judge of a small cause court, chief presidency magistrate, additional chief presidency magistrate, sessions judge, additional sessions judge, and assistant sessions judge.
- **Current Status:** As of 2023, there is no consensus on AIJS due to diverging opinions among major stakeholders. The AIJS proposal remains an unimplemented initiative, highlighting the challenges in achieving consensus for its establishment.

Need for AIJS
- AIJS would ensure a uniform and high standard of selection and training of judges, enhancing the quality and efficiency of the judiciary.
- AIJS would fill the vacancies of judges in the lower courts, which are presently around 5,400 vacant positions in lower judiciary across the nation and pendency of 2.78 crore cases in lower judiciary primarily due to inordinate delay in holding regular exams by states.
- AIJS would increase the representation and diversity of judges from different regions, genders, castes, and communities, reflecting the social composition of the country.
- AIJS would reduce the scope for judicial or executive intervention in the appointments to the judiciary, ensuring the independence and accountability of the judges.
- AIJS would create a pool of talented and experienced judges who can be appointed to the higher judiciary, improving the career prospects and mobility of the judges.

How are District Judges Recruited Currently?
- The current system involves Articles 233 and 234 granting states the authority over the appointment of district judges, managed through State Public Service Commissions and High Courts, since HCs exercise jurisdiction over the subordinate judiciary in the state.
- Panels of HC judges interview candidates after the exam and select them for appointment.
- Article 233 deals with the appointment of district judges. Appointments of persons to be, and the posting and promotion of, district judges in any State shall be made by the Governor of the State in consultation with the High Court exercising jurisdiction over such State.
- Article 234 deals with the recruitment of persons other than district judges to the judicial service.
- All judges of the lower judiciary up to the level of district judges are selected through the Provincial Civil Services (Judicial) exam. PCS (J) is commonly referred to as the judicial services exam.

What are the Concerns Regarding AIJS?
- It would infringe upon the federal structure and the autonomy of the states and the high courts, who have the constitutional right and responsibility to administer the subordinate judiciary.
- It would create a conflict of interest and a dual control over the judges, who would be accountable to both the central and the state governments.
- It would disregard the local laws, languages, and customs of the different states, which are essential for the effective functioning of the judiciary.
- It would affect the morale and motivation of the existing judicial officers, who would be deprived of the opportunities and incentives for their career advancement.

Way forward
- Facilitate dialogues and consultations with states, high courts, and legal experts to address concerns and garner support for AIJS.
- Consider implementing AIJS on a pilot basis in select states to assess its impact and address concerns gradually.
- Design AIJS with flexible mechanisms allowing adaptation to local laws, languages, and customs, ensuring effective functioning without disregarding regional nuances.

- Propose a well-defined transition period during which existing judicial officers can seamlessly adapt to the new system, minimizing disruptions.
- Establish a periodic review mechanism to assess the impact of AIJS on federal structure, autonomy, and the effective functioning of the judiciary, making necessary adjustments as needed.
- Develop an incentive structure within AIJS that motivates and recognizes the contributions of existing judicial officers, addressing concerns about career advancement.

15. Special Category status for states

Syllabus: GS 2 – Polity

Prelims: Special Category status for states

Context: Recently, Bihar govt passed a resolution seeking Special Category Status (SCS) for the state.
- This demand comes in light of the revelations from the "Bihar Caste-based Survey, 2022," which unveiled that nearly one-third of Bihar's population continues to grapple with poverty.

Special Category Status (SCS)
- **Definition:** SCS is a classification conferred by the Central government to support the development of states facing geographical or socio-economic disadvantages.
- **Origins:** SCS was instituted in 1969, based on the recommendations of the 5th Finance Commission (FC).
- **Criteria:** Five criteria are assessed before granting SCS, including factors like hilly terrain, low population density, and economic backwardness.
- **Historical Allocation:** Initially, three states—Jammu & Kashmir, Assam, and Nagaland—were granted SCS. Subsequently, eight more states, including Himachal Pradesh and Uttarakhand, received this status.

Benefits of having SCS
- **Financial Assistance:** SCS states used to receive grants based on the Gadgil-Mukherjee formula, accounting for approximately 30% of total central assistance.
- **Devolution of Funds:** Post the abolition of the Planning Commission and the recommendations of the 14th and 15th FCs, SCS assistance has been subsumed into increased devolution of funds for all states (now 41% in the 15th FC).
- **Funding Ratio:** SCS states enjoy a favourable 90:10 Centre-State funding split for centrally sponsored schemes, compared to 60:40 or 80:20 for general category states.
- **Additional Incentives:** SCS states receive concessions in customs and excise duties, income tax rates, and corporate tax rates to attract investments.

Why Bihar's Demand for SCS?
- **Resource Challenges:** Bihar attributes its poverty and underdevelopment to limited natural resources, irregular water supply for irrigation, recurring floods in the north, and severe droughts in the south.
- **Industrial Shift:** The state's bifurcation led to the relocation of industries to Jharkhand, creating unemployment and investment voids.
- Per-Capita GDP: Bihar's per-capita GDP, at around ₹54,000, consistently ranks among the lowest in India.
- **Welfare Funding:** Chief Minister Nitish Kumar asserts that Bihar houses approximately 94 lakh poor families and that SCS recognition would generate about ₹2.5 lakh crore, crucial for funding welfare initiatives over the next five years.

SCS Demands from Other States
- **Andhra Pradesh:** Since its bifurcation in 2014, Andhra Pradesh has sought SCS due to revenue loss post-Hyderabad's transfer to Telangana.
- **Odisha:** Odisha's appeal for SCS underscores its vulnerability to natural disasters, such as cyclones, and a significant tribal population (around 22%).
- **Central Government's Response:** Despite these demands, the Central government, citing the 14th Finance Commission's report, which recommended against granting SCS to any state, has consistently rejected them.

Is Bihar's Demand Justified?
- **Criteria Fulfillment:** Bihar meets most SCS criteria but lacks hilly terrain and geographically difficult areas, crucial for infrastructural development.
- **Alternative Solutions:** In 2013, the Raghuram Rajan Committee proposed a 'multi-dimensional index' methodology instead of SCS, which could be revisited to address Bihar's socio-economic challenges effectively.

16. Ladakh's demand for 6th schedule inclusion

Syllabus: GS 2 – Polity

Prelims: 6th schedule

Context: Ladakh, the newly created Union Territory with a population of 2.74 lakh (2011 Census), has concerns regarding the protection of land, resources, and employment for the locals. The following are the main concerns for the demand for the inclusion in 6th schedule:
- The UT of J&K would have a legislature, the UT of Ladakh would not lead to administration of the region being completely in the hands of bureaucrats.
- The changed domicile policy in Jammu and Kashmir has raised fears in the region about its own land, employment, demography, and cultural identity.
- The UT has two Hill councils in Leh and Kargil, but neither is under the Sixth Schedule. Their powers are limited to collection of some local taxes such as parking fees and allotment and use of land vested by the Centre.

Inclusion of Ladakh in Sixth Schedule
- The National Commission for Scheduled Tribes recommended the inclusion of Ladakh under the Sixth Schedule, noting that the new UT was predominantly tribal (more than 97%), people from other parts of the country had been restricted from purchasing or acquiring land there, and its distinct cultural heritage needed preservation.
- Notably, no region outside the Northeast has been included in the Sixth Schedule. In fact, even in Manipur, which has predominantly tribal populations in some places, the autonomous councils are not included in the Sixth Schedule. Nagaland and Arunachal Pradesh, which are totally tribal, are also not in the Sixth Schedule.
- "Ladakh's inclusion in the Sixth Schedule would be difficult. The Constitution is very clear, the Sixth Schedule is for the Northeast. For tribal areas in the rest of the country, there is the Fifth Schedule. However, it remains the prerogative of the government — it can, if it so decides, bring a Bill to amend the Constitution for this purpose.

Recent Developments in Ladakh's Demand for Sixth Schedule
- The Ministry of Home Affairs has constituted a committee chaired by Minister of State for Home Nityanand Rai with the following terms of reference:
- To discuss measures to protect the region's unique culture and language taking into consideration its geographical location and strategic importance.
- To ensure protection of land and employment for the people of Ladakh.
- To discuss measures for inclusive development and employment generation in the region.
- To discuss measures related to the empowerment of the Ladakh Autonomous Hill District Councils of Leh and Kargil.
- To examine constitutional safeguards that could be provided to ensure the measures and protection detailed above.

Sixth schedule
- Sixth schedule to the constitution provides power to tribal communities to administer the tribal areas in Assam, Meghalaya, Tripura and Mizoram under the provision of article 244(2) and 275(1) of the constitution.
- Article 244 provides a special system of administration for certain areas designated as 'scheduled areas' and 'tribal areas.
- Article 275 makes provisions for statutory grants to be charged on Consolidated Fund of India. Such grants also include specific grants for promoting the welfare of the scheduled tribes or for raising the level of administration of the scheduled areas in a state.
- The Sixth Schedule under Article 244 provides for the formation of autonomous administrative divisions — Autonomous District Councils (ADCs) — that have some legislative, judicial, and administrative autonomy within a state.
- ADCs have up to 30 members with a term of five years, and can make laws, rules and regulations with regard to land, forest, water, agriculture, village councils, health, sanitation, village- and town-level policing, inheritance, marriage and divorce, social customs and mining, etc.
- The Bodoland Territorial Council in Assam is an exception with more than 40 members and the right to make laws on 39 issues.
- The Sixth Schedule applies to the North-eastern states of Assam, Meghalaya, Mizoram (three Councils each), and Tripura (one Council).

Sixth schedule advantages
- **Autonomous District Councils (ADC):** ADCs are bodies representing a district to which the Constitution has given varying degrees of autonomy within the state legislature. Each autonomous district council consists of 30 members, including nominated and elected members.
- **Autonomous region:** If there are different Scheduled Tribes in an autonomous district, it can be divided into autonomous regions.
- **Legislative Power:** ADCs are empowered to make legislative laws with due approval from the governor.
- **Limitation to power of Parliamentary or state legislature over autonomous regions:** Acts passed by Parliament and state legislatures may or may not be levied in these regions unless the President and the governor gives her or his approval.
- **Judicial powers:** councils can constitute village courts within their jurisdiction to hear trials of cases involving the tribes.

- **Regulatory power:** The district council can establish, construct or manage primary schools, dispensaries, markets, ferries, fisheries, roads and so on in the district. It can also make regulations for the control of money lending and trading by non-tribal. But such regulations require the assent of the governor.
- **Tax revenue collection:** The district and regional councils are empowered to assess and collect land revenue and to impose certain specified taxes. They can also receive grants-in-aids from the Consolidated Fund of India to meet the costs of schemes for development, health care, education, roads and regulatory powers to state control.

Sixth schedule issues
- **No Decentralisation of powers and administration:** For example, in Bodo Territorial Area districts, there is only district council which elects few people who enjoy unbridled power. Thus, units should be created that will represent people at all strata.
- **Legislative power of state over councils:** The laws made by the councils require the assent of the governor. This process has no time limits which delayed the legislation for years. Also, Para 12 (A) of the Sixth Schedule clearly states that, whenever there is a conflict of interest between the District Councils and the state legislature, the latter would prevail.
- **Conflict in discretionary powers of governor:** There are differing views over the discretionary power of governors with respect to the administration of these areas. Thus, conflict is there on the requirement of consultation of governor with council of ministers.
- **Lack of codification of customary law:** Customary laws need to be codified and brought into practical use to ensure protection of tribal cultural identity.
- **Lack of skilled professionals:** Almost all Councils do not have access to planning professionals which results in ad-hoc conceiving of development projects without proper technical and financial consideration.
- **Financial dependency:** Autonomous councils are dependent on their respective state governments for funds in addition to the occasional special package from the Centre. There is no State Finance Commission for recommending ways to devolve funds to District Councils and Regional Councils.
- **Lack of development:** Although 6th schedule was enacted to give more benefit to the people and bring fast paced development, yet due to no panchayats or parishad at people level, they have no power and money which non-6th schedule areas have for implementation of various schemes like MGNREGA etc.
- **Corruption:** Financial mismanagement and rampant corruption have often been detected in the functioning of different Councils under the Sixth Schedule provision.

17. Grass-root democracy as a bulwark against Maoists

Syllabus: Devolution of Powers and Finances up to Local Levels and Challenges Therein

Mains: Challenges with PESA and its giving space to Maoists

Prelims: Provision of PESA

Context:
- Tribal votes played a significant role in the Assembly elections in Chhattisgarh due to their substantial population (34% vote share).
- Maoist insurgency, primarily in Bastar, heavily affects tribal regions, influencing electoral dynamics.
- Maoist strongholds, designated as Schedule Five areas, witness low voter turnout due to violence and Maoist boycott calls during elections.

Democracy in Maoist Areas:
- Voter turnout in Maoist-affected regions like Bijapur and Konta plummeted to as low as 3% to 4%, reflecting underlying issues.
- Maoists, advocating for the people's cause, paradoxically coerce locals to abstain from participating in the democratic process through boycotts, revealing a disconnection from their claimed objectives.
- The 'jantana sarkar' (parallel government) established by Maoists lacks long-term viability and faces scepticism from local tribes, yet the state hasn't sufficiently inspired them to engage in the democratic process.

About PESA (Provisions of the Panchayats Extension to Scheduled Areas) Act:
PESA, enacted in 1996, empowers Gram Sabhas to govern socio-economic aspects within tribal communities.
- **Key provisions:**
  - Grants Gram Sabhas authority over local resources, land management, and social justice.
  - Recognizes tribal customary laws and cultural practices.
  - Ensures the safeguarding of community resources and prevents their exploitation.
  - Offers autonomy in planning and executing development programs at the grassroots level.
  - Directs state governments to issue policy directives for effective implementation.

Issues with PESA:
- Despite enactment, states have inadequately implemented PESA, undermining its intended empowerment of tribal communities.
- The partial execution of PESA has allowed Maoists to exploit governance gaps, reinforcing their influence through 'jantana sarkar' in strongholds.
- The lack of clear policy directives and half-hearted implementation have hindered PESA's potential to empower tribes and bridge the democratic gap.

Way Forward: Nurturing Tribals
- Disillusionment among tribal electorates regarding political representation and fulfilment of constitutional rights calls for a reevaluation of strategies.
- Empowering tribal leadership and acknowledging their voices within governance structures can combat political absenteeism and address the Maoist challenge.
- The focus should shift from short-term security measures to long-term democratic empowerment that recognizes and advocates for tribal aspirations, thereby challenging the Maoists' false claim as champions of tribal causes.

Nut Graf: *In Chhattisgarh's recent elections, low turnout in Maoist regions highlights democratic disengagement. Partial implementation of PESA amplifies tribal disillusionment. Empowering grassroots democracy, addressing tribal aspirations, and implementing PESA are vital to counter Maoist influence.*

18. The hollowing out of the anti-defection law

Syllabus: Parliament and State Legislatures—Structure, Functioning, Conduct of Business

Mains: Need to amend the 10th Schedule in the backdrop of rising its misuse

Prelims: Provision of 10th Schedule

Context: Maharashtra Assembly Speaker, Rahul Narwekar, managing the winter session while dealing with disqualification petitions against Shiv Sena factions, highlights the ongoing challenge of political defections.

Provision under Anti-Defection Law:
- Enshrined in the Tenth Schedule of the Constitution, the law aims to curb floor-crossing by legislators.
- Disqualifies elected members for voluntarily switching parties or voting against party directives.
- Prior to 2003, a split in the original party where one-third moved out exempted members from disqualification.

Dodging of Anti-Defection Law:

Chinks in the Armour:
- Despite the law, political defections persist, causing the downfall of democratically elected State governments in Maharashtra, Madhya Pradesh, Manipur, Karnataka, and Arunachal Pradesh.
- Shiv Sena and NCP factions strategically used exemptions, claiming to be the original party and forging alliances to join or form ruling governments.

Splits Followed by Mergers:
- Survey reveals a trend of "splits followed by mergers," where legislators separate, form groups, take advantage of exemptions, and then merge with other parties.
- Instances in Uttar Pradesh and Haryana show MLAs jumping ships more than once, undermining the spirit of the anti-defection law.

Merger Exception Misuse:
- Originally meant to protect principled defections, the merger provision is now misused strategically to engineer the downfall of elected governments.
- Speculations about government destabilization in Karnataka highlight the misuse of the merger exception.

Way Forward:
- The first step in addressing the shortcomings of the law involves advocating for the deletion of the merger exception from the Tenth Schedule.
- To prevent the anti-defection law from becoming a tool for political parties to disrupt democratically elected governments, there is a pressing need to rid it of its ailments.

Nut Graf: *The challenges surrounding political defections in India, notably highlighted by the Maharashtra Assembly Speaker's balancing act amid disqualification petitions, underscore the critical need for reform in the anti-defection law, marred by loopholes allowing strategic manoeuvring and government destabilization.*

19. A security breach that must lead to sweeping change

Syllabus: Parliament and State Legislatures—Structure, Functioning, Conduct of Business

Mains: Recent security breach in Parliament and the way forward

Context: The recent security breach on December 13 involved intruders entering Lok Sabha, revealing security gaps.

Current Security Procedure in Parliament:
- **Description of Security Measures:** Spike barriers, bollards, drop gates, scanners, RFID devices, anti-explosive checks, and increased manpower.
- **Layers of Security Personnel:** Central police forces, Parliament Duty Group, Delhi police in inner precincts.
- **Screening Process:** Door frame and handheld metal detectors, personal frisking.
- **Identified Gap:** Inability to detect non-metallic items like plastic or rubber, specifically in shoes.
- Visitors' entry pass can be applied for by MPs
- A certificate of bonafide must be provided by the MP
- CPIC issues passes
- Visitors must carry ID proof
- Presiding Officer may disallow strangers' entry

Types of Passes

Regular Pass
- Application to be made 1 day prior to visit date
- Max. duration – 1 hr.
- Non-transferable

Same-day Pass
- Application can be made 2 hrs. prior to visit time
- Max. duration – 1 hr.
- Non-transferable

The Importance of Technology:
- Need for advanced technology like backscatter scanners, and millimeter wave scanners to detect non-metallic threats.
- Lack of implementation of cutting-edge technology is seen in other global security setups like airports.
- There is a need to emphasize the role of innovative technology in bolstering security, especially against evolving threats.

The Issue of Responsibility:
- **Key Personnel Positions:** Vacancies in critical posts like Joint Secretary, Security, and Chiefs of the Central Reserve Police Force and Central Industrial Security Force.
- **Inquiry Responsibility:** The Indo-Tibetan Border Police (ITBP) chief was tasked with the investigation.
- **Lack of Technological Guidance:** Questioning whether the Ministry of Home Affairs (MHA) suggested or initiated the introduction of advanced technology.

Committee to Find Solution:
- **Leadership Vacuum:** Vacant posts in critical security positions.
- **Proposal:** Secretary of Security, in the Cabinet Secretariat to supervise Parliament security.
- **Committee Formation:** Need to form a committee with five MPs from different parties to oversee security arrangements.
- **Role of Committee:** Regular monitoring, induction of specialists, and coordination with security forces.

Way Forward:
- **Cooperation from MPs:** Emphasizes the need for MPs to cooperate with enhanced security measures.
- **Accountability:** Need for a Director General to oversee security with full responsibility and accountability.
- **Continuous Upgradation:** Stresses the importance of constant monitoring and upgrading of security infrastructure to adapt to evolving threats.
- **Lessons from Incidents:** There is a need for a proactive approach to safeguarding democracy's core institutions.

Nut Graf: The recent breach in Parliament security highlights lapses despite heightened measures. It underscores the necessity for advanced technology and shared responsibility, and proposes a committee-led approach to revamp and vigilantly update security protocols for safeguarding democracy.

20. LS passes Bills to replace British-era criminal laws

Syllabus: GS 2- Polity

Prelims: About Bharatiya Nyaya Sanhita, Bharatiya Sakshya and Bharatiya Nagarik Suraksha Sanhita.

Introduction
- The Lok Sabha has passed three amended Bills that aim to modernise criminal laws, replacing colonial-era statutes.
- This criminal law reform introduces significant changes, bringing terrorism offenses under general criminal law, abolishing sedition, and proposing capital punishment for mob lynching.

Key Reforms Proposed
- Bharatiya Nyaya (Second) Sanhita Bill (BNSS): Replaces the Indian Penal Code, 1860.
- Bharatiya Sakshya (Second) Bill (BSS): Replaces the Indian Evidence Act, 1872.
- Bharatiya Nagarik Suraksha (Second) Sanhita Bill (BNSSS): Replaces the Code of Criminal Procedure, 1898.

Highlights of the Reforms
- **Incorporation of Terrorism as a Separate Category:** The BNSS introduces a definition of terrorism within general criminal law for the first time, emphasising its significance and addressing loopholes that allow terrorists to escape punishment under existing laws.
- **Abolition of Sedition:** The new laws replace sedition (rajdroha) with the offence against the nation (deshdroha), eliminating a colonial-era provision that has been criticised for suppressing dissent.
- **Capital Punishment for Mob Lynching:** The proposed reforms include stringent measures against mob lynching, making it punishable by death, signalling a strong stance against this growing menace.

Exclusion of Doctors from Criminal Prosecution
- An amendment to the BNSS excludes doctors from criminal prosecution for death due to medical negligence.
- Hit-and-run accidents are proposed to be punishable by ten years of imprisonment.

ECONOMY

1.   SEBI proposes easing trading plans for company insiders

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Prelims: SEBI

Context: The Securities and Exchange Board of India (Sebi) proposed relaxations to enable company insiders, who are in possession of unpublished price-sensitive information, to trade in securities.
- Despite Sebi's existing prohibition on insider trading, senior management personnel are permitted to trade in their company's shares through a trading plan framework established in 2015.
- However, the regulatory body acknowledges that the current framework faces challenges, prompting the need for amendments.

Issues with Current Framework:
- **Unpopularity of Trading Plans:**
  - Data and market feedback indicate that trading plans are not widely embraced.
  - Regulatory requirements are deemed onerous, hindering their adoption.
- **Inflexible Cooling-Off Period:**
  - The minimum cooling-off period between disclosure and implementation of the trading plan is currently six months.
  - This lengthy period poses challenges for insiders seeking timely execution of trades.
- **Blackout Period Limitations:**
  - The existing requirement for a blackout period restricts trading activities during crucial financial result announcement periods.
- **Extended Minimum Coverage Period:**
  - Insiders are required to plan for at least 18 months, including a mandatory six-month cool-off period and a minimum coverage period of 12 months.
  - The extended duration may be a deterrent for potential adopters.

Significance of Proposed Changes:
- **Enhanced Flexibility:**
  - The proposed changes aim to make the trading plan framework more flexible and attractive for insiders.
  - Reduction in the cooling-off period, elimination of blackout periods, and adjustments to the minimum coverage period contribute to increased flexibility.
- **Facilitation of Trades:**
  - Insiders, particularly senior management and key managerial personnel, will have a more conducive environment for executing trades, including purposes such as creeping acquisitions and compliance with public shareholding norms.

Proposed Solutions:
- **Reduction in Cooling-Off Period:**
  - Sebi suggests reducing the minimum cooling-off period from six months to four months.
- **Blackout Period Elimination:**
  - The regulator proposes doing away with the blackout period, allowing for continuous trading without restrictions during financial result announcement periods.
- **Minimum Coverage Period Adjustment:**
  - The minimum coverage period, initially set at 12 months, is recommended to be reduced to two months, providing insiders with a shorter planning horizon.
- **Price Limit Flexibility:**
  - During the formulation of trading plans, insiders would have the flexibility to set upper price limits for buy trades and lower price limits for sell trades within +/-20 percent of the closing price.
- **Streamlined Disclosure Process:**
  - Sebi suggests a quicker disclosure process, requiring insiders to submit trading plans to stock exchanges within two days from the date of approval.
- **Separate Filings for Personal Details:**
  - The regulator recommends separate filings for stock exchanges (with personal details) and the public (without personal details) when disclosing personal information of insiders in a trading plan.
- **Contra-Trade Provisions:**
  - The proposed changes clarify the applicability of contra-trade provisions on trades executed under the trading plan.

Conclusion:
Sebi's proposed amendments to insider trading provisions reflect a proactive approach to address the challenges faced by the current trading plan framework.
● The suggested changes aim to enhance flexibility, streamline processes, and encourage wider adoption, ultimately contributing to a more efficient and compliant trading environment.

2. RBI guidelines of unsecured loans

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Mains: RBI guidelines of unsecured loans

Context: The Reserve Bank of India (RBI) has recently taken a decisive step to streamline lending norms for unsecured loans, ushering in changes that reverberate through the dynamic landscape of the Indian financial sector.
● This move holds significant implications, prompting diverse perspectives on its impact, particularly concerning the financial well-being of end customers.

Industry Perspectives:
● **Positive Melody from Moody's:**
  ○ Moody's Investor Services views the tightening of underwriting norms positively.
  ○ Considered credit-positive, it strategically encourages lenders to allocate more capital to unsecured loans, reinforcing loss-absorbing buffers and promoting a measured approach to lending.
● **Fintech Sector Concerns:**
  ○ Fintech lenders, often pioneers in unsecured lending, face heightened scrutiny.
  ○ Stricter underwriting norms raise concerns about potential impacts on loan growth, challenging the adaptability of the industry to the new criteria.
● **Consumer-Centric Guidelines:**
  ○ RBI's focus on personal loans and credit cards underlines a commitment to safeguard individual interests.
  ○ While essential for a balanced lending environment, detailed analysis of specific consumer-side implications becomes imperative.

Insights from CRISIL Ratings:
● **Proactive Risk Mitigation:**
  ○ CRISIL Ratings sheds light on the RBI's proactive move to hike risk weights on unsecured loans, particularly in the retail sector.
  ○ Aimed at stabilizing and calibrating growth, this measure acts as a pre-emptive strike against potential Non-Performing Assets (NPAs).
● **Building Resilience:**
  ○ The emphasis on enhancing guardrails and fortifying internal resilience aligns with the need for prudence in an industry occasionally criticized for overzealous growth pursuits.

Macroeconomic Perspective:
● **Pre-emptive Risk Addressing:**
  ○ The RBI's decision is seen as a pre-emptive move to address perceived risks in the financial sector.
  ○ By compelling institutions to set aside more capital, the RBI positions itself as a regulator anticipating economic downturns and fortifying the sector against potential challenges.
● **Counter-Cyclical Buffers:**
  ○ The decision reflects a macroeconomic strategy, promoting the building of counter-cyclical buffers and endorsing a cautious lending approach.

Distributors' Stance:
● **Muted Direct Impact:**
  ○ Distributors of lending products, like Credilio, anticipate a muted direct impact for now.
  ○ Their commitment lies in matching the ideal lending product to customer profiles, actively incorporating checks like credit and profile assessments.

Conclusion:
● The RBI's move on unsecured loans sets the stage for a balanced and resilient financial sector, emphasizing responsible lending practices. While short-term challenges may be inevitable, especially for players in fintech and NBFCs, the long-term benefits of a stable and well-regulated financial system are compelling.
● Collaboration among regulators, financial institutions, and stakeholders becomes paramount in navigating these changes. As India's financial sector adapts, the RBI's measure signals a vision for sustainable growth and resilience, crucial in navigating the complexities of the evolving financial landscape.

3. PM-KISAN Bhai

Syllabus: Major cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

Prelims: PM-KISAN Bhai

Context: The Central Government is set to introduce the PM-Kisan Bhai scheme, a strategic initiative aimed at dismantling the monopoly of traders in agricultural markets.
- Envisioned to empower small and marginal farmers who lack the capacity to store their produce, the scheme plans to incentivize farmers by offering storage incentives.
- With a total estimated cost of ₹170 crore over three years, the scheme is poised to launch on a pilot basis in seven states during this fiscal year. The Agriculture Ministry, having concluded a 10-day feedback period, is on track to roll out the scheme by December-end.

Issues Addressed:
- **Trader Monopoly in Agricultural Markets:**
  - Small and marginal farmers often face challenges in negotiating fair prices due to the dominance of traders in agricultural markets.
  - The PM-Kisan Bhai scheme aims to break this monopoly by providing farmers with the incentive and support needed to store their produce.
- **Challenges for Small and Marginal Farmers:**
  - Lack of storage capacity forces many small and marginal farmers to sell their produce immediately, often at lower prices.
  - The scheme targets this issue by encouraging farmers to hold onto their produce, allowing them to wait for more favorable market conditions.
  - The small and marginal farmers do not have capacity to store their produce in warehouses
  - Smallholders share out of the total is just 2%

Significance of the Scheme:
- **Empowering Small Farmers:**
  - PM-Kisan Bhai aims to empower small and marginal farmers who constitute a significant portion of India's agricultural landscape.
  - By providing incentives for storage, the scheme offers these farmers the opportunity to enhance their bargaining power and economic viability.
- **Reducing Dependence on Immediate Sales:**
  - Immediate sales often lead to farmers accepting lower prices for their produce.
  - The scheme's focus on incentivizing storage aims to reduce this dependence, allowing farmers to wait for better market conditions and prices.
- **Pilot Launch in Seven States:**
  - Launching the scheme on a pilot basis in seven states during this fiscal year allows for a phased implementation and the identification of potential challenges.
  - It provides an opportunity to assess the effectiveness of the scheme in diverse agricultural landscapes.

Objectives
- To incentivize scientific storage by small and marginal farmers
- To address the issue of distress sale
- To provide liquidity in the hands of the farmers
- To promote warehouse-based sale so as to improve farmer-market linkage and reduce transportation cost

Benefit
- Farmers can store their produce and will have the power to decide when to sell
- They will also be protected from the lower prices that can be created due to supply glut
- Storing in the scientific warehousing the wastages will come down and will increase the earnings for the farmers
- With eNWR (electronic negotiable warehouse receipt) the farmers will be able to get access to large number of buyers
- Warehousing Rental Subsidy (WRS)
- Rental subsidy of ₹ 4 per quintal
- Remaining amount must be paid by the farmer
- The subsidy will be provided for a period of maximum 3 months (minimum 15 days)
- Prompt Repayment Incentive (PRI)
- The Kisan Credit Card (KCC) holding farmers will be eligible for prompt repayment incentive
- 3% lesser interest rate for 3 months on stocking their produce with WDRA registered warehouses and availing digital finance against eNWR and also trading the same via eNAM and other registered e-trading platforms

Concerns
● Too many conditions may limit the availability of benefits
● The scheme is available to the farmers registered on the eNAM (1.76 Cr farmers are registered)
● It is providing the benefits for 3 months, but the volatility can be created after that.

Conclusion:
● The PM-Kisan Bhai scheme emerges as a proactive measure to empower small and marginal farmers, offering them a viable alternative to immediate sales.
● By incentivizing storage and breaking the traders' monopoly, the scheme addresses longstanding issues in the agricultural sector.
● As the pilot launch approaches, it is imperative to closely monitor the scheme's impact, engage with stakeholders, and iterate on the model to maximize its effectiveness. Ultimately, the success of PM-Kisan Bhai will contribute to a more equitable and resilient agricultural ecosystem in India.

4. PMGKAY extension – Pros and Cons

Syllabus: Major cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

Mains: PMGKAY extension – Pros and Cons

Context: The PRADHAN MANTRI GARIB KALYAN ANNA YOJANA scheme will remain operational till December 2028.

Pros
● This will make sure food grains are available for the population
● Will reduce the the stock of food grains which usually end up rotting in the warehouses

Cons
● Higher expenditure
● Will not provide nutritional security
● As per the 'State of Food Security and Nutrition in the World' from FAO sites that 74% of Indian population cannot afford a nutritious diet
● As per the NFHS-5 for 2019-21 reveals that 36% of children under the age 5 exhibit stunted growth indicating chronic undernutrition
● May lead to competitive populism

5. 70 hrs work – Pros and Cons

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Mains: 70 hrs work – Pros and Cons

Context: Infosys founder Narayana Murthy recently said that young Indians should work 70 hours a week in order to compete with countries like China.

Why should we stick to the current situation – 48 hrs.
● Adequate rest and protect workers' health and thus reduce sickness, absenteeism and attrition rates
● Increase productivity
● This may increase the female labour participation and ensure inclusive development
● Help in having work-life balance and enhance overall welfare

Benefits
● Higher production and faster growth
● Will help India become more competitive
● Will give more flexibility for the employer

Concerns
● More and more women will be out of the workforce
● The owners will take away the profits
● May increase stress in among the workers
● Work life balance will be difficult
● Focus should be on worker's productivity rather than the working hours
● Labour productivity is around $8.7 per hour (global avg is $19 per hour)
● Indian workers in 2021 worked 47.7 hrs a week compared to Japan's 36.3 hrs, Germany's 34.3 hrs, USs 36.4 hrs and China's 46.1 hrs

Way Forward
● More flexibility in terms of space and timing of work
● Higher skilling
● High value manufacturing
● Vocational training in education
● Increase the investment in R&D

6.   Sampoorn Index

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Prelims: Sampoorn Index

Context: SIDBI Introduces 'Sumpoorn' MSME Economic Activity Index in Collaboration with Jocata.
● SIDBI (Small Industries Development Bank of India) has partnered with Jocata to launch a groundbreaking MSME Economic Activity Index called 'Sumpoorn.'
● The Small Industries Development Bank of India (SIDBI) has partnered with Jocata, a digital lending transformation platform, to launch a groundbreaking initiative named 'Sumpoorn'—a unique MSME Economic Activity Index. This index aims to provide a real-time snapshot of India's vital MSME sector, which contributes significantly to the country's Gross Value Added (GVA) and exports.

Objective of the Index:
● Unlike existing macro indices that rely on subjective opinions and survey data, 'Sumpoorn' is designed as a high-frequency indicator specifically tailored for the MSME segment. The index utilizes consent-led and anonymized monthly sales data from over 50,000 credit-seeking MSMEs, as reflected in official GSTN returns.

Index Development:
● A collaborative effort by a team of credit experts, data scientists, and senior economists, the 'Sumpoorn' Index has been meticulously developed and tracked over the past four years. This ensures its accuracy in representing the MSME economy and its ability to capture the nuanced impact of macroeconomic conditions.

Data Source:
● The index relies on monthly sales data obtained from the Goods and Services Tax Network (GSTN) returns of credit-seeking MSMEs. This data is analyzed to create a relative amplitude-adjusted composite diffusion index, providing a comprehensive view of the economic activity within the MSME sector.

Significance for the Indian Economy:
● Given the acknowledged importance of the MSME sector in India, SIDBI emphasizes the need to bridge the information gap that often hinders informed decision-making by industry stakeholders and policymakers. 'Sumpoorn' is positioned as a solution to this challenge, leveraging GST data to offer a reliable measure of MSME economic activity.

7.   PM Vishwakarma Scheme

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Prelims: PM Vishwakarma Scheme

Context: This is a central sector scheme launched by the Ministry of Micro, Small, and Medium Enterprises, which offers services like market linkage support, skill training, and incentives for digital transactions to artisans and craftspeople engaged in specified trades.
● Time period: Five years (FY 2023-24 to FY 2027-28).

Aim
● To strengthen and nurture the Guru-Shishya parampara, or family-based practice of traditional skills by artisans and craftspeople working with their hands and tools.
● The scheme also aims at improving the quality as well as the reach of the products and services of artisans and craftspeople and to ensure that the Vishwakarmas are integrated with the domestic and global value chains.

Eligibility & coverage
● It is available for rural and urban artisans and craftsmen across India.
● It covers 18 traditional crafts such as Boat Maker; Armourer; Blacksmith; Hammer and Tool Kit Maker; etc.
● Five lakh families will be covered in the first year and 30 lakh families over five years.

Benefits
- Under this scheme, the artisans and craftspeople will be provided recognition through a PM Vishwakarma certificate and ID card.
- They will receive collateral-free credit support of up to ₹1 lakh (first tranche) and ₹2 lakh (second tranche) with a concessional interest rate of 5%.
- The scheme will further provide craftsmen with methods of skill upgradation involving basic and advanced training, a toolkit incentive of ₹15,000 and incentives for digital transactions, and marketing support.
- Under the scheme, there will be two types of skilling programmes -- Basic and Advanced and a stipend of Rs 500 per day will also be provided to beneficiaries while undergoing skills training.

8. The need to transform agri-food systems

Syllabus: Major cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

Mains: Issues, challenges and solutions of agri-food systems practised in India.

Context:
A UN FAO report exposes hidden costs involved in the global agri-food systems. This analysis focuses on India's need for a transformative shift, emphasising crop diversification for sustainability.

Introduction
- A UN Food and Agriculture Organization (FAO) report reveals hidden costs exceeding $10 trillion in global agri-food systems, particularly impacting middle-income countries like India.
- The report attributes these costs to unsustainable business-as-usual activities, advocating for a transformative shift in agri-food systems.

Impacts of Intensive Agriculture in India
- The Green Revolution's focus on high-yielding varieties of paddy and wheat led to monoculture, compromising seed sovereignty, dismantling indigenous knowledge, and negatively impacting nutritional needs and ecological health.
- Intensive agriculture practices increased farmers' indebtedness, making agriculture economically unviable.

Favoured Crops and Procurement Policies
- The National Food Security Act heavily favours the procurement of rice and wheat, neglecting coarse grains crucial for nutritional diversity.
- Policies favouring water-intensive cash crops like sugarcane and areca nut threaten food security and biodiversity and contribute to environmental issues.

Global Trade and Impact on Local Farmers
- Global market fluctuations in soy prices and supply from Latin American countries adversely affected soy farmers and agro-companies in India.
- Historical global trade relations influenced food production systems in the Global South.

Role of Crop Diversification
- Crop diversification, rooted in agroecology principles, is proposed as a solution to revitalise degraded land and soil.
- Multi-cropping systems, such as 'akkadi saalu' in Karnataka, involve intercropping with a mix of legumes, pulses, oilseeds, trees, shrubs, and livestock, promoting biodiversity and soil health.

Benefits of Millets and Crop Diversification
- Millets, compared to rice and wheat, offer comparable yields, and higher nutritional value, and thrive in semi-arid conditions without depleting groundwater.
- Crop diversification preserves natural capital, provides a diversified food basket, and redirects subsidies to support sustainable farming practices.

Transitioning Farmers to Diversified Farming
- Gradual transition from chemical-intensive practices to non-pesticide management and natural farming practices can reduce input costs.
- Farmers can diversify income through value addition, incorporating livestock and poultry.
- Systematic transition pathways involve allocating specific percentages of land for commercial crops, food and fodder, and environmental services, gradually decreasing reliance on commercial crops.

Challenges and Solutions
- Addressing challenges related to local seeds, market access, labour, and institutional arrangements is crucial for a successful transition.
- Collaborative efforts among institutions, policymakers, and social groups are needed to provide economic incentives for farmers to shift from high-input monoculture to diversified cropping.

NutGraf: *India's intensive agriculture faces hidden costs impacting the economy, environment, and health. To counter this, a shift to multi-cropping systems rooted in agroecology is proposed, presenting a sustainable solution.*

9. Strategy for India's future growth

Syllabus: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment

Mains: Growth strategy needed in the uncertain global and domestic environment

Context: India's growth faces diverse projections amid global changes like deglobalization, supply disruptions, and geopolitical tensions, necessitating a shift in strategy.

Different Projections for India's Growth:
- RBI projects India's growth at 7%, while IMF and World Bank estimate it at 6.3% for 2023-24.
- India's recent growth rates in the first two quarters support the RBI's projection.
- Global conditions, including deglobalization and geopolitical conflicts, impact India's growth strategy.

Improving Investment Rate in the Medium Term:
- India needs to shift from an export-led growth strategy due to changing global dynamics.
- Domestic growth drivers become crucial, requiring a focus on domestic savings.
- Concerns arise from a fall in household savings, impacting resources available for government and corporate investment.
- The nominal investment rate is estimated at 29.2% in 2022-23, but the real investment rate needs enhancement for sustainable 7% growth.

Addressing Employment Challenges:
- India faces a unique situation with a large employable population and increasing labour-saving technologies.
- United Nations projections show the working-age population peaking at 68.9% in 2030.
- Increased allocation for training and skilling required to meet employment demands.
- Non-agricultural growth must absorb labour released from agriculture and counter the impact of new technologies.
- Facilitating the absorption of productivity-enhancing technologies, including AI, is essential.

Tackling Climate Concerns and Technological Changes:
- India commits to reducing carbon emissions with initiatives like the Green Grids Initiative and emphasis on electric vehicles.
- Climate-friendly service sector growth can minimize adverse impacts on the potential growth rate.
- Balancing growth with environmental sustainability and adopting technologies that support employment is crucial.

Fiscal Responsibility for Sustained Growth:
- Adherence to fiscal responsibility targets is critical for sustaining growth.
- Recent slippage in achieving fiscal responsibility targets raises concerns.
- Aim to bring down combined fiscal deficit and debt-to-GDP ratios to 6% and 60%, respectively.
- Achieving a balance or surplus on the revenue account is essential to reduce government dissavings.

The Way Forward:
- The projected growth of 6.5% in the next two years with a focus on recovery.
- Medium-term challenges require attention to raising savings and investment rates.
- Skill enhancement for the workforce, adopting employment-friendly technologies, and achieving environmental sustainability are key priorities.
- Maintaining fiscal responsibility is crucial for sustained and balanced economic growth.
- The overall strategy aims at achieving a growth rate of 7% to 7.5% over the medium term.

Nut Graf: *India's growth outlook varies among RBI, IMF, and World Bank. With changing global dynamics like deglobalization and conflicts disrupting supply chains, India must pivot from export reliance. Focus on domestic savings, skill enhancement for employment, balancing technological advancements with job creation, and fiscal responsibility are pivotal for achieving sustained 7% to 7.5% growth amidst evolving challenges.*

10. Financial Stability Board

Syllabus: GS 3- Economy

Prelims: About Financial Stability Board and Multi-function Crypto-asset Intermediaries (MCIs)

Introduction
- The Financial Stability Board (FSB) recently released a report addressing concerns and potential risks associated with multi-function crypto-asset intermediaries (MCIs), citing the FTX collapse in November 2022 as a notable example.
- The report emphasises the need for enhanced cross-border cooperation and information sharing among authorities to regulate and address gaps in the operations of globally operating MCIs.

Defining MCIs
- MCIs, as per the report, are individual firms or groups offering diverse crypto-based services, primarily centred around operating trading platforms.
- Examples include Binance, Bitfinex, and Coinbase, which integrate functions traditionally provided by separate entities in the traditional financial landscape.
- MCIs generate revenue from transaction fees, with services expanding beyond trading to encompass a range of crypto-based offerings.

Lack of Transparency
- The report underscores a lack of transparency in most MCIs regarding their corporate structure and operations.
- MCIs are often privately held and provide limited publicly disclosed information, relying on press coverage, court filings, and regulatory actions rather than transparent disclosures.
- The absence of a "meaningful separation" between conflicting business lines and inadequate disclosure of transactions and audit practices raises concerns about risk management and governance frameworks.

Regulatory Oversight Concerns
- The report suggests intentional opacity by MCIs to limit understanding of vulnerabilities, economic models, and activities, potentially evading regulatory oversight.
- Poor risk management within MCIs may expose vulnerabilities to insider misconduct.
- The lack of transparency could hide risks related to governance effectiveness or the profitability of the business model until negative shocks materialise.

Spillover Risks
- While the current threat to global financial stability and the real economy from MCI failures is deemed "limited," recent events highlight risks.
- Failures or closures of crypto-asset-friendly banks, as seen with Silvergate Bank in March, reveal concentrated deposit exposures to firms reliant on crypto assets.
- Events such as the FTX collapse lead to a loss of confidence in crypto assets, resulting in a 'run-off' where investors shift from riskier to safer assets.

11. Understanding the debates around anarcho-capitalism

Syllabus: Indian Economy and issues relating to planning, mobilisation of resources, growth, development and employment. Government Budgeting. Inclusive growth and associated issues/challenges.

Mains: Anarcho-capitalism and its impact on economic policies.

Context:
Anarcho-capitalism, championed by figures like Murray Rothbard, promotes the privatisation of law and order in a free market, challenging state-run systems. Javier Milei's recent popularity adds contemporary relevance.

Introduction
- Anarcho-capitalism is a political philosophy advocating for the abolition of the state, entrusting law and order to private companies within a free market.
- Coined by libertarian economist Murray Rothbard, anarcho-capitalism has gained attention, with recent notable figures such as Javier Milei in Argentina identifying as anarcho-capitalists.

Philosophy and Functionality
- Traditionally, free market proponents supported private provision for most services, leaving policing and courts to the state.
- Anarcho-capitalists argue that private companies, driven by market competition, can offer policing and legal services more efficiently and at a higher quality.
- In an anarcho-capitalist society, individuals would pay private entities for protection and dispute resolution, fostering accountability through customer satisfaction.

Contrast with State-Run Systems
- Anarcho-capitalists criticise the state's monopoly on policing and legal services, highlighting inefficiencies, lack of accountability, and suboptimal quality.
- State-funded services, like police and courts, often lack accountability to citizens as taxes are mandatory, irrespective of service quality.
- Competition in an anarcho-capitalist system, proponents argue, would enhance service quality and lower costs through customer-driven choices.

Critics and Concerns
- Critics argue that having multiple private firms providing these services within a single region might lead to conflicts and chaos.
- Concerns are raised about favouritism towards the rich, who may influence private police and courts with financial power, leaving the poor without justice.

Response to Criticisms
- Anarcho-capitalists argue that cooperation among competing firms would prevent conflicts. Refusal to cooperate would lead to a loss of business.
- Critics' claims of favouritism are countered by asserting that private firms primarily depend on revenue from the larger society, making it impractical to favour only the rich.
- Anarcho-capitalists contend that an open market would encourage firms to cater to the demands of the broader population, including the poor.

Notable Figures
- Anarcho-capitalist ideology is associated with contemporary figures like David Friedman, Edward Stringham, and Michael Huemer.

NutGraf: Anarcho-capitalism advocates abolishing the state, and entrusting law and order to private firms. Critics fear chaos and favouritism, while proponents believe market dynamics ensure efficient, customer-driven services.

12. Patent exclusions — Madras High Court shows the way

Syllabus: Issues relating to Intellectual Property Rights

Mains: Pharmaceutical Patents in India and their impact on ease of doing Business and Public Welfare

Context: The Madras High Court recently delivered key judgments on pharmaceutical patents in India, focusing on the interpretation of exclusionary clauses in the Patents Act, 1970, to guide innovation and accessibility.

Pharmaceutical Patents in India:
- Pharmaceutical patents in India bear significant implications for both medicine accessibility and innovation within the industry.
- The Patents Act of 1970, particularly Section 3, establishes exclusions that define what can and cannot be patented.
- However, beyond the well-defined exclusion regarding enhanced therapeutic efficacy outlined in Section 3(d), there remains a dearth of precise interpretations for other exclusionary clauses.

The outcome of Judgment 'Novozymes vs Assistant Controller of Patents and Designs':
- **Section 3(e) exclusion:** compositions amounting to mere aggregation of components.
- **Ruling:** Known aggregates aren't excluded; if individual components meet patent criteria, inclusion in a composition doesn't invalidate patent eligibility.
- Emphasis on producing evidence showcasing synergistic properties of multi-ingredient compositions.
- Rejection is justified due to failure to prove the invention as more than a sum of its parts.

Outcome of Judgment 'Hong Kong and Shanghai University versus Assistant Controller of Patents':
- **Section 3(i) exclusion:** processes for treatment of human/animal diseases.
- **Court's clarification:** Exclusion is not limited to in vivo/invasive diagnoses nor encompasses all diagnostic processes.
- **Proposed standard:** Evaluating claims and complete specifications to discern disease-diagnosing processes.
- **Example:** Non-invasive prenatal disease test—If it can't uncover foetal pathology, not a diagnostic test and is not excluded by Section 3(i).

What are Bright-Line Rules?
- Bright-line rules refer to clear and specific standards or guidelines that establish easily understandable and unambiguous criteria for decision-making in legal or regulatory contexts.
- These rules are precise, leaving little room for interpretation or discretion.
- They aim to simplify complex issues by providing explicit boundaries or criteria, offering certainty and consistency in decision-making processes.

- Bright-line rules are often used in various fields, including law, finance, and regulations, to streamline decision-making and ensure uniformity in applying specific standards or principles.

Need for Bright-Line Rules:
- High R&D costs in pharmaceuticals demand clarity in patent protection boundaries.
- Bright-line rules offer consistency, certainty, and ease in decision-making for the Indian Patent Office.
- Simplification reduces administrative burden and aids inventors and opposing groups in understanding legal boundaries.
- Potential issues are countered by existing safeguards within patent laws, especially in pharmaceuticals.
- Judiciary's role in addressing legislative gaps for public health interests and balancing competing interests in pharmaceutical patents.
- Opportunity for Indian courts to shape patent law jurisprudence considering socio-economic conditions and far-reaching consequences of their decisions.

Nut Graf: In the realm of pharmaceutical patents in India, the recent judgments from the Madras High Court emphasize the need for clear interpretations of exclusionary clauses in the Patents Act, 1970. Addressing gaps beyond the well-known Section 3(d), the rulings highlight the significance of establishing bright-line rules to provide clarity and consistency in the complex landscape of patent eligibility, fostering innovation and accessibility to essential medicines.

13. Debt debate

Syllabus: GS-3, Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

Mains: IMF's Articles of Agreement and Public Debt of India.

Context: The Indian government has clarified that the International Monetary Fund's (IMF) warning about the debt-to-GDP ratio reaching 100% was presented as a worst-case scenario and not considered a "fait accompli."

What is IMF's Articles of Agreement?
- The Articles of Agreement of the International Monetary Fund outline the IMF's purposes, which include the promotion of international monetary cooperation through a permanent institution that provides the machinery for consultation and collaboration on international monetary problems.
- Under Article IV of the Articles of Agreement, IMF officials conduct annual bilateral discussions with member countries and publish country reports. These reports encompass the IMF's perspectives on diverse macroeconomic issues, reflecting discussions with the country's officials regarding economic development and policies.

IMF's India Report 2023: In this year's report, IMF has warranted two areas for closer examination.
- **India's currency regime:** The IMF has observed that from December 2022 to October 2023, the exchange rate between the rupee and the dollar remained within a very narrow range, with a marginal depreciation of the Indian rupee. **This suggests substantial foreign exchange interventions by the Reserve Bank of India, leading to the reclassification of India's exchange rate regime from "floating" to a "stabilised arrangement" during this period.** However, the overall de jure classification has continued to be "floating."
- **Government debt level:** The IMF has observed that in the event of adverse shocks, the general government debt level in India is projected to surpass 100% of the country's gross domestic product (GDP) in the medium term (by 2027-28).

India's Response:
- **India's currency regime:** The Reserve Bank of India has clarified that the IMF staff's assessment was of a short-term nature and that the data has been selectively used. **The RBI maintains that the rupee is market-determined, and foreign exchange interventions were employed solely to curb excessive exchange rate volatility.**
- **Government debt level:** The finance ministry has clarified that the IMF report is based on presumptions and does not accurately reflect the actual positions.
  - The IMF country report also presents significantly higher extreme 'worst-case scenarios,' with debt levels of 160%, 140%, and 200% of GDP projected for the United States of America, the United Kingdom, and China, respectively.
  - This year's IMF report indicates that India's sovereign stress risks are moderate compared to the higher risk level identified in 2022.
  - Additionally, the IMF report notes that, under favourable circumstances, the debt-to-GDP ratio could decrease to 70% by 2027-28.

India's Public Debt:
- The combined debt of the central and state governments stood at 81% of GDP in 2022-23, down from 88% in 2020-21.

Nut Graf: *The government must curtail debt and expenditure to uphold its commitment to reducing the debt to 4.5% of GDP by 2025-26 from an estimated 5.9% in 2023-24.*

14. Are graduates facing unemployment?

Syllabus: Issues related to planning Mobilization of resources Growth Development Employment

Mains: Unemployment of graduates

Context: The issue of unemployment among graduates in India has been a persistent challenge, attracting attention from historical figures like M Visvesvaraya to contemporary leaders like Rahul Gandhi.
● Despite a recent decrease in the overall unemployment rate, highly educated individuals continue to face disproportionately high unemployment rates.

Historical Patterns and Socio-Economic Changes
● M Visvesvaraya's observation in 1932 highlighted the long-standing issue of unemployment among the educated.
● The breach in Parliament has once again brought youth unemployment to the forefront of discussions.
● While today's leaders attribute rising youth unemployment to the present government, official data contradicts this claim.
● The Periodic Labour Force Survey (PLFS) indicates a decline in the overall unemployment rate from 6.1% in 2017-18 to 3.2% in 2022-23.

Issues: Disparities in Graduate Unemployment
● Despite the overall decline in unemployment rates, there exists a significant disparity in the unemployment experience.
● The highest unemployment rates are observed among highly educated young workers, posing a structural challenge to the Indian economy.
● The analysis spans from the 50th Round of NSSO surveys (1993-94) to the latest PLFS surveys (2022-23) for individuals aged 18 to 65.
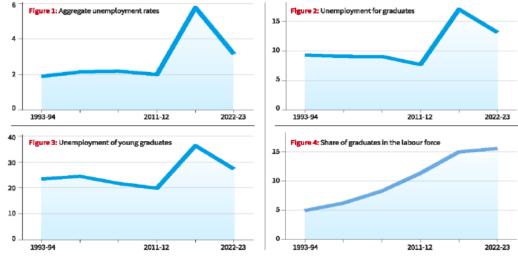
Education and Unemployment
● Figure 1 illustrates the overall unemployment rates for the 18 to 65 age group, showcasing a historical low in the early 1990s, peaking at 5.77% in 2017-18, and subsequently reducing to 3.15% by 2022-23.
● Figure 2 reveals consistently higher unemployment rates for individuals with graduate degrees, reaching 17% in 2017-18 and declining to 13% in 2022-23.
● Figure 3 focuses on young workers (18 to 29) with graduate degrees, depicting a rise in long unemployment spells from the 1990s to 2017-18 and a subsequent reduction to 27% by 2022-23.
● Figure 4 highlights the expansion of higher education, with the share of graduates in the labour force rising from 5% in 1993-94 to approximately 15% in 2022-23.

Career disparity
Persistent high unemployment among educated Indian youth reveals structural challenges in job creation despite overall declining unemployment rates

Source: The Hindu

Way Forward
● Comprehensive efforts are needed to identify and address the factors contributing to graduate unemployment, whether related to the education system or the economy's inability to generate sufficient jobs.
● Ensuring that the growing number of educated job-seekers entering the labour force annually can find meaningful employment is crucial for harnessing India's demographic dividend.

Nut Graf: *The issue of graduate unemployment in India, though showing recent signs of improvement, remains a significant concern.*

15. A new economics for inclusive growth

Syllabus: GS-3, Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment. Inclusive growth and issues arising from it.

Mains: Localisation of Production for more inclusive and employment-oriented growth

Context: The persistent struggle of the Indian economy to generate adequate employment and income opportunities despite substantial investments in high-end skills and technology calls for a new growth paradigm for India.

Past Failures and Present Realities:
Raghuram Rajan and Rohit Lamba in their book "Breaking the Mould: Reimagining India's Economic Future" recommended directly focusing on exporting high-end services bypassing the manufacturing sector. However, the article argues that India has struggled in job creation despite pursuing this strategy over the past 30 years**.**

The Achilles Heel: A Jobless Economy
Despite boasting impressive economic figures, India's Achilles heel lies in its inability to translate growth into sufficient job opportunities. The signs are stark: farmers clamour for better prices, informal and contractual workers yearn for fair wages and social security, and a staggering 60% of the population falls under the "economically weaker sections" category. This stark reality exposes the hollowness of mere "growth" when it fails to trickle down to the masses.

Leapfrogging Manufacturing: A Flawed Trajectory?
India has bypassed manufacturing and jumped straight to the services sector. This shortcut, touted as a leapfrogging manoeuvre, has yielded disappointing results. China's successful ascent from poverty illustrates the power of a robust manufacturing sector in powering mass upward mobility while India invested heavily in advanced science and engineering institutions. They also produced CEOs for U.S. multinational companies. India's space programme is delivering results at a fraction of the National Aeronautics and Space Administration's costs. However, India's pattern of growth, with investments in high-end skills, has not generated enough decent jobs for India's masses.

The Missing Link: Skills, Jobs, Income and Location
- The crux of the problem lies in the disconnect between skills, available jobs, and income potential. India's pattern of growth, favouring high-end skills, hasn't adequately addressed the needs of millions yearning for a decent livelihood.
- In rural areas, an agricultural worker, while eager to transition to a new job, faces constraints in dedicating time to learn new skills due to the need for continuous work and income. Hence, the ideal next job should align closely with their existing capabilities and be geographically close to their current residence to facilitate skill enhancement while reducing living expenses.
- Therefore "*Adjacencies" in work and location*, particularly in rural areas are important for the rural masses to learn new skills while pursuing their present job.
- This entails fostering small-scale, labour-intensive enterprises centred around processing agricultural produce and facilitating local trade. Such micro-economic ecosystems offer a more tangible stepping stone for skill development and income growth, compared to distant, large-scale factories requiring significant capital and land.

The pattern of economic growth must be changed
- Targets of trillions of dollars of GDP will not be achieved if economic growth does not become inclusive and sustainable very soon.
- More Indians must be employed so that they can earn and learn and, by earning more, increase the market for more producers.
- India cannot afford to neglect its small-scale and informal manufacturing sector any longer.
- While India has abundant resources of willing human beings, large, capital-intensive, factories require more land and financial capital to operate on scale resources which are relatively scarce in India.

Make more for India, in India
- Investing in education and skills for "high-end" manufacturing and services will not benefit the masses if they cannot be employed.
- The richness of economic activity within local webs will create more sustainable growth than policies to participate in long, international supply chains when barriers are rising. The Indian state has limited financial capacity. It cannot afford to misspend it, by reducing taxes and duties and giving incentives to investors, with the expectation that benefits will gush down to the masses.
- More imports will not increase the well-being of Indian citizens if they do not have more income to buy.
- Foreign direct investment will not boost growth if it does not increase employment soon.

Breaking the Mould: A New Economics for a New India

- The mould in which economics was cast in the later part of the 20th century must be broken.
- Policymakers must reimagine the path for India's growth. They must get down to the basics of inclusive economic growth. There are no shortcuts.
- The global economy is not growing like it was when China became the factory for the world.
- Producers everywhere are looking for new markets. India, with its unmet needs, is very attractive for them.
- India's policies must take advantage of this opportunity and make more for India in India, thus growing both jobs and incomes for India's masses.

Nut Graf: India needs to move beyond GDP number-based growth and chart a new economic course that prioritizes the masses, fosters local production, and unlocks the power of learning and labour for an inclusive and sustainable future.

16. Viksit Bharat & Happiness Index

Syllabus: Economic Development in India

Mains: Viksit Bharat & Happiness Index

Context: Viksit Bharat, aimed at transforming India into a developed nation by 2047, raises critical questions about the nature of development and its priorities. While economic development takes precedence, the Euro-centric notion of development has been challenged by post-developmentalists. The pursuit of 'happiness' emerges as a pivotal aspect that needs to be central to India's developmental journey.

Issues with the Current Development Agenda

- **Overemphasis on Economic Development:**
  - Viksit Bharat predominantly focuses on structural transformation, labour markets, competitiveness, financial and social inclusion, governance reforms, and Green Revolution opportunities.
  - Critics argue that the Euro-centric model neglects broader dimensions of development, reflecting the interests of its practitioners.
- **Neglect of Social and Psychological Well-being:**
  - Development should extend beyond material progress.
  - Concerns raised about the conventional models of economic growth, modernity, and progress.
  - Mental health and wellness are overlooked in the current developmental scheme.

Significance of 'Happiness' as a Goal

- **Shift to 'Happy India-Developed India':**
  - Proposes reimagining Viksit Bharat with 'Happiness' as the central pursuit.
  - Argues that development without achieving happiness is meaningless.
  - Rich nations with high GDP may not necessarily be happy nations.
- **World Happiness Report and India's Ranking:**
  - World Happiness Report 2023 emphasizes trust, benevolence, and social connections.
  - India ranked 126 out of 137 countries despite being the fifth-largest economy.
  - Questions whether India's happiness index will improve without a shift in the development paradigm.
- **Measuring Happiness:**
  - Happiness measured through GDP per capita, healthy life expectancy, generosity, social support, freedom to make life choices, and perception of corruption.
  - Social connections and relationships crucial for happiness and well-being.

Solutions and Reimagining Development

- **Incorporating Social Indicators:**
  - Shift from GDP-centric development to inclusive models.
  - Consider social indicators like the Human Development Index, Social Development Index, Green Index, and International Human Suffering Index.
- **Comprehensive Development Indices:**
  - Utilize established indices such as the Global Innovation Index, Rule of Law Index, Poverty Index, Corruption Perceptions Index, Gender Equality Index, and World Press Freedom Index.
  - Envisioning a holistic national vision for development.

Nut Graf: Viksit Bharat's journey needs a pivotal shift towards a 'Happy India-Developed India' paradigm. Happiness, measured through comprehensive indicators, should be central to the developmental agenda. Revisiting the pursuit of development as synonymous with happiness will ensure a more inclusive, balanced, and meaningful transformation for India by 2047.

17. India's stationary course in the shipping value chain

Syllabus: Infrastructure Ports

Mains: India's stationary course in the shipping value chain

Context: India's maritime landscape, with its long coastline and strategic positioning, presents a paradox — a rich tradition of ship-owning and seafaring but a lag in progressing up the shipping value chain. As global shipping dynamics evolve, India's position in the industry faces challenges, particularly in shipbuilding and ownership.

Issues:
- **Historical Advantages:** India had a head start in the shipping industry until the late 1980s, with a tradition of ship-owning and modern ship-owning contributions. A unique case of an Indian Navy officer commissioning giant oil tankers showcased India's potential in the industry.
- **Missed Opportunities:** While India initiated in the shipping sector ahead of China, the latter leapfrogged since the late 1980s, leaving India behind. Despite a tradition of ship-owning, chartering, and modern ship-owning, India has not ascended the shipping value chain. The state-owned Shipping Corporation of India has faced challenges, impacting the order book of Indian shipyards.
- **Limited Shipbuilding Presence:** India's share in global shipbuilding has dropped to practically zero, contrary to the Maritime Agenda 2020's aim to achieve a modest 5% share. The lack of emphasis on shipbuilding and ownership in the Maritime India Vision 2030 poses a significant hurdle.

Significance:
- **Economic Impact:** India's inability to move up the shipping value chain affects its economic potential. While Indian seafarers and ship management companies contribute an estimated $6 billion in foreign exchange annually, the absence of a robust shipbuilding and ownership sector hampers comprehensive economic growth.
- **Strategic Importance:** Shipbuilding is crucial not only for industrial growth but also for strategic power. A strong naval base relies on a robust shipbuilding sector. India's geopolitical position and extensive coastline make shipbuilding integral to bolstering maritime capabilities.

Solution:
- **Government Initiatives:** A dedicated government plan, akin to China's, focusing on ramping up shipbuilding and ownership, can propel India forward. Support for private shipyards and shipowners, aligned with a comprehensive vision, is crucial.
- **Global Collaboration:** Collaborations with global players in shipbuilding and ownership can bring expertise and technology transfer, fostering India's capabilities. Joint ventures and partnerships can accelerate the learning curve and enhance competitiveness.
- **Policy Reforms:** Clear and consistent policies, including incentives and sops, are essential to attract private investment into shipbuilding. Streamlining regulatory processes and addressing bureaucratic hurdles can create an environment conducive to industry growth.

Nut Graf: India's shipping industry, with its historical advantages, stands at a crossroads. Addressing the challenges and seizing opportunities in shipbuilding and ownership is pivotal for India's economic growth, strategic positioning, and global influence.

18. Challenges in Textile sector

Syllabus: Growth, Development and Employment

Mains: Challenges in Textile sector

Context: India's textile sector, primarily comprising small businesses, faces substantial challenges in adhering to new environmental, social, and governance (ESG) norms, including the European Union's Carbon Border Adjustment Mechanism (CBAM).
- Despite concerns, there is a realization that embracing sustainability could propel the sector to new heights.
- The sector's current sustainable practices, such as renewable energy adoption and recycling initiatives, serve as a foundation but meeting evolving global ESG demands remains a pressing issue.

Issues at Hand:
- **ESG and CBAM Impact:** The EU's CBAM and broader ESG goals pose challenges for India's textile sector, especially Micro, Small, and Medium Enterprises (MSMEs), in terms of compliance and additional costs. Individual European countries introducing their codes further complicates the scenario.
- **Diverse Compliance Challenges:** Compliance with ESG norms, particularly supply chain sustainability, proves challenging for the sector. MSMEs, constituting a significant portion of garment exporters, find it financially burdensome to meet various mandates, impacting margins.

- **Market Significance:** India's textile sector, a vital contributor to the country's exports, faces pressure due to its significant market share in the European Union. Exporting 16% of cotton textiles, 40% of synthetic fabric, and 28% of total apparel to European countries, aligning with ESG norms becomes imperative.
- **Complex ESG Parameters:** Challenges vary across different ESG parameters, such as discrepancies in labor issues and 'living wages' across textile-producing states. The use of recycled fibers faces quality challenges, impacting product pricing and market acceptance.

Significance of the Challenges:
- **Global Market Access:** Adhering to ESG norms is crucial for maintaining access to the European market, with major global brands insisting on sustainability. Failure to comply may result in a loss of orders and market share.
- **Sustainable Practices Showcase:** The sector's existing sustainable practices, including renewable energy usage and recycling initiatives, showcase India's commitment to environmental responsibility. Leveraging these practices can strengthen its position as a global supplier.
- **Need for Paradigm Shift:** The challenges present an opportunity for a paradigm shift in sourcing, production, pricing, and supply processes. Embracing sustainability not only aligns with global expectations but can enhance the sector's competitiveness.

Solutions and Future Steps:
- **Investment in Sustainability:** Exporters must invest in sustainability to leverage potential benefits from India's free-trade agreement with the EU. Documentation of existing sustainable practices and inclusive social initiatives becomes essential for showcasing achievements.
- **Industry Collaboration:** Industry associations and organizations should collaborate to help exporters implement systems, document measures, and obtain certifications for compliance with ESG norms. Collective efforts can streamline the process for MSMEs.
- **Government Support:** The Ministry of Textiles' formation of an ESG task force and potential supportive interventions indicate government recognition. Advocacy for supportive measures, financial assistance, and streamlined certification processes will aid the sector.

Nut Graf: India's textile sector confronts formidable challenges in meeting global ESG norms and CBAM requirements. However, these challenges also present an opportunity for transformation and global leadership in sustainable practices.

INTERNATIONAL RELATIONS

1. Gujral Doctrine

Syllabus: GS-2, India and its Neighborhood- Relations.

Mains: Gujral Doctrine

Context: November 30 marks the 11th death anniversary of IK Gujral, the 12th Prime Minister of India.
● Gujral was in the top post for less than a year, and his tenure does not get much individual attention among India's heads of government.
● However, he is the only Prime Minister with a foreign policy approach identified with his name — the Gujral Doctrine.

What is the Gujral Doctrine?
● It was during his second tenure as EAM (1996-1997) that Gujral delineated his approach towards India's neighbours, which later came to be known as the Gujral Doctrine.
● This consisted of five basic principles, as outlined by Gujral at a speech in Chatham House in London in September 1996.

5 Principles of Gujral Doctrine
● First, with the neighbours like Nepal, Bangladesh, Bhutan, Maldives and Sri Lanka, India does not ask for reciprocity but gives all that it can in good faith and trust.
● Secondly, no South Asian country will allow its territory to be used against the interest of another country of the region.
● Thirdly, none will interfere in the internal affairs of another.
● Fourthly, all South Asian countries must respect each other's territorial integrity and sovereignty.
● And finally, they will settle all their disputes through peaceful bilateral negotiations.

Analysis of Gujral Doctrine
● The Gujral Doctrine was based on the understanding that India's position and prestige could be better cemented by adopting a non-domineering attitude towards its smaller neighbours.
● It also emphasized the importance of keeping dialogue going, and avoiding needless provocations by commenting on the internal matters of other countries.
● This policy was formulated in the years after India's ties with many of its neighbours, including Bangladesh, Nepal, and Sri Lanka, had hit rocky patches, making it all the more significant.
● While Gujral did not name Pakistan, he did adopt the same approach towards that country to a degree. Under his tenure as EAM, India unilaterally eased travel restrictions, permitting Pakistani tourists to visit India in groups and easing travel for Pakistani businessmen to India.

Successes of Gujral Doctrine
● It helped strengthen trust and cooperation in India's Neighbourhood.
● Some concrete successes from this period include: the signing of Ganga Water Sharing Treaty with Bangladesh in 1996.
● Bhutanese consent for digging of a canal from a Bhutanese river to augment the flow of water to Ganga.
● Willingness to revise the controversial Mahakali treaty with Nepal which was received well in Nepal.
● Another key marker of the Doctrine's success was that Gujral's successors as PM, from Atal Bihari Vajpayee to Manmohan Singh, continued following the same approach, despite coming from different ideological camps.

Criticism of Gujral Doctrine
● Failure to convince MEA & RAW to follow the doctrine wholeheartedly.
● Negative impact on RAW's covert capabilities.
● Gujral was criticised for going too soft on Pakistan, and leaving India vulnerable to the threats of the future, including the many terror attacks.

2. Changing tide in Myanmar

Syllabus: GS-2, India and its Neighborhood- Relations.

Mains: India-Myanmar relations in the backdrop of the coup and aftermath

Context: Escalating civil war in Myanmar challenges junta post-coup as opposition militias gain ground.

Escalating Challenges for the Tatmadaw in Myanmar's Civil War
- **Shifting Dynamics:** The civil war in Myanmar has taken a significant turn since the February 2021 coup by the Tatmadaw, resulting in the ousting of the National League for Democracy-led government.
- **Recent Developments:** The Three Brotherhood Alliance (TBA) launched coordinated attacks in late October, causing setbacks for the ruling junta. These assaults have led to the loss of numerous bases, stretching the Tatmadaw's forces as they confront opposition militias, particularly in rural areas.
- **Formation of Opposition:** Responding to the coup, the National League for Democracy and its allies formed a National Unity Government (NUG) in exile. They established rebel militias known as the Peoples' Defense Forces, joined by ethnic groups like Karen, Kachin, Chin, and Karenni, challenging the junta's authority.
- **TBA's Role:** Previously maintaining a ceasefire status, members of the Three Brotherhood Alliance, including the Myanmar National Democratic Alliance Army, Ta'ang National Liberation Army, and the Arakan Army, have now entered the conflict, weakening the junta's hold in northern Shan State and escalating hostilities in Rakhine State.

International Response:
- **Global Stance:** While most international actors have condemned the coup, few have fully supported the NUG. The European Parliament stands out by recognizing the NUG as Myanmar's legitimate government.
- **India's Approach:** India, while advocating for democratic reforms, has cautiously engaged with the junta to counterbalance China's influence in Myanmar. This strategic approach influenced India's decision to allow junta soldiers fleeing violence in Chin State into Mizoram, facilitating their return through the Moreh border.

Reassessing Ties and Prospects for Myanmar's Future:
- **Junta's Actions:** Despite the NUG gaining increased legitimacy and the potential for a more democratic and federal Myanmar, the junta has resorted to oppressive tactics, including bombing civilian targets, to suppress resistance.
- **Need for Reevaluation:** Given these developments, there's a growing need for countries like India to reassess their ties with the junta and reconsider their stance in support of a democratic Myanmar.

Nut Graf: *Amid Myanmar's post-coup civil war escalation, the Three Brotherhood Alliance's attacks challenge the ruling junta. Global condemnation contrasts with India's cautious engagement to counter China's sway. As the junta resorts to harsh tactics, India grapples with a dilemma in its stance.*

3. Junta down but not out

Syllabus: Effect of policies and politics of developed and developing countries on India's interests.

Mains: Political instability in Myanmar

Context: The current state of affairs in Myanmar shows the military facing its most formidable challenge in six decades of dominance, as opposition fighters and ethnic rebels consolidate in the country's hinterlands.

Junta government in Myanmar:
- The **Junta government seized absolute power in Myanmar in February 2021** through a coup, ousting the elected civilian National League for Democracy (NLD)-led government.
- According to a UN report in 2023, the Junta government received arms worth $1 billion, with 90% coming from three countries: Russia (41%), China (27%), and Singapore (25%). India supplied arms totalling $51 million to Myanmar.
- The government is accused of **committing war crimes,** such as using fighter planes and artillery to bomb its own rural population, employing scorched-earth methods against rebels, and implementing genocidal policies, particularly against minorities like the Rohingya.

Resistance against the Junta government:
- **People's Defense Forces (PDF):** The People's Defense Forces (PDF), a militia group, are leading guerrilla warfare against the junta government and causing damage in areas dominated by the majority, the Bamar ethnicity.
- **National Unity Consultative Council (NUCC)**: Formed by the National League for Democracy (NLD), NUCC serves as a dialogue platform to unite fragmented pro-democratic forces in Myanmar.
- **Three Brotherhood Alliance:** The Arakan Army (AA), the Myanmar National Democratic Alliance Army (MNDAA), and the Ta'ang National Liberation Army (TNLA) carried out 'Operation 1027,' a coordinated attack against military bases across northern Shan State.
- **International sanctions:** Many countries have imposed international sanctions, including an arms embargo, against the Junta government.

Nut Graf: *Despite a lack of popular support and a rising rebellion against military rule, the Junta government retains its hegemony through the successful use of ethnic divisions and the resourcefulness of the military.*

4.   Is the emerging global order bipolar?

Syllabus: GS-2, Effect of Policies and Politics of Developed and Developing Countries on India's Interests

Mains: Evolving Global order and choices India has in an emerging bipolar order

Context: The debate revolves around an emerging bipolar order amid U.S.-China rivalry, Russia's alliances, India's choices, and global conflict concerns.

Overview of the Global Order:
- The current global order is characterized by significant disruptions, including China's rapid rise, superpower competition between the U.S. and China, Russia challenging European security, and conflicts in West Asia.
- The emergence of middle powers like India adds complexity to the global balance of power.

Perspectives on Global Order:
- Debates exist on whether the global order is economically multipolar but militarily unipolar, or if it reflects a return to bipolar rivalry between the U.S. and China.
- The world is described as experiencing asymmetric bipolarity, with the U.S. remaining preeminent but China closing in rapidly, alongside other emerging power centres.

Impact of China's Rise:
- China's economic and military rise over the past four decades has been unprecedented, significantly influencing the international order.
- China's economic leverage, controlled by a single party and leader, contributes to the redefinition of global order.

Russia's Alignment with China:
- Economic sanctions imposed on Russia led to a closer alignment with China, but underlying mistrust persists, especially concerning the balance of power in Central Asia.
- Russia seeks to diversify its relationships, including a renewed focus on ties with India through strategic corridors.

India's Diplomatic Challenges:
- India maintains good ties with the U.S. and Russia but faces a testy relationship with China.
- The intensification of great power competition between China, the U.S., and Russia may limit India's diplomatic options but does not necessarily lead to a rigid bipolar system.

India's Strategic Approach towards China:
- Acknowledgement of China as a long-term competitor in Asia and recognition of power asymmetry.
- Focus on enhancing comprehensive national power, economic growth, military modernization, and disruptive technologies.
- Emphasis on internal balancing to address societal fault lines and external balancing to perpetuate China's two-front dilemma.

Global Security Situation:
- Wars in Eastern Europe (Ukraine-Russia conflict) and West Asia (Israel-Hamas conflict) have heightened global awareness.
- Consideration of political factors, such as U.S. support for Ukraine and Israel, driven by political compulsions and historical alliances.
- Deeper concerns about the role of the military-industrial complex in perpetuating violence and conflicts worldwide.

Nut Graf: *Examining the global order's trajectory, the debate centres on whether a bipolar system is emerging. Amidst U.S.-China competition, Russia's alliances, and India's strategic choices, the analysis navigates evolving power dynamics, potential conflicts, and the intricate interplay shaping the complex geopolitical landscape of the 21st century.*

5.   India-Maldives Ties

Syllabus: Regional and global groupings and Agreements involving India and/or affecting India's interests

Mains: India-Maldives Ties

Context: India and the Maldives, during the sidelines of COP-28, have agreed to establish a core group aimed at intensifying their partnership. Prime Minister Narendra Modi and Maldivian President Mohamed Muizzu engaged in a "productive" meeting, addressing diverse sectors of cooperation.

Issues

- **Historical Relations:** The meeting marks the first interaction between Prime Minister Modi and President Muizzu, setting the stage for renewed diplomatic engagements.
- **Diverse Sectors:** The leaders deliberated on ways to enhance friendship across various sectors, indicating a comprehensive approach to bilateral ties.
- **Economic Relations:** Focus on bolstering economic relations signifies an intent to strengthen trade and investment ties between the two nations.
- **Development Cooperation:** Discussions include strategies to enhance development cooperation, likely encompassing infrastructure projects and shared developmental goals.
- **People-to-People Ties:** Recognition of the importance of people-to-people ties suggests a commitment to fostering cultural, educational, and social exchanges.

Significance

- **Establishment of Core Group:** The decision to form a core group demonstrates a strategic commitment to deepening and institutionalizing the partnership.
- **Diplomatic Collaboration:** The meeting on the sidelines of COP-28 indicates a shared interest in addressing global challenges, reinforcing diplomatic collaboration.
- **Mutual Cooperation:** Acknowledgment of the need to work together implies a mutual understanding of shared interests and regional stability.
- **First Interaction:** The meeting being the first between Modi and Muizzu adds significance, signifying a new phase in bilateral relations.

Solutions

- **Enhanced Cooperation:** The commitment to deepen cooperation indicates a willingness to explore new avenues for collaboration, paving the way for joint initiatives.
- **Strategic Partnership:** The establishment of a core group lays the groundwork for a more structured and strategic partnership, facilitating focused efforts.
- **Multi-Sectoral Approach:** Addressing diverse sectors highlights the intention to create a multi-faceted relationship, fostering growth and stability.
- **Regular Consultations:** The core group can serve as a platform for regular consultations, ensuring continuous dialogue and proactive problem-solving.

Nut Graf: The meeting between Prime Minister Modi and President Muizzu on the sidelines of COP-28 signifies a commitment to strengthening the ties between India and the Maldives.

6. Maldives to quit hydrographic survey with India

Syllabus: Effect of policies and politics of developed and developing countries on India's interests.

Mains: India – Maldives relations

Context: Maldives decided not to renew the 2019 MoU with India for joint hydrographic surveying. There is a demand for the withdrawal of Indian troops from the island nation.

Joint Hydrographic Survey Decision:
- **Cabinet Decision:**
  - The Cabinet in Malé decided not to renew the MoU due to expire in 2023.
  - Mohamed Shahyb, Chief Spokesperson, cites it as a Cabinet decision without specifying reasons.
- **Background of Surveys:**
  - Three joint hydrographic surveys have been conducted since the 2019 agreement.
  - Aims to generate updated Navigational Charts for enhanced navigational safety and Blue Economy development.
- **Critics' Opposition:**
  - Government critics, part of the 'India Out' campaign led by Abdulla Yameen, oppose the initiative.
  - Allegations of infringement on Maldivian sovereignty.

Troop Withdrawal Demand:
- **President's Announcement:**
  - President Muizzu announced the demand for the withdrawal of Indian troops.
  - The announcement was made after a meeting with PM Modi at the COP-28 summit in the UAE on December 2.
- **Leaders' Discussion:**
  - Brief discussion between PM Modi and President Muizzu on the troop withdrawal issue.
  - The MEA does not comment on the President's announcement.

Way Forward:
- **Communication and Diplomacy:**
  - Engage in diplomatic discussions to understand the reasons behind the decisions.
  - Seek clarification on concerns raised by government critics.
- **Addressing Sovereignty Concerns:**
  - Provide reassurances about the collaborative nature of joint initiatives.
  - Emphasize mutual benefits and respect for Maldivian sovereignty.
- **Negotiation on Troop Withdrawal:**
  - Open dialogue channels to address concerns and negotiate conditions.
  - Work towards a mutually agreeable solution to maintain bilateral cooperation.

Nut Graf: The developments in Maldives' decisions pose challenges to the India-Maldives relationship. Diplomatic efforts are needed to understand and address concerns, ensuring a harmonious partnership.

7.   What's the latest blip in India-Maldives ties?

Syllabus: Bilateral, regional and global groupings and agreements involving India and/or affecting India's Interests

Mains: India-Maldives ties

Context: The recent decision by the Maldives Cabinet not to renew the Memorandum of Understanding (MoU) with India for cooperation in hydrography has raised concerns about the trajectory of India-Maldives ties.
- This move follows President Mohamed Muizzu's pledge to send back Indian troops stationed in the archipelago, signaling a departure from the previous administration's 'India first' policy.
  1. **Hydrography and India's Expertise**
     - Definition: The science of studying oceans, seas, and water bodies to compile and analyze data for various purposes.
     - India's Role: Actively engaged in hydrography since 1955, with the Indian Naval Hydrographic Department (INHD) playing a pivotal role.
     - International Collaboration: India collaborates with numerous countries, including Mauritius, Seychelles, Tanzania, Maldives, Mozambique, Vietnam, Myanmar, Kenya, and Sri Lanka.
  2. **Significance of the 2019 MoU**
     - Context: Signed during Prime Minister Narendra Modi's visit to the Maldives in June 2019.
     - Commitments: Emphasized close cooperation in development, defence, and maritime security.
     - Joint Surveys: Led to joint hydrographic surveys conducted by the Maldives National Defence Force (MNDF) and the Indian Navy in subsequent years.
  3. **Cabinet's Decision and Reasons**
     - Non-Renewal: The Maldives Cabinet decided not to renew the hydrographic survey agreement.
     - National Security Concerns: The decision aligns with President Muizzu's pledge to terminate agreements detrimental to national security.
     - Sovereignty Focus: Emphasizes the improvement of the military's capacity for surveilling and policing waters without foreign involvement.
  4. **India's Response**
     - **MEA Statement:** India, responding for the first time, highlighted its proven track record in hydrography.
     - **Cooperation Benefits:** Stressed the visible benefits to partner countries through India's hydrography expertise.
  5. **Implications for India-Maldives Ties**
     - **Challenges Ahead:** The decision signals a potential challenge for India in its relationship with the Maldives.
     - **Strategic Shift:** President Muizzu's focus on 'restoring sovereignty' and exploring collaboration with China suggests a shift in strategic priorities.
     - **Security Conclave Skip:** Maldives skipping the recent Colombo Security Conclave meeting adds to concerns about regional security cooperation.
  6. **India's Approach and Diplomacy**
     - **Navigating Challenges:** India must navigate the evolving dynamics and address concerns while promoting collaboration.
     - **Belief in Expertise:** India's diplomatic response reflects a belief that neighboring countries should tap into the benefits of its hydrography expertise.

Way forward
- **Diplomatic Engagement:** India should engage in diplomatic dialogue to understand the Maldives' concerns and find common ground.
- **Showcasing Benefits:** Emphasize the mutual benefits of collaboration, showcasing India's expertise in hydrography.

Nut Graf: The termination of the hydrographic survey agreement and the broader shift in the Maldives' strategic priorities pose challenges for India-Maldives ties.

8. India-Oman relations

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Mains: India-Oman relations

Context: Sultan Haitham bin Tarik's state visit to India from December 16, 2023. The significance of the visit given Oman's strategic importance to India.

Historical Ties
- Trade between India and Oman has a history of several millenniums and archaeological excavations in Oman have unearthed evidence to show Indo-Oman trade during the Classical Age dated to circa third century BCE.
- Later, Oman had links with the Indians through Gujarat, and with Tamilakam along the Malabar Coast.
- The Sultans of Oman and Zanzibar heavily banked on Kutchi moneylenders such as Jairam Shivji.
- A large number of Kutchi Bhatias migrated from Kutch to Muscat and from Muscat to Zanzibar.

Contemporary Ties
- The relationship was upgraded to Strategic Partnership in 2008 during Prime Minister Manmohan Singh's visit to Oman.
- Oman has been a key pillar of India's West Asia Policy.
- Oman is a strategic partner of India in the Gulf and an important interlocutor at the Gulf Cooperation Council (GCC), Arab League, Indian Ocean Rim Association (IORA) and Indian Ocean Naval Symposium (IONS).

Oman's Strategic Importance:
- **Geopolitical Significance:**
  - Proximity to India, key Omani ports along the Arabian Sea, Gulf of Oman, and access to the Persian Gulf.
  - Oman, along with Saudi Arabia and the UAE, forms a crucial strategic partnership for India in the Gulf region.
- **Historical Ties:**
  - Strong historical connections between the ruling family of Oman and India.
  - Sultan Qaboos' positive stance towards India, inviting Indian companies and professionals.
- **Role in Diplomacy and Peace:**
  - Oman's role as an island of peace in a conflict-prone region.
  - Pursuit of a foreign policy based on moderation, mediation, and deliberate neutrality.
- **Key Diplomatic Engagements:**
  - Oman's role in diffusing tensions during the Persian Gulf crisis in 2019.
  - Oman's involvement in the Iran nuclear deal in July 2015.
  - Refusal to join the diplomatic ties break with Qatar in 2017.

India-Oman Strategic Partnership:
- **Defence and Security:**
  - MoU in 2005 governing defence and security engagement.
  - Joint exercises with all three wings of India's defence forces.
  - Joint Military Exercises: Al Najah (Army exercise), Eastern Bridge (Air Force exercise), Naseem Al Bahr (Naval Exercise).
  - Duqm Port: In 2018, India announced that it had secured access to the facilities at Duqm for the Indian Air Force and the Indian Navy.
  - During the Persian Gulf crisis in June 2019, the Indian Navy launched 'Operation Sankalp' to ensure the safe passage of Indian-flagged ships which most often operated off the coast of Oman.
  - Operation Kaveri in Sudan & Anti-Piracy Missions in the Gulf of Aden.
- **Economic & Cultural Ties**
  - Oman is a major supplier of oil, minerals, LNG, polyethene, propylate, aluminium, and urea to India.
  - For Oman, India was the 3rd largest (after UAE and China) source for its imports and 3rd largest market (after UAE and Saudi Arabia) for its non-oil exports.
  - Major Indian financial institutions have a presence in Oman.
  - In 2022, India and Oman launched the Rupay debit card in Oman, a key footprint of India's initiative of promoting digital public infrastructure (DPI) in the world.
  - Indian companies have invested in Oman in sectors like iron and steel, cement, fertilizers, textiles, etc.
  - There is a large Indian community of almost 7 lakh people.
- **Trade and Commerce:**
  - Bilateral trade reaching $12.388 billion in FY2022-23.
  - Over 6,000 India-Oman joint ventures with an investment of over $7.5 billion.
  - India was the second-largest market for Oman's crude oil exports in 2022.

- **Recent Developments:**
  - Launch of Rupay debit card in Oman in October 2022.
  - MoU on space cooperation and the potential agreement on joint exploration of rare earth metals.
  - Proposal for the India-Middle-East-Europe Connectivity Corridor (IMEEC) and the South Asia Gas Enterprise (SAGE) pipeline project.

Nut Graf: *Oman is India's gateway to West Asia, playing a vital role in regional stability. The ongoing Israel-Hamas war adds significance to Sultan Haitham bin Tarik's visit, making it timely and crucial for India and the region.*

9. A dark shadow on New Delhi's credibility

Syllabus: GS-2, Effect of Policies and Politics of Developed and Developing Countries on India's interests, Indian Diaspora.

Prelims: International Court of Justice, Five Eyes

Mains: Impact of alleged covert operations on India's image in global politics

Introduction
- The U.S. recently indicted an Indian national for allegedly targeting Khalistani separatists in North America on behalf of an Indian official, though the official's exact involvement is unclear.
- Experts have highlighted that in public diplomacy, the key rule is to never get caught in a lie or denying a truth.
- This might lead to a credibility crisis in Indian diplomacy.

Credibility Crisis
- While unproven, the allegations damage New Delhi's credibility in both covert operations and public messaging.
- India must address the credibility crisis initiated by the indictment over its perceived role in unlawful covert action.
- It could also raise other doubts regarding the potential history of deceptive public messaging from India.

Operations in Limelight
- In recent years, intelligence operations by India have been legally challenged in other countries. Some of the examples are:
  - The forcible return of a UAE princess in 2018
  - The attempted kidnapping of a businessman in Antigua in 2021
  - The conviction of Indian naval officers for espionage in Qatar.
- India has also challenged the extrajudicial trial of Kulbhushan Jadhav in Pakistan since 2016 at the International Court of Justice (ICJ).
- Lists circulating of alleged Indian operations against wanted individuals in Pakistan, Nepal, Europe, and Thailand have been praised as proof of India's global reach, though the government has not accepted ordering them.

Impact on US Relations
- In the context of empowering security agencies, India must address the alleged conspiracy to kill Gurpatwant Singh Pannun in the US, which was linked to a murder in Canada.
- The US indictment alleges one conspiracy directed by an Indian intelligence official using an undercover US officer as a hitman, and another conspiracy by US agencies to entrap the Indian.
- Despite high-level 2022 meetings, the US did not fully share information with India, failing to prevent embarrassment when the indictment was published, questioning claims of cooperation between India and the US.
- The U.S. does not trust the information India provided about Mr. Pannun, Nijjar, and the Khalistani separatist movement.
- It is more focused on the alleged plot against them than curbing the separatists' activities.
- India is deeply concerned about Mr. Pannun's radical rhetoric and threats and hence the U.S. actions feel like a breach of trust to India.
- The U.S. actions remind India of the limited intelligence sharing in 2008 before the Mumbai terror attacks. In this case, the US did not reveal the source of the information was Lashkar-e-Taiba operative David Coleman Headley.
- He could not be brought to full justice in India.
- This shows that there is a trust deficit even as India-U.S. ties grow.

Impact on Regional Relations
- India should also consider how its expulsion of Canadian diplomats affects relations with Five Eyes allies.
- India reacted strongly to Khalistani issues abroad while accepting U.S. allegations more calmly and setting up a high level inquiry to investigate them.
- This shows that double standards exist despite strengthening of the India-U.S. partnership.
- India must address how the case impacts neighbouring countries like Sri Lanka, Bangladesh, Nepal, and the Maldives, who stood with India on the Canadian issue but now question India's activities within their borders
- South Asian countries will study the footprint of Indian agencies in their countries as details of the U.S. indictment emerge
- India must reassure regional neighbours to maintain relationships, especially with strategic countries like Nepal, Bangladesh, Maldives, and Sri Lanka where concerns already exist about India's political influence

Conclusion
- India's actions now will have an impact on its global image – either as a "hard power" willing to pursue threats illegally abroad at any cost, or one that builds international support through diplomacy to achieve ends lawfully, albeit slowly
- India's government has categorically stated covert, extrajudicial assassinations are not its policy and the allegations will be investigated
- A deeper investigation is needed to reveal whether India's actions actually align with its stated values and interests

Nut Graf: The recent indictment by the U.S. for allegedly targeting Khalistani separatists in North America casts a shadow over India's credibility in both covert operations and public messaging. This incident highlights the challenges India faces in balancing its security concerns with its diplomatic relations, particularly with its Five Eyes allies and regional neighbours.

10. Navigating the U.S.-China relationship

Syllabus: Effect of Policies and Politics of Developed and Developing Countries on India's Interests

Mains: USA-China conflict and Taiwan angle

Context: The second summit between U.S. President Joe Biden and Chinese counterpart Xi Jinping happened in San Francisco on November 15 and aimed to revive their strained bilateral relationship, currently at its weakest since 1979.

Recent Summit and Outcomes:
- President Joe Biden and President Xi Jinping met in San Francisco during the Asia-Pacific Economic Cooperation conference.
- Aimed at improving the deteriorating U.S.-China relationship, the summit's significant achievement was the decision to reinstate military-to-military communications.
- Military Maritime Consultative Agreement, crucial for preventing potential misunderstandings between nuclear-armed nations, will resume.

Taiwan Conflict:
- Nancy Pelosi's visit to Taiwan in 2022 led to the closure of military communication channels between the U.S. and China.
- Taiwan remains a contentious issue, with China striving for reunification while the U.S. recognizes Beijing as the legitimate Chinese government but maintains ties with Taiwan under the Taiwan Relations Act.
- Beijing condemned U.S. officials' visits to Taiwan, warning of severe repercussions and conducting military exercises near Taiwan's coast.

Trade Dispute:
- The U.S. and China are navigating a volatile economic and trade policy framework amid political hostility.
- President Biden blacklisted Chinese defence and surveillance companies, building on actions taken by the Trump administration in 2019.
- Both countries leverage their strengths to inflict damage, with the U.S. imposing controls on semiconductor exports and China responding with bans on critical materials.

Export Controls and Countermeasures:
- The U.S. implemented export controls on advanced computer chips to undermine China's progress in AI and supercomputing.
- China retaliated with bans on Gallium, Germanium, and Graphite exports, impacting microchip and electric vehicle battery production.
- Additional measures include China tightening anti-espionage and data protection laws, affecting digital tools and server operations.

Future Outlook and Pragmatic Coexistence:
- The bilateral dispute's escalation, characterized by a power struggle, continues under President Biden's leadership.
- There is a subtle shift towards exploring pragmatic avenues of coexistence, emphasising de-risking the two economies rather than disengagement or 'decoupling.'
- This nuanced approach represents a slight dose of realism in navigating the complex U.S.-China relationship, offering hope for a reduction in hardline positions in the short term.

Nut Graf: In the wake of a strained U.S.-China relationship, the San Francisco summit between President Biden and Xi yielded crucial military communication restoration, aiming to avert catastrophic misunderstandings. Amidst trade disputes and geopolitical tensions, there's a cautious pivot towards pragmatic coexistence, hinting at a nuanced shift in managing this complex superpower dynamic.

11. India's Growing Neighbourhood Dilemmas

Syllabus: India and its Neighborhood- Relations.

Mains: Challenges India facing in its Neighbourhood and the way forward

Introduction: India's Neighbourhood Dilemmas
- Contemporary Indian foreign policy faces significant challenges within its neighbourhood, hindering its ambitious global aspirations. The presence of politically anti-India regimes, structural challenges from China's influence, and evolving geopolitical dynamics contribute to New Delhi's dilemmas.

Types of Dilemmas: Political and Structural Challenges
- **Politically Anti-India Regimes:**
  - The emergence of anti-India regimes, exemplified by the Maldives, poses a direct challenge to Indian influence.
  - The prospect of ideologically anti-India governments, as seen in upcoming elections in Bangladesh, adds complexity to the regional landscape.
- **Structural Challenges from China:**
  - China's increasing influence in South Asia, particularly through the Belt and Road Initiative (BRI), creates a dilemma for India.
  - Beijing's adept outreach to South Asian states, coupled with deeper pockets, amplifies its impact compared to India's efforts.

Causes of Dilemmas: Regional Geopolitical Architecture
- **Diminishing US Presence:**
  - The diminishing presence of the United States in South Asia leaves a power vacuum, exploited by China.
  - China's rise serves as a geopolitical buffer for smaller states, allowing them to leverage the 'China card' in their foreign policy.
- **China as a Material Power:**
  - In a region with limited interconnectivity and resources, states gravitate toward a power that can fulfil their material needs.
  - China's economic prowess positions it as a preferred partner, impacting India's regional standing.
- **Norms-Free Zone:**
  - China's non-normative approach alters the traditional norms-centric calculus in South Asia.
  - The region becomes a 'norms-free zone,' challenging India's normative and political approach.
- **Shift in Regional Power Dynamics:**
  - India's historical primacy in the region is contrasted with China's non-resident power status, avoiding complications associated with being a resident power.

Policy Stance and Assumptions: Status Quo Bias and Mistaken Assumptions
- **Status Quo Bias:**
  - India's policy stance exhibits a status quo bias, engaging primarily with those in power, leading to path-dependencies and alienation of other power centres.
- **Mistaken Assumptions:**
  - The belief that South Asia minus Pakistan would align with Indian geopolitical reasoning has been proven inaccurate.
  - The assumption that India's cultural and historical ties would naturally facilitate better relations has faced challenges, prompting a reassessment.

Recommendations: Adapting to Changing Realities
- **Acknowledging Changed Dynamics:**
  - India must acknowledge the fundamental shift in the balance of power in South Asia, recognizing China's emergence as a serious contender.
- **Involvement of External Actors:**
  - Proactive engagement of friendly external actors in the region becomes crucial to counter the possibility of a Sino-centric influence.
- **Flexible Diplomacy:**
  - Indian diplomacy should be flexible, engaging multiple actors within neighbouring countries to mitigate anti-India sentiments.
  - A focus on engaging with diverse political elements, not just those in power, is essential for effective diplomacy.
- **Enhancing Diplomatic Capacity:**
  - Addressing the shortage of diplomats is imperative for India to effectively implement its foreign policy.
  - Increased diplomatic capacity is essential as India's role in global affairs expands, ensuring a timely and robust response to opportunities and crises.

Nut Graf: *India's foreign policy confronts complex challenges within its neighbourhood. The rise of anti-India regimes and China's expanding influence pose significant dilemmas. Shifts in regional power dynamics and mistaken policy assumptions further compound these issues. Adapting to these changing realities necessitates acknowledging altered power dynamics, engaging external actors, adopting flexible diplomacy, and addressing diplomatic capacity shortages.*

12. India-Sri Lanka Ties

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Mains: India-Sri Lanka Ties

Context: Sri Lanka's President, Ranil Wickremesinghe, recently proposed establishing land connectivity with India, reviving a two-decade-old vision of building a bridge between Rameswaram in Tamil Nadu and Talaimanar in Sri Lanka.

- This proposal aligns with the broader goal of regional economic integration, fostering growth opportunities for both nations.

  1. **Historical Context:**
     - Ranil Wickremesinghe proposed the bridge idea in Chennai two decades ago, envisioning regional economic integration.
     - Opposition from groups claiming to represent Sinhalese-Buddhists often stalled progress, citing concerns about the project's benefits.

  2. **Recent Developments:**
     - A joint statement in July between Wickremesinghe and Prime Minister Narendra Modi reiterated the commitment to land connectivity, mentioning a feasibility study.
     - Wickremesinghe, in his recent Budget address, highlighted the project's importance for utilizing Colombo and Trincomalee ports to meet India's supply needs.

  3. **Infrastructure Gaps:**
     - Despite shared aspirations, the relationship's depth in infrastructure development is lacking.
     - For example, the idea of connecting the electricity networks of the two countries was floated even in 1970.
     - Over 13 years have elapsed since the two countries signed a memorandum of understanding on the bilateral grid, but not even one unit of electricity has been transmitted.
     - Progress in energy collaboration with Bangladesh surpasses that with Sri Lanka.

  4. **Trade and Economic Ties:**
     - The India-Sri Lanka Free Trade Agreement (1998) has not seen significant advancements, and economic cooperation negotiations resumed recently.
     - India has regained its position as the largest source of imports for Sri Lanka, accounting for about 26% of total imports.

  5. **Potential and Underperformance:**
     - Bilateral trade between India and Sri Lanka in 2021 was $5.45 billion, significantly lower than India's trade with Bangladesh ($18.14 billion).
     - Tourism, a major revenue source for Sri Lanka, has untapped potential despite India being the largest source of tourist arrivals.

  6. **Initiatives and Momentum:**
     - Recent developments, such as the resumption of air services and joint ventures, indicate positive momentum.
     - Sustaining and enhancing initiatives, like passenger ferry services and economic collaborations, is essential for progress.

  7. **Learning from Bangladesh:**
     - Sri Lanka, despite historical challenges, should learn from Bangladesh in establishing mutually beneficial economic relationships.
     - Overcoming political hurdles and fostering economic cooperation are crucial for shared prosperity.

Way forward:
- **Sustained Initiatives:**
  - Continue and enhance recent initiatives like air services, joint ventures, and passenger ferry services.
  - Explore new avenues for collaboration in various sectors, including trade, tourism, and infrastructure.
- **Political Will:**
  - Address historical opposition by showcasing the potential benefits of enhanced connectivity and cooperation.
  - Emphasize the economic advantages and job creation potential to garner political support.
- **Comprehensive Economic Agreement:**
  - Accelerate negotiations on an economic and technology cooperation agreement, building on the existing Free Trade Agreement.
  - Establish a comprehensive framework for economic collaboration to address trade and investment barriers.

Nut Graf: *Bridging the deficit between India and Sri Lanka is not merely a matter of physical connectivity but a strategic imperative for shared economic growth.*

13. Sri Lanka reaches deal with India & Paris Club

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Mains: India-Sri Lanka Ties

Context: Sri Lanka has reached an "agreement in principle" with India and the Paris Club group of creditors including Japan, on a debt treatment plan that will help the crisis-hit island nation tap the next tranche of the International Monetary Fund's nearly-$3 billion recovery package.

Sri Lanka's Debt Restructuring
● At the height of last year's crippling economic crisis, Sri Lanka decided to default on its nearly $51 billion foreign debt.
● A comprehensive restructuring of loans became necessary to begin an economic recovery programme backed by the IMF.
● Major lenders formed the Official Creditor Committee (OCC) in May 2023 in response to Colombo's request for debt treatment.
● It is co-chaired by India, Japan, and France, as chair of the Paris Club.
● The Committee has held several discussions with Sri Lankan authorities over the last few months, evaluating possible options in recasting Colombo's outstanding debt, such as altering the interest payments or the terms of the loans.
● China, Sri Lanka's largest bilateral creditor, has opted to stay out of the platform, but has attended the meetings as an observer.

14. European Free Trade Association

Syllabus: GS 2- International Relations

Prelims: About European Free Trade Association

Introduction
● Trade Ministers from Switzerland and Norway are visiting Delhi, raising hopes for progress in the India-European Free Trade Association (EFTA) negotiations.
● Ongoing talks for the Trade and Economic Partnership Agreement (TEPA) and Bilateral Investment Treaty (BIT) between India and EFTA countries, including Iceland, Liechtenstein, Norway, and Switzerland, have faced challenges over the past 15 years.

Key Points of Concern
● Despite multiple rounds of negotiations, key issues remain unresolved.
● Trade barriers, especially high tariffs on EFTA countries' exports to India, are a major point of contention.
● Unresolved issues include trade in goods, mobility of services, and market access, with a focus on reducing barriers for high-value-added products.

Challenges Faced by Indian Negotiators
● India's small pool of skilled trade negotiators faces challenges, managing multiple negotiations simultaneously, including those with the U.K., the EU, and Australia.
● India-U.K. FTA talks are still ongoing, India-EU comprehensive Bilateral Trade and Investment Agreement (BTIA) progress is slow, and the India-Australia Comprehensive Economic and Commercial Agreement (CECA) remains unsigned.

15. Putin's visit to the Gulf

Syllabus: Effect of Policies and Politics of Developed and Developing Countries on India's Interests

Mains: Alignment, dealignment and realignment in West Asia and its Impact on India

Context: Putin's Gulf tour signifies Russia's pivot to Gulf states, aligning with Iran, challenging U.S. dominance, and asserting a role in West Asian affairs.
● **Convergence of Gulf Countries and Russia:**
  ○ **Recent Visits:** Putin's December 6 visit to Abu Dhabi and Riyadh marked a significant shift in Russia's diplomatic engagements.
  ○ **Mutual Affirmations:** Hosts, including UAE ruler Sheikh Mohamed bin Zayed, emphasized the importance of dialogue and cooperation. Putin echoed sentiments, stating that nothing should hinder the development of friendly relations.
  ○ **Changing Alliances:** Despite historical alliances with the U.S., both the UAE and Saudi Arabia are prioritizing ties with China and Russia, asserting "strategic autonomy."

- **Russia and Iran Angle:**
  - **Joint Opposition to Western Sanctions:** Russia and Iran, facing Western sanctions, are challenging global strategic leadership and advocating for a multipolar world order.
  - **Bilateral Relations:** Substantial ties in energy and military domains, joint naval exercises in the Gulf of Oman, and reported arms deals, such as Iran acquiring Sukhoi Su-35 aircraft from Russia.
  - **Common Challenges:** Discussions during President Raisi's visit covered Gaza, Ukraine, and oil prices. Both leaders called for an end to Israel's actions, accusing the U.S. and Western powers of backing such actions.
- **Putin's Agenda:**
  - **Strategic Messaging:** Putin's overseas trip served as a message that Russia is not isolated and has close allies in the Gulf, challenging the notion of isolation due to Western restrictions.
  - **Assurance of Regional Stability:** Leveraging Russia's ties with Iran, Putin assured Gulf states that the Gaza war wouldn't escalate, indicating Iranian restraint on Hezbollah and Houthis for regional stability.
  - **Seeking Alignment:** Putin aimed for deeper alignment between Gulf Cooperation Council states and Iran, positioning Russia and China as guarantors of regional peace.
  - **Post-Gaza Scenario:** Seeking support for a united approach with Russia and China in managing post-Gaza diplomatic challenges, excluding the U.S. from this regional alignment.
  - **Continuity in Regional Approach:** Putin assured Gulf leaders of Russia's consistent regional approach, signalling his intention to seek re-election in 2024 and lead Russia until at least the end of the decade.
- **Russia and China Axis in West Asia and Declining Hegemony of the U.S.:**
  - **Strategic Partnership:** Putin recognized China as a key player in regional politics, aligning with Russia to complement China's diplomatic role.
  - **Challenging U.S. Hegemony:** The Sino-Russian alliance aims to challenge U.S. hegemony, with Russia affirming its role in West Asian affairs and signalling a shift in the regional political order.
- **Israel-Hamas Angle:**
  - **Joint Opposition:** Putin and Raisi jointly opposed Israel's actions in Gaza, accusing the U.S. and Western powers of supporting what they termed as "genocide and crimes against humanity."
  - **Exclusion of U.S.:** The alignment with Russia and China was positioned as an alternative to the U.S., which has been criticised for its unconditional support for Israel, potentially excluding the U.S. from future regional diplomatic arrangements.

Nut Graf: *In a dramatic move, Russian President Putin's whirlwind Gulf tour, emphasizing ties with UAE and Saudi Arabia, signifies a strategic shift. Amidst growing Russian-Iranian alignment, Putin aims to assure regional stability post-Gaza war and foster a united front against U.S. hegemony. This signals Russia's intent to lead West Asian affairs, challenging traditional alliances in a multipolar global order.*

16. Surge in Indian illegal migration to US

Syllabus: Indian Diaspora

Mains: Trend of migration from India and across international borders, its possible impacts on bilateral relations.

Context: In response to a question in the Rajya Sabha, it was revealed that the U.S. has encountered a significant increase in illegal Indian migrants, reaching almost 100,000 in 2023.

Illegal Migration Trend in U.S.:
- Over the last four years, there has been a significant surge in illegal migration to the United States.
- U.S. Customs and Border Protection data reveals encounters with nearly 100,000 illegal Indian migrants in 2023 alone.
- The trend contrasts with the previous decade, where the number of Indian illegal migrants was comparatively low, crossing the 10,000 mark only in recent years.

Indian Migration and Trend:
- The number of Indians attempting to enter the U.S. illegally has risen sharply, reaching 96,917 in 2023.
- This surge gains attention amid the upcoming U.S. presidential elections, with illegal border crossings being a key concern for voters.
- Former President Donald Trump attributes the rise to the reversal of his immigration policies by President Joe Biden.

Migration from Northern and Southern Border:
- Historically, the majority of illegal border crossings occurred at the U.S.-Mexico border (southwest).
- In 2023, 77% of all illegal migrants entered through the southwest border, while the northern border with Canada accounted for approximately 6%.
- Notably, there's a rising trend among Indian migrants choosing the northern border, with numbers increasing from less than 100 in 2014 to over 30,000 in 2023.

Trump Policy and Migration:
● Former President Trump's immigration-related policies, reversed by President Biden, are seen as a contributing factor to the surge in illegal migration.
● Trump's policy of separating minors from their families was a controversial measure, resulting in over 5,000 children being separated.
● Despite a recent federal judge's decision against the separation of minors, there is an observed increase in both accompanied and unaccompanied Indian minors attempting to cross the border.

Nut Graf: In recent years, the United States has witnessed a dramatic surge in illegal migration, notably from India, with nearly 100,000 encounters in 2023 alone. This rise coincides with the U.S. presidential elections and is linked to policy changes, including the reversal of immigration measures by President Biden. Notably, there's a shift in border preferences among Indian migrants, increasingly favouring the northern border with Canada.
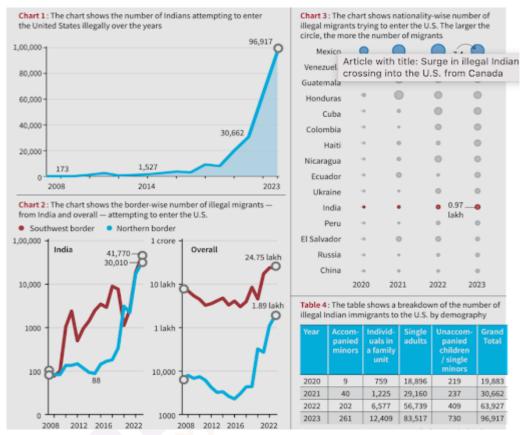
Chart 1: The chart shows the number of Indians attempting to enter the United States illegally over the years

Chart 2: The chart shows the border-wise number of illegal migrants — from India and overall — attempting to enter the U.S.
● Southwest border ● Northern border

Chart 3: The chart shows nationality-wise number of illegal migrants trying to enter the U.S. The larger the circle, the more the number of migrants

Article with title: Surge in illegal Indian crossing into the U.S. from Canada

Table 4: The table shows a breakdown of the number of illegal Indian immigrants to the U.S. by demography

Year	Accompanied minors	Individuals in a family unit	Single adults	Unaccompanied children / single minors	Grand Total
2020	9	759	18,896	219	19,883
2021	40	1,225	29,160	237	30,662
2022	202	6,577	56,739	409	63,927
2023	261	12,409	83,517	730	96,917

Diagram: Migration trend in the U.S. Source: The Hindu

17.   Gaza, a new pointer to India's changed world view

Syllabus: Effect of policies and politics of developed and developing countries on India's interests.

Mains: India's evolving stance on the Israel-Gaza conflict

Context: India's evolving stance on the Israel-Gaza conflict serves as a reflection of the recent transformations in its foreign policy. From the early days of independence, marked by a commitment to "strategic autonomy" and non-alignment, to the present era characterized by changing geopolitical dynamics, India's position has undergone a significant shift.

Historical Context
● India's initial approach was rooted in its anti-colonial sentiment, aligning with the USSR against Western powers on issues of imperialism and apartheid. This manifested in its vote against the partition of Palestine in 1947, drawing parallels with its own experience of partition during the creation of Pakistan.

Recognition of Israel
● While India eventually recognized Israel after its establishment, diplomatic relations remained limited for over four decades. Simultaneously, India became the first non-Arab country to recognize the Palestine Liberation Organization (PLO) and the Palestinian state, showcasing a commitment to a two-state solution.

Shift in Relations
● The rise of Pakistan-backed Islamic militancy against India became a turning point. Shared concerns about Islamist extremism led to increased security and intelligence cooperation between India and Israel. Successive Indian governments continued supporting the PLO, emphasizing a peaceful resolution to the Israel-Palestine conflict.

Strengthening Ties
- Recent years witnessed a substantial strengthening of India-Israel relations, with Israel becoming a crucial partner in defense, intelligence, and, allegedly, surveillance technology. High-profile visits by Prime Ministers Modi and Netanyahu underscored the depth of this relationship.

India's Response to Gaza Conflict
- The recent conflict in Gaza prompted India to express solidarity with Israel initially. However, the escalating death toll and media coverage led to a nuanced shift. While Prime Minister Modi conveyed condolences to the Palestinian President, the External Affairs Ministry expressed support for a two-state solution.

UN Vote and Criticisms
- India's abstention in a UN vote on a humanitarian truce raised eyebrows, especially considering the country's historical stance. Criticisms arose, questioning India's deviation from the majority opinion within the Global South and its seemingly pro-Israeli stance.

Changing Dynamics
- Under Prime Minister Modi, India's foreign policy has experienced notable changes, particularly in response to the rise of China. A reorientation toward the United States and active participation in regional geopolitics, including the "I2U2" dialogue and the India-Middle East-Europe-Economic Corridor, indicates a broader shift in global alliances.

Gaza as a Manifestation
- The Gaza conflict serves as the latest manifestation of India's evolving worldview, reflecting changing geopolitical realities, concerns about China's rise, and a nuanced approach to regional dynamics.

Nut Graf: *India's position on the Israel-Gaza conflict unveils a complex journey from non-alignment to a recalibration of alliances. The evolving dynamics in the Middle East, coupled with India's changing geopolitical considerations, mark a pivotal moment in the country's foreign policy.*

18. An overview of the European Union's Artificial Intelligence Act

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

Mains: The European Union's Artificial Intelligence Act

Context: The European Union's Artificial Intelligence (AI) Act is a groundbreaking legislative initiative, representing the world's first comprehensive legislation on AI.

Strengths of the Act
- Risk-Based Approach: Categorization of AI applications into different risk levels.
  - Tailored regulations with higher-risk applications are subject to more stringent requirements.
  - Prohibition of certain AI practices, reflecting the EU's commitment to preventing misuse.
- Emphasis on Transparency and Accountability: Requirement for clear information about AI system capabilities and limitations.
  - Mandate for comprehensive documentation to facilitate regulatory oversight.
  - Introduction of independent conformity assessment for higher-risk AI applications, enhancing objectivity.

Limitations
- **Defining and Categorizing AI Applications**
  - Challenge in accurately defining and categorizing AI applications.
  - Evolving nature of AI technologies leading to potential uncertainties in regulatory implementation.
- **Competitiveness Concerns**
  - Stringent regulations may hinder the competitiveness of European businesses.
  - Fear that overly restrictive measures could stifle innovation and drive AI development outside the EU.
  - Potential burden on smaller businesses and start-ups, limiting their ability to compete.

Potential Implications

Global Impact
- Influence on the development and deployment of AI technologies beyond EU borders.
- Setting a precedent for other regions, shaping global AI development norms.
- Impact on innovation and competitiveness depending on the balance struck by the EU.

Collaboration and Cooperation
- Encouragement of collaboration and cooperation between regulatory authorities.
- Fostering a unified approach to AI regulation on an international scale.

Administrative Side
- Enforcement Mechanisms
- Individuals' right to report instances of non-compliance.
- Market surveillance authorities of EU member states responsible for enforcing the AI Act.
- Specific limits on fines for small and medium-sized enterprises (SMEs) and start-ups.

Fines
- Fines range from $8 million to almost $38 million, depending on the violation nature and company size.
- Up to 1.5% of the global annual turnover or €7.5 million for providing incorrect information.
- Up to 3% of the global annual turnover or €15 million for general violations.
- Up to 7% of the global annual turnover or €35 million for prohibited AI violations.

Nut Graf: The EU's AI Act represents a significant leap in regulating AI technologies responsibly and ethically. While addressing key concerns, it introduces challenges and potential drawbacks.

19. U.S. launches multinational push to protect Red Sea from Houthi strikes

U.S. launches multinational push to protect Red Sea from Houthi strikes

Syllabus: GS 2- International Relations

Prelims: About Operation Prosperity Guardian

Introduction
- U.S. Defense Secretary Lloyd Austin announces the establishment of Operation Prosperity Guardian aimed at securing commerce in the Red Sea amidst missile and drone attacks by Yemen's Houthi rebels.
- Participating nations include the U.K., Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles, and Spain.
- The coalition will conduct joint patrols in the southern Red Sea and the Gulf of Aden to counter threats posed by Houthi rebels.

Houthi Response
- The Houthi rebels, aligned with Iran, declare their intent to continue attacks on Red Sea shipping in solidarity with Gaza.
- They emphasise that military operations will persist despite international mobilisation, viewing the coalition as an effort to protect Israel and militarise the sea.

Operation Prosperity Guardian
- Operation Prosperity Guardian is characterised as a critical multinational security effort to address an international challenge.
- Austin condemned Houthi actions as reckless and called for collective action to ensure the safety of strategic waterways.

Multinational Cooperation
- The coalition aims to secure vital waterways collectively, highlighting the need for international cooperation to counter common security threats.
- Austin urged other countries to contribute to the coalition during a virtual meeting with ministers from over 40 nations.

20. Israel is fighting in the dark in Gaza

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Mains: Israel's fight in Gaza

Context: The ongoing conflict in Gaza involves Israel, a nation formed in 1948, and Hamas, a Palestinian organization. Rooted in historical tensions, the conflict has escalated into a prolonged and devastating war with significant implications for the region.

Background
- The establishment of Israel in 1948, rooted in the Zionist movement, aimed at providing security to Jews. Over the years, Israel's control over Palestinian territories, including the illegal occupation of some areas, has fueled tensions.

Issues
- The recent conflict in Gaza has raised questions about Israel's objectives and the effectiveness of its military campaign.
- The declared goals include freeing hostages taken by Hamas and dismantling the organization, with an implicit aim of strengthening Israel's deterrence.

- The asymmetric nature of the conflict, with Israel's military superiority against Hamas, has not guaranteed swift success.
- The complexities of the Israel-Palestine issue, marked by ongoing occupation, make Hamas deeply entrenched in Palestinian society.

Way Forward
- While Israel pursues military means to dismantle Hamas, the organization's resistance strategy aims to deny Israel a quick victory.
- The international community's response, particularly the stance of the United States, is crucial in shaping the outcome.

Nut Graf: The current situation in Gaza reflects the challenges of resolving the Israel-Palestine conflict through military means alone. The issues go beyond the immediate conflict, impacting regional dynamics and global perceptions of the involved parties.

21. Hurdles in India-EFTA trade negotiations

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: European Free Trade Association (EFTA)

Mains: India-European Free Trade Association (EFTA) trade negotiations

Context: Recently, India and four Nordic countries of the European Free Trade Association (EFTA) conducted a meeting to finalise the Trade and Economic Partnership Agreement (TEPA) in New Delhi.

India-European Free Trade Association (EFTA) relationship:
- India and EFTA members started negotiations for a Trade and Economic Partnership in 2008.
- In 2020-21, India was the ninth-largest trading partner of EFTA.
- **India's export to EFTA:** Textiles, gems and jewellery, chemicals, pharmaceuticals and machinery.
- **India's import from EFTA:** Chemicals, machinery, precious metals and medical instruments.
- Norway is in talks with India for the mining of critical minerals, which China currently monopolises. This collaboration is crucial for India's plan to achieve 50% of its energy capacity from renewables by 2030.

European Free Trade Association (EFTA) Countries:
- The European Free Trade Association (EFTA) is an intergovernmental organisation of four states: **Iceland, Liechtenstein, Norway, and Switzerland**, promoting free trade and economic integration among its members.

Figure: EFTA Member Countries
Source: mapsofworld.com

- **Though not part of the European Union,** Iceland, Liechtenstein and Norway are included in the European Economic Area (EEA) which allows them to be part of the EU's single market.

India-EFTA Trade and Economic Partnership Agreement (TEPA)
● **Benefits:**
  ○ Reduce or eliminate customs duties on goods.
  ○ Ease norms to promote trade in services and investments.
  ○ Enhance two-way commerce, investment flows, job creation, and economic growth.
  ○ Create integrated and resilient supply chains, offering new opportunities for businesses and individuals.
● **Challenges**
  ○ Market access challenges due to sanitary and phytosanitary measures, rules of origin, and high tariffs.
  ○ Enforcement of Intellectual Property Rights (IPRs) or patents and copyrights.
  ○ Differences in regulations, standards, and legal frameworks pose challenges in concluding a mutually beneficial agreement for both parties.

Nut Graf: *Concluding the Trade and Economic Partnership Agreement (TEPA) with the European Free Trade Association (EFTA) will benefit India by widening market access for its products, enhancing investment flows, creating jobs, and fostering economic growth.*

22. ILO Occupational Safety and Health Convention

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: ILO Occupational Safety and Health Convention

Context: ILO report calls for countries to strengthen safety net, as deaths due to work-related factors increase.

Details:
● The report, titled 'A Call for Safer and Healthier Working Environments', was discussed at the 23rd World Congress on Safety and Health at Work, one of the largest international conferences on this subject, which was held in Sydney on November 27.
● Citing the data on the fatal occupational injury rate, the report said mining and quarrying, construction, and utilities sectors were the three most hazardous sectors globally.
● According to the report, nearly 30 lakh workers die every year globally due to work-related accidents and diseases and more than 63% of these deaths are reported from the Asia-Pacific region.

ILO Occupational Safety and Health Convention
● The ILO Constitution sets forth the principle that workers must be protected from sickness, disease and injury arising from their employment.
● The report said that so far 79 out of the 187 member countries have ratified the ILO Occupational Safety and Health Convention (No. 155), while 62 countries have ratified the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).
● India has not ratified both the conventions.

23. India and Taiwan to sign labour mobility pact

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: India and Taiwan to sign labour mobility pact

Context: The anticipated signing of an employment mobility agreement between India and Taiwan, reportedly facilitating the recruitment of Indian workers, has stirred controversy.
● A Bloomberg report suggesting the potential hiring of up to 100,000 Indian workers prompted a surge of racist remarks on Taiwanese social media platforms.
● Amidst the backlash, Taiwan's government attributes the negative sentiments to a perceived Chinese interference, characterizing it as cognitive warfare aimed at straining Taiwan-India relations.

Issues at Hand:
● **Misinformation and Racist Backlash:**
  ○ The Bloomberg report's mention of hiring tens of thousands of Indian workers triggered a wave of racist remarks against Indians on Taiwanese social media.
  ○ Taiwanese Labor Minister clarified the inaccuracies, but the racist comments persisted.
● **Alleged Chinese Interference:**
  ○ Taiwan's government identifies the racist campaign as part of the People's Republic of China cognitive warfare strategy.
  ○ The attempt is seen as an effort to tarnish Taiwan's national image and strain relations with India.

- **Diplomatic Significance of the Pact:**
  - The employment mobility agreement holds diplomatic significance, strengthening ties between New Delhi and Taipei despite the absence of formal diplomatic relations.
  - India and Taiwan established representative offices in each other's capitals in 1995, serving as de facto diplomatic missions.
- **Taiwan's Labor Market Needs:**
  - Taiwan faces a shortage of labor, particularly in manufacturing and agriculture, due to an aging population.
  - The pact aims to address this labor shortage by allowing the entry of Indian workers, adding diversity to the Taiwanese workforce.
- **Economic Impact and Trade Relations:**
  - The bilateral trade between India and Taiwan has been on the rise, reaching USD 8.9 billion in 2021.
  - The pact is expected to further enhance economic cooperation between the two nations.
- **Concerns about Indian Workers:**
  - Taiwanese concerns about the impact of Indian workers on the local labor market led to apprehensions.
  - Questions were raised about job security for Taiwanese blue-collar workers.
- **Safety Concerns and Negative Perceptions:**
  - Racist comments on social media reflected safety concerns and negative perceptions about India.
  - These perceptions are rooted in the 2012 Delhi gangrape case and the portrayal of India as the most unsafe country by Western media.
- **Misinformation Campaign and Election Sensitivity:**
  - Pro-China accounts are identified as the source of the misinformation campaign, contributing to the negative sentiments.
  - The timing coincides with the sensitive period of the Taiwanese General Election in January 2024, amplifying the impact of disinformation.

Significance of the Pact:
- **Diplomatic Strengthening:**
  - The agreement contributes to the strengthening of diplomatic ties between India and Taiwan.
  - Representative offices established in 1995 have played a crucial role in facilitating bilateral relations.
- **Economic Cooperation:**
  - Beyond diplomatic implications, the pact fosters economic cooperation, addressing Taiwan's labor market needs and enhancing diversity.

Proposed Solutions:
- **Counteracting Misinformation:**
  - Efforts should be made to counteract misinformation and clarify the actual details of the employment mobility agreement.
- **Promoting Cultural Exchange:**
  - Initiatives promoting cultural exchange and understanding between the two nations could help dispel negative perceptions.
- **Public Awareness Campaign:**
  - A public awareness campaign highlighting the benefits and safeguards in place for both Taiwanese and Indian workers can address concerns.

Conclusion:
The racist backlash against the proposed employment mobility agreement between India and Taiwan underscores the complexities involved in international labor agreements.
- While diplomatic ties and economic cooperation are at stake, addressing the root causes of negative sentiments, countering misinformation, and promoting understanding will be crucial for the successful implementation of the pact.
- As the two nations move forward, a balanced approach that considers the concerns of both local and migrant workers is essential.

24. IMF Quotas

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: IMF Quotas

Context: The Executive Board of the International Monetary Fund (IMF) has approved a significant proposal for a 50% quota increase aimed at providing essential resources to developing nations.
- This move underscores the imperative of realigning quota shares to ensure equitable representation, emphasizing the protection of shares for the poorest member nations. The proposal awaits consideration and voting by the Board of Governors before becoming effective.

Issues at Hand:
- **Global Financial Stability:**
  - Quotas form the foundation of the IMF's financial and governance structure, reflecting a member country's relative position in the world economy.
  - The increase is viewed as vital to safeguarding global financial stability by enhancing the IMF's permanent resources and reducing reliance on borrowed resources.
- **Quota Determinants and Significance:**
  - Quotas, denominated in Special Drawing Rights (SDRs), dictate the maximum financial resources a member must provide to the IMF.
  - They also influence voting power and determine the maximum loan amount a member can avail, making them crucial in shaping the IMF's functions.
- **India's Quota and Voting Power:**
  - India's current quota stands at 13,114.4 SDR, representing a 2.75% share.
  - The proposed increase will elevate India's voting power, contributing to a more equitable representation in the IMF.
- **Reduction of Borrowed Resources:**
  - The proposal envisions a reduction in borrowed resources, such as Bilateral Borrowing Agreements and New Arrangements to Borrow (NAB), once the quota increases take effect.
  - This aims to maintain the IMF's lending capacity while relying less on external sources.
- **Quota Share Realignment:**
  - Acknowledging the need for realignment, the proposal emphasizes the urgency of reflecting members' relative positions in the world economy.
  - The call for further quota realignment, including a new quota formula, under the 17th General Review of Quotas demonstrates a commitment to evolving with global economic dynamics.

Significance of the Proposal:
- **Preserving IMF's Role:**
  - The proposal aims to preserve a robust, quota-based IMF at the core of the Global Financial Safety Net, essential for safeguarding global financial stability.
- **Ensuring Adequate Resources:**
  - Adequate resourcing of the IMF becomes imperative to respond to potential needs in a world prone to uncertainties and shocks.
- **International Cooperation:**
  - Amidst global economic challenges, the proposal reflects a spirit of international cooperation.
  - The broad support sought from the membership indicates a collective commitment to cooperative solutions that instill confidence in the IMF's efficacy.

Proposed Solutions:
- **Developing Quota Realignment Approaches:**
  - The Executive Board is tasked with developing possible approaches for quota realignment by June 2025.
  - This includes exploring a new quota formula under the 17th General Review of Quotas, ensuring ongoing adaptability.
- **Ensuring Broad Membership Support:**
  - The proposal calls for the broadest possible support from the membership, emphasizing the importance of collective endorsement for its success.

Conclusion:
The IMF's move towards a 50% quota increase exemplifies a commitment to fortifying global financial stability and responding effectively to economic challenges.
- The proposed realignment of quota shares, including measures to protect the interests of the poorest members, signifies a proactive approach towards fostering equity.
- As the proposal awaits the Board of Governors' decision, it stands as a testament to the continued relevance of international cooperation in navigating complex global economic landscapes. The forthcoming vote by December 15, 2023, holds the potential to shape the future of IMF policies with an 85% majority requirement for approval.

25. BASIC Grouping

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: BASIC Grouping

Context: The BASIC grouping, comprising Brazil, India, South Africa, and China, has asserted that the Global Stocktake (GST) should encompass an evaluation of failures and achievements of developed nations.
- The Global Stocktake is a crucial aspect of the Paris Agreement, designed to monitor and assess collective progress towards agreed climate goals. As discussions unfold at COP-28, the BASIC nations are emphasizing the need for a comprehensive assessment within the GST framework.

Significance of Global Stocktake

● The Global Stocktake serves as a vital mechanism within the Paris Agreement, facilitating the evaluation of global efforts to combat climate change. Its role in monitoring implementation and gauging progress is pivotal for ensuring accountability and fostering international cooperation.

BASIC Grouping's Critique

● During preliminary negotiations, the BASIC grouping expressed dissatisfaction with the fragmented multilateralism of developed nations. The grouping emphasized the importance of the Global Stocktake not only recognizing achievements but also scrutinizing failures, particularly on the part of developed countries.

Initial Demands

● Delegates from the Pacific Islands, India, and Kenya confirmed that the BASIC nations put forth demands for the Global Stocktake to encompass both successes and shortcomings. The Indian delegation highlighted that these demands were articulated in the initial stages of negotiations, indicating a proactive stance from the BASIC countries.

Condemnation of Unilateralism and Trade Protectionism

● In addition to their stance on the Global Stocktake, the BASIC grouping condemned unilateralism and trade protectionism. This reflects a broader concern about the need for collaborative and inclusive approaches to address climate challenges

26. AUKUS

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Prelims: AUKUS

Context: The defense chiefs of the United States, Australia, and Britain recently convened in California to strengthen their collaboration on cutting-edge technologies under the AUKUS partnership.

● This alliance, formed in September 2021, focuses on leveraging advancements in deep space radar, artificial intelligence (AI), and quantum computing to enhance the military capabilities of the member nations in response to global threats, particularly from China.

AUKUS Partnership

● AUKUS, comprising Australia, the United Kingdom, and the United States, was established in September 2021 as a strategic alliance to address evolving geopolitical challenges.
● The recent meeting in Silicon Valley aimed to deepen cooperation and explore opportunities in high-tech domains.

Deep Space Advanced Radar Capability

● The defense chiefs emphasized the significance of the "Deep Space Advanced Radar Capability" program, a collaborative effort that aims to deploy radar detection sites in all three countries by the end of the decade.
● This program's key feature is the capability to peer 35,000 km into space, enhancing surveillance and monitoring capabilities in the vastness of deep space.

Quantum Technologies Coordination

● The alliance also focuses on coordinating efforts in quantum technologies, specifically for navigation and weapons direction.
● Quantum technologies offer advanced capabilities that can significantly enhance precision and accuracy in military applications.

Resilient Artificial Intelligence

● AUKUS aims to develop resilient artificial intelligence, a critical component for precision targeting in military operations.
● The focus is on creating AI systems that can withstand adversarial attempts to disrupt or compromise their functionality.

27. Illegal Migration from India

Syllabus: Effect of policies and politics of developed and developing countries on India's interests

Mains: Illegal Migration from India

Context: The recent incident involving an Airbus A340 aircraft detained in France over human trafficking allegations has raised concerns as it landed in Mumbai with Indian passengers after four days of detention. The passengers underwent rigorous interrogation and verification by immigration and CBI officials, leading to various revelations about the circumstances surrounding the flight.

Issues

- **Detention in France:**
  - The Airbus A340, chartered by Romania Legend Airlines, faced detention in France for five days over allegations of human trafficking.
  - The French authorities acted on an anonymous signal, suspecting foul play behind the flight.
- **Rigorous Interrogation in Mumbai:**
  - Upon landing in Mumbai, passengers endured nearly five hours of intense questioning and verification by immigration and CBI officials.
  - Some passengers faced delays in exiting the airport due to baggage claim issues.
- **Non-European Client and Anonymous Signal:**
  - The flight was chartered by a "non-European" client, who also sold tickets to 303 Indian citizens for the Dubai to Nicaragua journey.
  - The detention in France resulted from an "anonymous signal" received by the French authorities, triggering suspicions of human trafficking.
- **Asylum Seekers and Legal Issues:**
  - Twenty-five passengers sought asylum in France, citing various grounds that are yet to be clarified.
  - Two passengers were taken into custody for possessing multiple passports and an unusual amount of money.
  - Legal processes for asylum may take up to six months to examine each case.

International Implications:

- The detention and subsequent interrogation highlight the international implications of flights involving Indian passengers and potential human trafficking concerns.
- The investigation in Paris is ongoing, and the purpose of the flight is under scrutiny.

Security and Verification Procedures:

- The incident underscores the importance of robust security and verification procedures at airports, especially for flights under suspicion.
- Collaboration between immigration and investigative agencies is crucial in addressing such cases.

Asylum Seekers' Fate:

- The focus shifts to the fate of the 25 Indians seeking asylum in France, raising questions about the grounds cited and the examination process.
- The legal complexities surrounding their cases and the duration of the asylum process add to the significance of the incident.

Way Forward

- **Enhanced Collaboration:**
  - Strengthen collaboration between international agencies to share information and address suspicions before flights reach their destinations.
  - Improved coordination can prevent unnecessary detentions and delays for passengers.
- **Clear Communication:**
  - Establish clear communication channels between airlines, immigration, and investigative agencies to ensure swift and accurate verification processes.
  - Transparency in communication can alleviate concerns and streamline procedures.
- **Review of Immigration and Asylum Policies:**
  - Review immigration and asylum policies to address loopholes and ensure a more streamlined process.
  - Consider international cooperation to standardize procedures for passengers seeking asylum.

Nut Graf: The detention and interrogation of passengers on the Airbus A340 in Mumbai after allegations of human trafficking underscore the need for robust international cooperation and enhanced security measures.

28. The outlook for 2024, for the world and India

Syllabus: GS-2, Regional and global groupings involving India and/or affecting India's interests

Mains: External and Internal Challenges faced by India in 2024

Context: Global risks soar in 2024, with the Ukraine war ready to explode, the Middle East simmering, and alliances reshaping. India faces election heat, China tensions, and regional shifts, demanding careful navigation through choppy waters.

Navigating the Storms of 2024: Global Risks and Indian Challenges

- **Ukraine Tinderbox:** The simmering war in Ukraine threatens to become an inferno in 2024. Desperate actions from both sides, influenced by US elections and waning European support, could ignite the region.
- **Middle East Flashpoint:** Hamas's attack on Israel has kindled a fire that could engulf West Asia. Western "hypocrisy" in drawing moral distinctions further fuels the flames.
- **Shifting Sands:** Geopolitical alliances are reshaping, with Iran-Russia-China challenging Western dominance in West Asia. This realignment has global repercussions, demanding the West to tread cautiously in other regions like the Indo-Pacific.

India's Crossroads:

- **Election Fever:** India anticipates its mid-2024 general election, with the ruling party showing confidence after winning recent regional elections. However, unforeseen events ("black swans") could affect the economy and political landscape.
- **China Conundrum:** Sino-Indian relations are expected to remain at a standstill, with neither side accommodating the other's viewpoint. China perceives India as part of an anti-China alliance led by the U.S., hindering any progress in bilateral relations. Despite strained relations, a direct confrontation between India and China in 2024 seems improbable. However, there's a slight chance of China taking assertive actions in border regions. Strengthening Russia-China ties might weaken Russia-India relations, impacting India's access and relations with Central Asia. Moreover, India faces uncertain situations with neighbouring countries due to China's increasing influence, potentially reducing their reliance on India.
- **Neighbourhood uncertainties:** Relations with Afghanistan remain frozen, while China's influence pressures India's ties with Bangladesh, Nepal, and Maldives.
- **In West Asia**, with the possible exception of the United Arab Emirates, India's influence appears to be diminishing. As more West Asian countries break free from the clutches of the West and tend to gravitate towards China and Russia, India's position in the region will become even more tenuous.

Internal Dynamics

- **Political Climate**
  - The internal political situation is expected to be highly charged, with both ruling and opposition parties gearing up for a fiercely competitive election.
    - **Underlying Tensions:** Despite outward appearances of calmness, strong emotions exist, driven notably by factors like caste loyalties.
    - **Social Dynamics:** There's an unseen manipulation of social groups using tactics like social engineering, creating divisions. Additionally, there's concern about the overwhelming influence of electoral power and the lack of significant debates on crucial societal issues.
    - **Role of Technology:** The anticipated increased use of Artificial Intelligence (AI) in politics might alter the power dynamics, affecting perception and debates.
    - **Shift in Constitutional Focus**: There's a growing inclination toward favouring unitary aspects over federal aspects in India's diverse Constitution.
- **Centralization of Authority**
  - **Centralization Trends**: Certain political parties show a tendency towards a more regimented approach and increased centralization of authority, limiting the autonomy of individual states.
  - **Lack of Compromise**: Decision-making in Parliament seems dominated by a majority-based approach, reflected in incidents like the expulsion of a Member of Parliament.
  - **State-Centre Tensions**: Governors in various states show resistance, contributing to strained relations between states and the central government.
  - **Potential Turning Point**: The recent Supreme Court ruling affirming the President's power to revoke Article 370, a provision related to the special status of certain regions, might spark further conflicts and contentious issues.

Reevaluation of Centre-State Relationships

- **Reassessment Urgency:** There's a critical need for both central and state-level political parties to reassess their approaches in the current circumstances.
- **Opposition's Perspective:** Many opposition parties and state governments seem inclined towards opposing the central government as a fundamental aspect of their existence, neglecting constructive engagement. This attitude may hinder collaborative efforts.
- **Potential State Advantages:** States possess inherent advantages in both political and economic realms that could be beneficial, but these advantages might not be utilized effectively.
- **Importance of Cohesive Relations**: Recognizing the strength that lies in unity, there's a call for the central government to better understand the significance of improved relations between the Centre and the States.
- **Enhanced Synergy:** When both central and state entities collaborate, they can provide a more effective and comprehensive governance framework than either could alone.
- **Need for Adaptation**: This requires a deeper understanding of the evolving dynamics and power structures, yet achieving this understanding by 2024 appears uncertain.

Nut Graf: 2024 promises a perilous year for India on both internal and external fronts. India needs to steer through the coming election year with an emphasis on social cohesion and healthy Centre-State ties.

29. Houthi attacks: a threat to global shipping?

Syllabus: Effect of policies and politics of developed and developing countries on India's interests.

Mains: Houthi attacks- a threat to global shipping

Context: The Red Sea region is witnessing heightened tensions due to recent drone attacks by Houthi rebels in Yemen, raising concerns about the potential threat to global shipping. This situation prompts a closer examination of the historical context of maritime threats, the specific tactics employed by the Houthi rebels, and the repercussions for industries and nations reliant on these critical waterways.

Issues:
- **Escalating Drone Attacks:** The Houthi rebels have escalated their attacks on commercial shipping in the Red Sea, employing drones and missiles. This poses a significant threat to the free flow of maritime commerce in the region.
- **Impact on Global Shipping:** The Red Sea is a vital shipping artery for global trade, with approximately 12% of global trade passing through it. The recent attacks on merchant vessels have led to concerns about potential disruptions to supply chains and economic repercussions.
- **Strategic Importance of the Red Sea:** The Red Sea, particularly the Bab el-Mandeb strait, is a critical choke point, making it strategically important for maritime traffic. Disruptions in this region can have far-reaching consequences for global shipping routes.

Significance:
- **Economic Implications:** The escalation of attacks has prompted major shipping companies to reconsider their routes, opting for longer and alternative paths. This strategic shift not only increases fuel and operating costs but also impacts shipping schedules, leading to economic implications for the affected industries and nations.
- **Security Concerns:** The sophistication of the Houthi rebels' arsenal, including ballistic missiles and long-range drones, poses a security challenge. The attacks threaten maritime traffic far from the shores, necessitating a robust security response to safeguard the interests of nations and industries relying on these waters.

Solution:
- **Multinational Security Initiatives:** Recognizing the severity of the situation, the U.S. has announced Operation Prosperity Guardian (OPS) to address the threats and ensure the free flow of commerce in the Red Sea. Multinational cooperation is crucial in countering the Houthi attacks and maintaining maritime security.
- **Increased Naval Presence:** Nations, including India, have increased naval and coast guard presence in the region to counteract piracy and drone attacks. This includes deploying destroyers, patrol aircraft, unmanned aerial vehicles, helicopters, and Coast Guard ships.
- **Reviewing Shipping Routes:** Major shipping companies are reviewing and altering their routes to avoid the Red Sea, opting for longer routes through the Southern Indian Ocean. This strategic shift requires ongoing assessment and adaptation to minimize disruptions.

Nut Graf: *The escalating Houthi attacks in the Red Sea pose a serious threat to global shipping and necessitate concerted international efforts to ensure maritime security. The economic implications of rerouting vessels and the strategic importance of the Red Sea underline the urgency for effective solutions.*

30. Qatar's reprieve

Syllabus: GS-2, Effect of policies and politics of developed and developing countries on India's interests.

Mains: Qatar's reprieve

Context: The recent decision by the Qatari Court of Appeals to reduce the capital punishment of eight former Indian naval personnel offers a significant reprieve for the individuals and their families. This development follows diplomatic efforts by the Indian government and comes after Prime Minister Narendra Modi's outreach to the Qatari leadership during COP28 on December 1.

Diplomatic Channels and Legal Strategy:
- The reduction in capital punishment underscores the success of India's diplomatic channels with Qatar.
- However, the upholding of the conviction poses challenges, necessitating a reassessment of the legal strategy.
- The detailed judgment is awaited, and the government, along with the families, must evaluate evidence of innocence before filing a review petition with Qatar's Court of Cassation.

Options for Government:
- **Review with Qatar's Ruling Emir:** The government may continue pressing for a review of the conviction with Sheikh Tamim bin Hamad Al-Thani. If unsuccessful, alternative options must be explored.
- **Clemency and Pardon:** The individuals could appeal for clemency and seek a pardon, a route Qatar's rulers have granted in the past. This avenue requires diplomatic finesse and negotiation skills.

- **Transfer of Sentenced Persons Agreement:** Utilizing the 2015 bilateral Agreement on Transfer of Sentenced Persons, the government can explore the possibility of the individuals serving their terms in India, provided the conviction cannot be reversed.

Significance of Political Outreach:
- The timing of the reprieve coinciding with PM Modi's outreach to the Qatari leadership underscores the significance of political engagement. While it is uncertain whether earlier political initiatives would have been more fruitful, the outreach at COP28 indicates the priority India places on the welfare of its citizens abroad.

Avoidance of Public Rhetoric:
- India's decision not to react publicly or engage in rhetoric, particularly targeting Doha, is commendable.
- Unlike instances with other countries, New Delhi has adopted a measured approach, avoiding counterproductive public rhetoric. This strategy is crucial in maintaining positive diplomatic relations.

Intelligence Services and Regional Sensitivities:
- If the case is linked to India's intelligence services, a thorough review of related operations is imperative to prevent jeopardizing Indians overseas.
- Additionally, the government's stance has wisely avoided entanglement in regional tensions, such as those arising from the conflict in Gaza. A calibrated and sensitive position is crucial in handling the delicate diplomatic situation.

Nut Graf: The Qatari court's decision offers a significant reprieve, but the road ahead requires meticulous planning. The government must explore legal avenues, maintain a diplomatic approach, and navigate potential challenges.

31. India's foreign policy & election's globally

Syllabus: Relations between India and neighbouring countries. Bilateral, regional and global groupings and agreements involving India and/or affecting India's Interests

Mains: India's foreign policy & election's globally

Context: India's foreign policy landscape in 2024 will be significantly shaped by a multitude of elections across the globe, involving nearly 60 countries, a quarter of the world's population.
- The outcomes of these elections, ranging from the U.S. and EU to major powers in the Global South, will influence diplomatic strategies, alliances, and geopolitical dynamics.
- As India prepares for its own pivotal elections, the interplay between domestic policy and global events is expected to define its diplomatic engagements in the coming year.

Issues at Hand:
- **Global Election Dynamics:** In 2024, approximately 60 countries are set to conduct parliamentary, presidential, or major Assembly elections, making it one of the most significant election years globally. The collective impact of these elections will reverberate across geopolitical landscapes.
- **Indian Neighbourhood:** Elections in India's immediate neighbourhood, including Bangladesh, Bhutan, and Pakistan, will set the tone for regional dynamics. While some outcomes seem predictable, potential shifts in leadership could influence bilateral relations.
- **Global Powers:** The U.S. elections and potential re-election of former President Donald Trump will be closely monitored by India, considering the implications for bilateral ties. Additionally, the Russian presidential election and the political situation in the U.K. will be crucial for India's diplomatic agenda.
- **EU and Right-Wing Resurgence:** The European Parliament elections in June 2024, with concerns of a right-wing resurgence, hold significance for India-EU relations. The results may impact immigration policies and the India-EU Bilateral Trade and Investment Agreement (BTIA).
- **Global South Powers:** Elections in Indonesia, Mexico, South Africa, and Iran will be watched closely, as they represent major players in the Global South. Shifts in leadership or policy changes can influence India's diplomatic engagements in these regions.

Significance of the Elections:
- **Impact on Bilateral Ties:** The outcomes of key elections, especially in the U.S., Russia, and the U.K., will shape India's diplomatic engagements with these global powers. The alignment of leadership and policies will influence the direction of bilateral relations.
- **Regional Dynamics:** Elections in India's neighbourhood will impact regional stability and bilateral relations. Changes in leadership or political shifts may require recalibration of diplomatic strategies.
- **EU Relations:** The European Parliament elections will provide insights into the political landscape of the EU, influencing India's engagements with the bloc. The stance on immigration and trade policies will be crucial for India-EU relations.
- **Global South Influence:** Elections in major Global South powers will determine the geopolitical dynamics in these regions. India's engagement with countries like Indonesia, Mexico, South Africa, and Iran will be influenced by the outcomes.

Solutions and Future Steps:

- **Strategic Preparedness:** India should adopt a proactive and strategic approach in response to various election outcomes. Scenario planning and diplomatic preparedness will be essential to navigate potential changes in global dynamics.
- **Diversification of Alliances:** Given the uncertainty surrounding election outcomes, India should continue diversifying its diplomatic alliances, fostering relationships with multiple global players to mitigate risks associated with geopolitical shifts.
- **Adaptive Foreign Policy:** An adaptive foreign policy that can accommodate changes in leadership and policies will be crucial. India should be prepared to recalibrate its diplomatic strategies based on the evolving global political landscape.

Nut Graf: *The year 2024, labeled as the "biggest election year" ever, will significantly shape India's foreign policy. As the world witnesses crucial elections across major powers, regional dynamics, and the Global South, India's diplomatic agenda must remain agile and responsive.*

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SCIENCE AND TECHNOLOGY

1. Genome sequencing

Syllabus: GS 3- Science and Technology

Prelims: About Genome sequencing

Population: Scale Genomics: Genesis and Global Initiatives
- The deCODE initiative in Iceland, launched in 1996, pioneered large-scale population genetic studies, providing insights into disease genetics and genomic data handling methods.
- The deCODE's success inspired global initiatives, leading to widespread population-scale genome programs globally.
- Initiatives like the AllofUS program in the U.S., the European Union's '1+ Million Genomes,' and the 'Three Million African Genomes' reflect diverse objectives, from disease prevalence understanding to scalable public-health initiatives.

Cost Reduction and Accessibility
- Decreasing costs of whole-genome sequencing enable a larger global population to access genome sequencing.
- The UK's 100K Genome project revealed that 18.5% of sequenced data had actionable insights, leading to direct healthcare benefits.

Challenges and Ethical Considerations
- Population-scale programs present ethical challenges regarding access to and use of genomic data, ensuring equitable representation, and preventing misuse.
- Regulatory frameworks, such as the Genetic Information Non-discrimination Act in the U.S., aim to address concerns about genetic data misuse.

Genomics in Asia and India
- GenomeAsia, led by multiple partners across Asia, aims to sequence a lakh whole genomes from diverse populations.
- India's GenomeIndia initiative is working towards sequencing 10,000 whole genomes from diverse population groups, contributing to the landscape of genetic diseases and clinical variants.

Future Impacts and Beyond Healthcare
- Population-scale genomics extends beyond individual health, shaping understanding of human evolution, migration patterns, and adaptation.
- It contributes significantly to knowledge about human biology, paving the way for a future with precise, personalised approaches in medical and biological understanding.

2. Understanding how the Global Positioning System (GPS) works

Syllabus: General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology.

Mains: Global Positioning System (GPS): Origin, components and working.

Prelims: About Global Positioning System (GPS)

Context:
The Global Positioning System (GPS), initiated by the U.S. Department of Defence in 1973, has become a revolutionary force in navigation, impacting diverse sectors globally through its satellite-based technology.

Introduction
- The Global Positioning System (GPS) has revolutionised various sectors, impacting civilian life, military operations, scientific studies, and urban planning.
- Originating from the U.S. Department of Defense in 1973, the GPS satellite constellation plays a crucial role in determining accurate locations globally.

Components of GPS
- **Space Segment**
  - Consists of 24 satellites in six orbits around the Earth, ensuring that at least four satellites are visible from any point on Earth.
  - Satellites broadcast signals containing information on their location, operational status, and emission time.

- **Control Segment**
  - Involves ground-based control stations and antennas globally, tracking and managing satellite performance.
  - The master control station is in Colorado, with an alternate station in California, along with ground antennae worldwide.
- **User Segment**
  - Involves various sectors such as agriculture, construction, telecommunications, and military operations.
  - The widespread use of GPS is evident with an estimated 6.5 billion Global Navigation Satellite System (GNSS) devices globally in 2021.

How GPS Works

- GPS satellites continuously broadcast radio signals encoded with information about their location and operational status.
- Receivers, like those in smartphones, calculate their distance from satellites by measuring signal travel time.
- Triangulating data from at least four satellites provides accurate three-dimensional spatial and one-dimensional temporal information.

Adjustments for Accuracy

- Adjustments are made to account for gravitational potential differences, satellite velocities, and relativistic effects.
- Atomic clocks on satellites, synchronised to within 10 nanoseconds of each other, ensure precise timekeeping for accurate measurements.

Satellite Atomic Clocks

- Atomic clocks onboard satellites exploit the resonant frequency of electrons, ensuring accurate timekeeping.
- Electrons absorb radiation at the resonant frequency, allowing scientists to fine-tune and measure time based on specific energy transitions.

Global Navigation Satellite Systems (GNSS) Worldwide

- Other countries, including China, the European Union, India, Russia, and more, operate their GNSS.
- International cooperation ensures compatibility, with regular meetings and committees like the International Committee on GNSS promoting collaboration.

Indian GNSS: NavIC and GAGAN

- India's Navigation with Indian Constellation (NavIC) consists of seven satellites providing ground-based navigation.
- NavIC uses rubidium atomic clocks and transmits in different frequency bands.
- India also operates the GPS-Aided Geo Augmented Navigation (GAGAN) system, primarily for civil aviation applications and GPS corrections.

Nut Graf: *GPS, with its space, control, and user segments, enables precise global navigation. From its inception, it has evolved into a vital technology, influencing industries and daily life worldwide.*

3. Regulating Deepfakes & AI in India

Syllabus: Recent developments and their applications and effects in everyday life, General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology.

Mains: Deepfake Technology- History, impact and regulation.

Prelims: About Deepfake Technology

Context:
The rising threat of deepfakes in India, exemplified by a manipulated video of actor Rashmika Mandanna, prompts concerns about AI misuse, political implications, and the need for regulatory measures.

Introduction

- The rise of deepfake technology has raised concerns globally, with recent instances highlighting its potential misuse.
- Deepfakes, manipulated digital media using AI, pose threats to reputations, privacy, and trust in democratic processes.
- Political campaigns, including in India, have witnessed the use of deepfakes, emphasising the need for robust legal frameworks.

Instances of Deepfake Use in Politics

- In 2020, BJP leader Manoj Tiwari's deepfake videos circulated on WhatsApp during Delhi elections.
- While having benefits in various fields, including education and film production, the technology's misuse for malicious intent, such as spreading misinformation, is a growing concern.
- Globally, incidents like a deepfake of Ukrainian President Zelenskyy demonstrate the political impact of this technology.

Evolution of Deepfake Technology
- Deepfakes, driven by AI and machine learning, blur the lines between reality and fiction.
- Initially linked to explicit content creation, deepfake technology has become more accessible, raising concerns about misinformation and exploitation.
- Detection tools, like MIT's Detect Fakes website, aim to assist individuals in identifying deepfakes.

Legal Framework in India
- India lacks specific laws addressing deepfakes and AI-related crimes.
- Existing legislation, such as the Information Technology Act, 2000, offer civil and criminal relief, but critics argue they are not designed for emerging technologies.
- Sections 66E, 67, 67A, and 67B of the IT Act, along with IT Rules, can be applied to combat deepfake-related offences.
- IPC sections like 509, 499, and 153(a) and (b) can also be utilised for cybercrimes associated with deepfakes.

Legal Vacuum and Challenges
- Critics argue that existing laws are insufficient, and piecemeal amendments may not be the solution, and hence there is an urgent need for a comprehensive regulatory framework.
- Current laws focus on online takedowns and criminal prosecution but lack a nuanced understanding of AI technology's harm potential.

Government Response and Future Regulations
- The Union Minister of Electronics and Information Technology acknowledged the emerging crisis due to deepfakes.
- Draft regulations to address deepfake issues are set to be introduced for public consultation.
- Concerns persist regarding the adequacy of existing laws, the need for preventive measures, and the enforcement of regulations.

Global Comparisons and Legislative Responses
- The U.S. and the EU have introduced measures to combat deepfake risks, emphasising labelling, transparency, and disclosure.
- India's response is expected to be unique, considering its developing economy and thriving startup ecosystem.
- Emphasis on AI governance extends beyond legislation to standards of safety, awareness, and institution building.

Future Steps and Governance
- AI governance in India requires more than legislative reforms, emphasising safety standards, awareness, and institution-building.
- Consideration of the Indian context, with a thriving startup ecosystem, to avoid overly stringent regulations hindering innovation.
- There is a need for a holistic approach to assimilate AI in a way that benefits human welfare while managing challenges.

NutGraf: *Deepfakes, AI-generated manipulated media, pose risks to Indian politics and public trust. With a legal vacuum, the government aims to introduce regulations, reflecting global efforts to combat this evolving threat.*

4. Can ChatGPT replace human therapists?

Syllabus: Recent developments and their applications and effects in everyday life, General awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology, bio-technology.

Mains: Role of technology in providing mental health support, Ethical considerations in the use of AI, particularly in the healthcare sector, Challenges and potential of AI in bridging healthcare disparities.

Context:
OpenAI's Lilian Weng faced criticism for likening ChatGPT to therapy. Despite ethical concerns, users turn to ChatGPT for mental health support, highlighting challenges and biases in AI-generated health information.

Introduction
- In September, OpenAI officer Lilian Weng faced criticism on social media for likening her conversation with ChatGPT to therapy despite lacking experience in therapy.
- Weng, working on AI safety at OpenAI, shared her emotional interaction with ChatGPT following the introduction of voice and image capabilities to the chatbot.
- The incident sparked discussions about the ethical implications of portraying ChatGPT as a tool for therapy, leading to accusations of the "ELIZA effect."

The ELIZA Effect
- The ELIZA effect refers to the tendency of people to attribute human-like emotions or functions to computer programs based on their responses to user input.
- Named after a 1960s computer program, ELIZA, created by MIT professor Joseph Weizenbaum, this effect suggests users may perceive meaningful interactions with ChatGPT, believing it to simulate human conversation.

Users Seeking Mental Health Support from ChatGPT
- Despite criticisms, users have turned to ChatGPT for mental health support, considering it a convenient and accessible option.
- These users acknowledge the limitations of ChatGPT but find it helpful for obtaining quick responses to anxiety-inducing situations when professional therapy may not be readily available.

Web-based Health Information Seeking
- Individuals often seek health information privately online to maintain anonymity and avoid stigma.
- While AI chatbots like ChatGPT offer a sense of privacy, concerns about their ability to bridge doctor-patient divides and generate inclusive results have been raised.
- Researchers highlight potential biases in AI-generated health information, favouring privileged castes and economic classes and producing false results about physiological differences among racial groups.

Challenges and Ethical Considerations
- Critics argue that AI-generated health understandings may perpetuate Eurocentric perspectives and fail to recognize cultural specificity.
- Users acknowledge ChatGPT's limitations, emphasising the importance of human therapists in offering deeper insights, recognizing triggers, and establishing free-flowing, insightful conversations.

ChatGPT as a Stop-gap Arrangement
- Users see ChatGPT as a stop-gap arrangement, providing immediate but limited assistance in specific situations.
- While ChatGPT offers convenience, the complex and culturally specific nature of mental health requires a nuanced and human-centred approach, urging caution in relying solely on AI for therapeutic support.

NutGraf: In September, OpenAI's Lilian Weng sparked debate by comparing ChatGPT to therapy. Users, acknowledging limitations, turn to the chatbot for mental health support, raising concerns about biases in AI-generated health insights.

5.   Understanding web browsers

Syllabus: GS 3- Science and Technology

Prelims: About web browsers

Introduction
- Web browsers, the gateways to the internet, offer a deceptively simple interface masking intricate processes that translate clicks into the web pages defining our digital experiences.

Evolution of Web Browsers
- Tim Berners-Lee introduced the World Wide Web in 1990, along with the first web browser, 'WorldWideWeb.'
- The Mosaic browser in 1993 revolutionised web interaction by introducing image display alongside text.
- Netscape Navigator, emerging in the mid-1990s, initiated the 'Browser Wars' with Microsoft's Internet Explorer.
- Mozilla Firefox, in 2004, revitalised browser competition with innovative features like tabbed browsing.
- Google Chrome's 2008 launch, known for speed and minimalist design, further transformed the browser landscape.

Components of a Web Browser
1. **Request and Response:** Initiates communication with a server to request webpage contents, triggering a sequence of digital exchanges.
2. **Deconstructing the Response:** Unpacks server responses, typically encoded in HTML, CSS, and JavaScript, shaping the webpage.
3. **Rendering:** Assembles the webpage by deciphering HTML structure, applying CSS for aesthetics, and executing JavaScript for interactivity.
4. **Managing Data:** Utilises cookies and cache to enhance user experience by storing information and frequently accessed files.
5. **Security:** Implements encryption protocols like HTTPS, warns against malicious sites, and safeguards data during transmission and storage.

The Future of Browsing
- Web browsers are adopting technologies like WebAssembly for near-native performance.
- Support for virtual reality (VR) and augmented reality (AR) promises immersive online experiences.
- Privacy features are evolving to provide users with greater control over their digital footprint.

6. As JN.1 emerges as variant of interest, time to evaluate preparedness

Syllabus: Biotechnology

Mains: Covid mutation & potential implication on public health

Context: The resurgence of COVID-19 has taken centre stage, introducing a new player on the global health scene—**the JN.1 sub-variant.**

- Nearly a year and a half after the world seemingly relaxed its grip on the pandemic, the identification of JN.1 has reignited interest in the epidemiological world and raised concerns about the potential implications for public health.

Classification of JN.1:
- The World Health Organisation (WHO) has redefined its criteria for Variants of Interest (VOIs), placing JN.1 in the spotlight.
- JN.1, part of the BA.2.86 sublineages, exhibits genetic changes predicted to impact virus characteristics like transmissibility, virulence, and susceptibility to therapeutics.
- Its rapid spread prompted the WHO to classify it as a separate VOI from its parent lineage, BA.2.86.

Global Public Health Risk Evaluation:
- While the WHO currently assesses the additional global public health risk posed by JN.1 as low, a looming challenge emerges with the onset of winter in the Northern Hemisphere.
- JN.1's potential to increase respiratory infections warrants global preparedness.
- Nations must gear up for a possible surge in cases, adopting effective strategies to prevent severe diseases and fatalities.

Global Response and Monitoring:
- The WHO has committed to continuous monitoring of the JN.1 variant, pledging to modify guidance based on evolving situations.
- The Centers for Disease Control and Prevention (CDC) in the United States, tracking JN.1 since August 2023, observes its continued growth.
- While there is no evidence suggesting increased severity, the CDC acknowledges the possibility of heightened transmissibility or immune system evasion.

Cases in India:
- As the JN.1 variant makes its presence known in India, the Union Health Ministry remains vigilant.
- The first case detected in Kerala has prompted an alert, although no clusters associated with JN.1 have been reported. Despite the rise in the daily COVID-19 positivity rate in some states, the variant, at present, is not an immediate cause for concern.
- India has detected 21 cases of the JN.1 sub-variant, with a majority experiencing mild symptoms and successful recoveries.
- The debate regarding an additional dose of vaccination to combat JN.1 looms large in India.
- Epidemiologists, while considering this option, emphasize the importance of achieving high coverage—around 95%— of two vaccine doses combined with immunity from natural infections.
- This layered approach aims to fortify the country against the progression of JN.1 from a Variant of Interest (VOI) to a Variant of Concern (VOC).

Evolution of Pathogens and Diagnostics:
- All viruses, including SARS-CoV-2, undergo changes over time. While many changes have minimal impact, some can significantly alter the virus's properties, affecting transmission, disease severity, and the efficacy of vaccines and therapeutics.
- Over the past two years, diagnostic technology has seen enhancements, with artificial intelligence contributing to tools like AI-assisted X-rays, aiding in more efficient detection and response.

Global Collaboration and Data Sharing:
- Understanding the evolving nature of pathogens requires global collaboration and robust data sharing.
- The WHO, recognizing the significance of timely information, emphasizes the need for nations to enhance surveillance, sequence variants, and share data promptly.
- The last three years of the pandemic underscore the importance of data sharing in mounting an effective global response.
- The WHO's Virus Evolution Working Group, later becoming the Technical Advisory Group on SARS-CoV-2 Virus Evolution, was established in response to the emergence of variants posing increased risks.
- In late 2020, the characterization of variants as VOIs and VOCs prioritized global monitoring, research, and adjustments to the COVID-19 response.

Conclusion:
- As the world grapples with the JN.1 sub-variant, a proactive stance is crucial.
- Global vigilance, robust diagnostics, and collaborative efforts are essential components of an effective strategy. Adapting responses based on continuous monitoring ensures readiness against evolving pathogens in the ever-changing landscape of infectious diseases.
- The collective response of nations will determine our ability to navigate and mitigate the challenges posed by JN.1 and future variants, securing global health in an uncertain landscape.
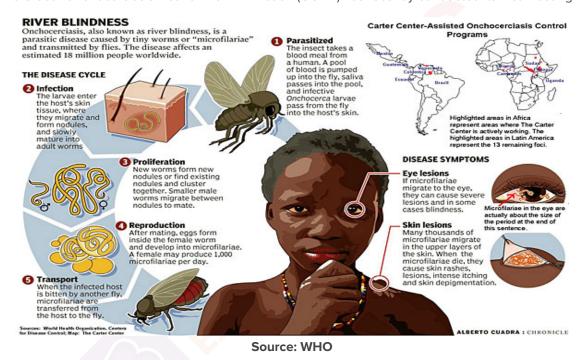
Nut Graf: The JN.1 sub-variant of COVID-19 has emerged, sparking global concern. With redefined criteria by the World Health Organisation (WHO), nations grapple with its classification as a Variant of Interest. The article explores global responses, cases in India, vaccination debates, pathogen evolution, and the imperative of global collaboration to navigate and mitigate the challenges posed by JN.1 and future variants.

7. River Blindness (Onchocerciasis)

Syllabus: Science and technology, Biotechnology and diseases

Prelims: River Blindness (Onchocerciasis)

Context: The Global Onchocerciasis Network for Elimination (GONE) has recently conducted its first meeting in Senegal.

Source: WHO

About Global Onchocerciasis Network for Elimination (GONE)
- GONE was launched in 2023 to accelerate progress towards onchocerciasis (river blindness) targets set in the 2030 Neglected Tropical Disease (NTD) roadmap.
- It provides a platform for endemic countries, civil society organizations, and individuals to share experiences and challenges, identify gaps and best practices.
- It strengthens existing partnerships and integration along the path to achieving the 2030 targets.

Objectives of the GONE meeting
- Review national elimination progress, address challenges, and identify key actions for achieving the 2030 onchocerciasis targets;
- Develop strategies to address major obstacles to elimination;
- Serve as a platform for knowledge-sharing;
- Strengthen global and regional collaboration to enable faster and sustainable knowledge sharing, lessons learnt, and best practices among partners; and
- Formalize and standardize communication mechanisms and advocacy activities so that priority concerns are addressed.

Neglected Tropical Diseases
- NTDs are a diverse group of 20 conditions that are mainly prevalent in tropical areas. They are called neglected because they are little considered in the global health agenda, have limited resources, and are almost ignored by global funding agencies.
- Include several parasitic, viral, bacterial, fungal, and non-communicable diseases.
- Flourish mainly in rural areas, in conflict zones, and hard-to-reach regions.

- They mostly affect impoverished communities and disproportionately affect women and children.
- They cause devastating health, social, and economic consequences to more than one billion people globally.
- Many of them are vector-borne, have animal reservoirs, and are associated with complex life cycles.
- They have the greatest relevance for SDG 3 (the health goal).

World Neglected Tropical Diseases Day
- World Neglected Tropical Diseases Day is observed every year on 30 January.
- It marks the launch of the first WHO road map and the launch of the London Declaration on NTDs in 2012.

Onchocerciasis
- Onchocerciasis is an eye and skin disease, commonly known as "river blindness".
- It is caused by the parasitic worm Onchocerca volvulus.
- Transmission by: Repeated bites of infected blackflies (Simulium spp.). These blackflies breed along fast-flowing rivers and streams, close to remote villages located near fertile agricultural lands.
- Symptoms: Severe itching, disfiguring skin conditions, and visual impairment, including permanent blindness.
- Prevalence: More than 99% of infected people live in 31 countries in sub-Saharan Africa (Tropical areas), in 2 countries in Latin America and Yemen.
- At least 220 million people required preventive chemotherapy against Onchocerciasis.
- 14.6 million of the infected people already had skin disease and 1.15 million had vision loss. (Global Burden of Disease Study, 2017)
- Treatment: Mass Drug Administration with Ivermectin.
- Colombia, Ecuador, Mexico, and Guatemala have been verified by WHO as free of onchocerciasis.

8. GPAI – Global Partnership on Artificial Intelligence

Syllabus: Science and technology

Prelims: GPAI – Global Partnership on Artificial Intelligence

Context: Representatives from 28 countries and the European Union adopted the "New Delhi Declaration" of the Global Partnership on Artificial Intelligence (GPAI).
- India is hosting the summit and will chair the GPAI grouping in 2024.
- The ministerial declaration reaffirms the countries' commitment to principles for the responsible stewardship of trustworthy AI, rooted in democratic values and human rights.
- GPAI is a grouping of countries in North and South America, Europe, and East Asia working towards the trustworthy development, deployment, and use of AI.

Key highlights of GPAI summit
- The Prime Minister of India discussed the national AI portal, highlighting the AIRAWAT initiative and raising concerns over the potential misuse of deep fake technology.
- YUVAi was prominently featured at the GPAI Summit, and the winners of the YUVAi initiative and start-ups showcased their AI models and solutions.
- The Prime Minister suggested using AI to make digital services available in local languages to increase digital inclusion.
- Responsible AI, data governance, future of work, and innovation and commercialization are the four different themes of four sessions organized in the GPAI.
- The summit also included various side events showcasing AI progress and engaging in discussions, such as industry panel discussions, workshops, research symposiums, hackathons, and the Global AI Expo.

Delhi declaration on GPAI
- It acknowledges the need to harness new opportunities and mitigate the risks arising from the development, deployment, and use of Artificial Intelligence (AI).
- Affirms the commitment to uphold human dignity, human rights, and democratic values.
- Emphasizes the importance of fostering trust, transparency, accountability, and inclusiveness in AI.
- Recognizes the potential of AI to contribute to the United Nations Sustainable Development Goals and address global challenges.
- Encourages international cooperation and coordination on AI research, innovation, and policy.
- Supports the development of a comprehensive framework that encompasses shared principles for safe and trusted AI.
- Endorses India's proposal to establish and maintain a Global Digital Public Infrastructure Repository (GDPIR) to share digital public goods.
- GDPIR was established under the Ministry of Electronics and Information Technology (MeitY), to serve as an extensive repository, consolidating crucial insights and knowledge from both G20 members and guest nations.
- Calls for further dialogue on AI governance and ethics among stakeholders.

AIRAWAT
- NITI Aayog circulated the cabinet note to establish a cloud computing platform called AIRAWAT (Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform in 2019.
- The move to create a cloud computing platform is part of the government's goal of making India a pioneer amongst emerging economies with regard to AI and transforming sectors like education, health, agriculture, urbanization and mobility.

YUVAi initiative
- The National e-Governance Division (NeGD) partnered with Intel India to launch 'YUVAi- Youth for Unnati and Vikas with AI' program.
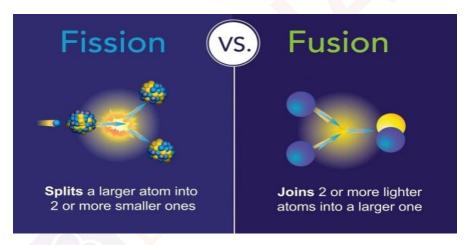
Aims:
- To foster a deeper understanding of AI, equip school students from classes 8 to 12 across the nation with relevant mindset and skill sets, and empower them to become human-centric designers and users of AI.
- The program offers an applied learning experience for students to understand and identify how AI technology can be used to tackle critical problems and lead to inclusive development of the nation.
- The program will be ongoing throughout the year to give a maximum number of students a chance to empower themselves to be future-ready.

9. JT-60SA

Syllabus: Science and technology
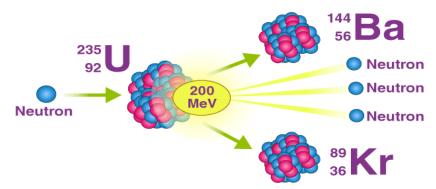
Prelims: JT-60SA

Context: JT-60SA, the world's largest and most advanced nuclear fusion reactor started its official operations in Japan, marking a major milestone towards achieving the goal of clean energy.
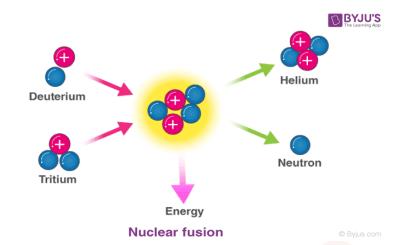
About JT-60SA
- JT-60SA is a joint initiative between the European Union and Japan aiming to investigate the feasibility of nuclear fusion as a sustainable and near limitless power source.
- The JT-60SA reactor is a six-storey-high machine, which is kept in a hangar in Naka, north of Tokyo. It comprises a doughnut-shaped "tokamak" vessel set to contain the swirling plasma heated up to 200 million degrees Celsius.
- One of the main objectives of this project is to replicate nuclear fusion ignition (net surplus energy), a feat first achieved by scientists at the Lawrence Livermore National Laboratory in California.

- The net energy gain was achieved by using lasers to fuse together two light atoms into a single denser one, releasing high amounts of energy. This net energy gain allows the nuclear fusion reaction to become self-sustaining.
- A similar even bigger nuclear fusion reactor is currently under construction in France, and is expected to begin operations in 2025.

Nuclear fusion

Significance of Nuclear Fusion Energy
- Sustainable clean energy source: It does not produce carbon dioxide – making it an important technology in the path to net zero emissions.
- No long-lived radioactive waste– It stops when the fuel supply or power source is shut down. It generates no high-level long-lived radioactive waste.
- Limited risk of proliferation– Fusion doesn't employ fissile materials like uranium and plutonium.
- Near limitless power source: Since nuclear fusion energy runs on hydrogen, the most abundant element in the universe, it's considered virtually limitless in its production potential, unlike the limited fossil fuels and other intermittent renewable energy sources.
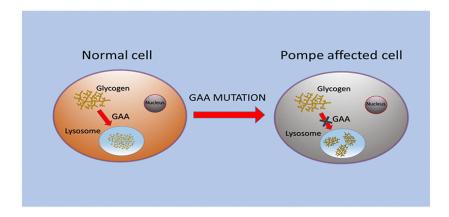
10. Pompe Disease

Syllabus: Science and technology, Biotechnology and diseases

Prelims: Pompe Disease

Context: India's first Pompe disease patient, passed away at the age of 24 years after battling the disease in a semi-comatose state.
- A semi-comatose state is characterized by partial coma, manifesting as disorientation and stupor without reaching a complete coma. Individuals in a semi-comatose state may exhibit responsiveness to stimuli, such as groaning and mumbling.
- Pompe Disease (also known as Glycogen Storage Disease Type II) is characterized by the buildup of glycogen in the lysosomes of the body's cells.
- This disease is a rare genetic disorder caused by a deficiency of the enzyme acid alpha-glucosidase (GAA). This enzyme is crucial for breaking down glycogen into glucose within the lysosomes of cells.
- Lysosomes are membrane-enclosed organelles that contain an array of enzymes capable of breaking down all types of biological polymers—proteins, nucleic acids, carbohydrates, and lipids.
- Its prevalence estimates range from 1 in 40,000 to 1 in 300,000 births.

- **Symptoms:** Muscle weakness, Motor skill delay, Degenerative impact on bones, Respiratory complications, Cardiac involvement, Implications for daily living.

● **Diagnosis:** Enzyme assays are conducted to measure the activity of GAA, the deficient enzyme. Genetic testing identifies mutations in the responsible GAA gene. Genetic analysis confirms the presence of specific mutations associated with Pompe Disease.
● **Treatment:** Although there is presently no cure for Pompe disease, there are treatment alternatives accessible to address symptoms and enhance the patient's quality of life. Enzyme Replacement Therapy (ERT) is a common treatment method that entails infusing the deficient enzyme to mitigate glycogen accumulation.

11. Anthrobots

Syllabus: Science and technology, Biotechnology

Prelims: Anthrobots

Context: Scientists have created tiny robots, called anthrobots, made from human tracheal cells capable of repairing damaged neural tissue.
● Unlike previous xenobots made from frog cells, anthrobots are self-assembling and formed from human tissue, potentially paving the way for personalized medicine.

How does it work?
● These are bioengineered entities consisting of human tracheal cells and possess the ability to autonomously configure themselves into various forms and dimensions.
● Anthrobots are self-assembling and can mend damaged tissues, when prepared using human tissue grown in the laboratory.
● This measures between the width of a human hair and the tip of a sharpened pencil.
● Biobots-robots can be made by combining several cell types and exploring other stimuli.
● Each Anthrobot starts as a single cell, derived from the surface of trachea in an adult donor.
● Trachea are covered with hairlike projections called cilia that help the tracheal cells push out tiny particles that find their way into air passages of the lung.
● Anthrobots varied in shape and cilia coverage, exhibiting behaviors like straight-line or circular movements.
● Spherical types with full cilia coverage were active wigglers, while unevenly distributed cilia prompted prolonged forward movements.
● They survived 45-60 days before natural biodegradation in lab conditions.
● Previous studies: When the cells are grown in the lab, they spontaneously form tiny multicellular spheres called organoids.
● Xenobots were prepared using clumps of embryonic frog cells, but had limited use and had to be carved manually into desired shapes.

Potential Applications
● As innovative instruments for regeneration, recovery, and the management of diseases.
● Regenerative medicine, wound healing, and disease treatment.
● Sustainable construction and outer-space exploration.
● The anthrobots, each between 30 and 500 micrometers across and capable of surviving for up to two months, are made from cells taken from adult human lung tissue. This tissue naturally has cilia on its surface that wave back and forth to transport mucus, which can absorb and thus clear away debris in inhaled air. (In contrast, cilia on frog skin move mucus around to keep the skin moist.)

12. Aktocyte tablets

Syllabus: Science and technology

Prelims: Aktocyte tablets

Context: AKTOCYTE tablets have been granted approval by the Food Safety and Standards Authority of India (FSSAI).

Aktocyte tablets
● Its a tablet used during cancer treatment to minimize the side effects of radiotherapy.
● Developed by Department of Atomic Energy and M/s. IDRS Labs Pvt. Ltd. Bengaluru
● **Characteristics**
   1. **Impressive Recovery in Pelvic Cancer:** AKTOCYTE Tablets show promise in pelvic cancer patients suffering from radiotherapy-induced Cystitis (Blood in urine).
   2. **Versatile AKTOCYTE Tablets:** Beyond a supplement, they serve as an adjuvant to cancer radiotherapy, a regenerative nutraceutical, an immunomodulator, and an antioxidant, highlighting their diverse applications in cancer care.
   3. **Safe:** AKTOCYTE has received approval from the FSSAI.
● **Market Entry:** AKTOCYTE Tablets, set to debut in January 2024, promise to revolutionize cancer treatment protocols.

FSSAI
1) Food Safety and Standards Authority of India (FSSAI) is a statutory body established under the Food Safety and Standards Act, 2006 (FSS Act).
2) FSSAI is an autonomous body under the Ministry of Health & Family Welfare.

Nutraceuticals: Bridging Nutrition and Medicine for Health
● The term "nutraceutical" was coined in 1989 by Stephen DeFelice.
● **Definition:** Nutraceutical products are products derived from food sources that provide both nutritional and medicinal benefits.
● **Meaning:** The term "nutraceutical" combines the two words "nutrient," which is a nourishing food component, and "pharmaceutical," which is a medical drug
● **Mechanism:** They contain a high concentration of bioactive compounds, derived from a natural source and have physiological benefits and aid in the prevention and treatment of disease.
● **Types:** Nutraceuticals can be grouped into four categories that are dietary supplements, functional food, medicinal food, and farmaceuticals.
● **Examples: Probiotics:** Beneficial bacteria that support gut health and digestion.; Green tea extract: Rich in antioxidants and associated with various health benefits.

13.　Project Gemini

Syllabus: Science and technology

Prelims: Project Gemini

Project Gemini
● Google has introduced project Gemini, an artificial intelligence (AI) model designed to exhibit human-like behavior.
● This development is expected to fuel the ongoing AI race and raise debates about the potential benefits and risks of the technology.
● Gemini aims to enhance Google's AI-powered chatbot Bard's intuitiveness and efficiency in tasks, particularly those involving planning.
● Google DeepMind, the AI division behind Gemini, emphasizes the model's problem-solving skills in math and physics, offering potential scientific breakthroughs.
● Concerns exist regarding the potential impact of AI on job displacement, misinformation amplification, and even triggering destructive behavior.

Global AI Governance
● **India:** NITI Aayog, has issued some guiding documents on AI Issues such as the National Strategy for AI and the Responsible AI for All report. Emphasises social and economic inclusion, innovation, and trustworthiness.
● **United Kingdom:** Outlined a light-touch approach, asking regulators in different sectors to apply existing regulations to AI. Published a white paper outlining five principles companies should follow: safety, security and robustness; transparency and explainability; fairness; accountability and governance; and contestability and redress.
● **US:** The US released a Blueprint for an AI Bill of Rights (AIBoR), outlining the harms of AI to economic and civil rights and lays down five principles for mitigating these harms. The Blueprint, instead of a horizontal approach like the EU, endorses a sectorally specific approach to AI governance, with policy interventions for individual sectors such as health, labour, and education, leaving it to sectoral federal agencies to come out with their plans.
● **China:** In 2022, China came out with some of the world's first nationally binding regulations targeting specific types of algorithms and AI. It enacted a law to regulate recommendation algorithms with a focus on how they disseminate information.

Applications of AI
● **Healthcare:** Recently, the Indian Council of Medical Research (ICMR) issued a guiding document- "The Ethical Guidelines for Application of AI in Biomedical Research and Health care", which outlines 10 key patient-centric ethical principles for AI application in the health sector.
● **Education:** IIT Kharagpur has collaborated with Amazon Web Services to develop the National AI Resource Platform (NAIRP), the future possibilities of which include monitoring eye movement, motion and other parameters for better teaching and learning.
● **Judiciary:** SUVAS (Supreme Court Vidhik Anuvaad Software): It is an AI system that can assist in the translation of judgments into regional languages. SUPACE (Supreme Court Portal for Assistance in Court Efficiency) was recently launched by the Supreme Court of India.

14. Is Pegasus spyware targeting journalists in India?

Syllabus: Developments in Science and Technology, Effects of scientific developments in everyday life

Mains: Issues with Pegasus spyware

Context: Recent reports by The Washington Post and Amnesty International allege the use of Pegasus spyware to target journalists in India, raising concerns about privacy breaches and the potential infringement on democratic principles. The revelations have prompted legal actions and demands for transparency from the government.

Issues:
- **Targeting Journalists:** The Pegasus spyware is alleged to have targeted journalists in India, including Siddharth Varadarajan and Anand Mangnale. The intrusion was discovered in October 2023 after Apple warned users, including Members of Parliament, about potential 'state-sponsored attacks' on their iPhones.
- **Zero-Click Exploits:** Pegasus employed a sophisticated zero-click exploit called BLASTPAST, allowing the installation of spyware on devices without the user's consent or any actions required. This method raises significant concerns about privacy and the vulnerability of personal devices.
- **Government Surveillance Allegations:** The revelations have led to accusations of mass surveillance by the government, stifling free speech and democratic dissent. Activists have filed petitions with the Supreme Court, demanding an investigation into the alleged use of Pegasus for surveillance.

Significance:
- **Privacy Concerns:** The use of advanced spyware like Pegasus to target journalists raises profound privacy concerns, challenging the fundamental right to privacy enshrined in the Constitution. The potential abuse of surveillance tools for political purposes undermines democratic principles.
- **National Security vs. Transparency:** The government's refusal to file a detailed affidavit in response to the Supreme Court's inquiry, citing national security concerns, has sparked a debate on the balance between national security imperatives and the need for transparency and accountability.

Solution:
- **Independent Investigation:** A thorough and independent investigation into the allegations of Pegasus usage is essential to ascertain the veracity of the claims. An impartial inquiry can address concerns about government surveillance and protect citizens' rights to privacy.
- **Legal Safeguards:** Strengthening legal frameworks to protect individuals from unwarranted surveillance is crucial. Robust legal safeguards and oversight mechanisms can prevent misuse of surveillance technologies and hold those responsible accountable.
- **Government Accountability:** The government should prioritize transparency and accountability in matters of surveillance. Public disclosure of policies, procedures, and oversight mechanisms related to the use of surveillance tools can build trust and ensure responsible governance.

Nut Graf: *The Pegasus spyware revelations highlight the delicate balance between national security and individual privacy. The allegations of targeting journalists and potential mass surveillance underscore the need for a comprehensive investigation and the establishment of robust legal safeguards.*

DEFENCE AND INTERNAL SECURITY

1. An anti-terror law and its interference with liberty

Syllabus: Challenges to Internal Security through Communication Networks

Mains: UAPA & debate of Liberty vs State Security

Context: In Fahad Shah's case, the Jammu and Kashmir High Court scrutinized the broad interpretation of the UAPA, expressing concerns over its impact on personal freedoms.

About UAPA:
- **Purpose:** UAPA (Unlawful Activities (Prevention) Act) stands as India's primary anti-terrorism statute.
- **Scope:** Empowers wide-ranging intervention based on vaguely defined terrorism-related offences.
- **Procedural Impact:** Imposes limitations on bail under Section 43-D(5) if accusations seem 'prime facie true.'

Misuse of UAPA:
- **Overreach in Application:** Instances documented where UAPA was used in cases disconnected from actual violence.
- **Vagueness in Offenses:** Allows interpretation to encompass innocent actions as preparatory or conspiratorial to terrorism.
- **Case Example:** Fahad Shah: Arrested under UAPA despite tenuous links to alleged offences.
- **Judicial Observations:** High Court questions the use of UAPA in cases lacking a clear terror threat.

Balancing Liberty and State Security:
- **Interpretation of Charges:** Examination of charges, like defamation as a terror act, scrutinized by the High Court.
- **Critical Legal Argument:** The state's attempt to link non-violent actions to terrorism is seen as overstepping legal boundaries.
- **Bail and Detention:** The High Court highlights the need for a nuanced approach in differentiating between varying levels of threat in UAPA cases.
- **Principle of 'Clear and Present Danger':** Emphasizes the necessity for solid evidence before arresting or detaining individuals under UAPA.

Way Forward:
- **Legal Evolution:** Courts must evolve to hold the state accountable for wrongful arrests and detentions.
- **Compensation and Redress:** Lack of provision for compensation or accountability highlighted in Fahad Shah's case.
- **Empowering Accountability:** Emphasizes the need for questioning state actions and holding them accountable for securing personal liberties.
- **Constitutional Mandate:** Reminder to uphold constitutional principles by scrutinizing state actions.

Nut Graf: *The Fahad Shah case highlights the contentious use of India's anti-terror law, the UAPA. While the law's vague scope allows for wide interpretation, the Jammu and Kashmir High Court's recent judgment scrutinizes its application. This case illuminates the fine balance between personal liberties and state security, prompting calls for increased accountability and a nuanced approach to law enforcement under UAPA.*

2. Digital Frauds

Syllabus: Challenges to Internal Security through Communication Networks

Mains: Digital Frauds

Context: Finance minister brainstorming session to tackle financial sector cyber crimes.

Details:
- As per RBI report the total number of fraud cases in the banking sector in FY23 were 13530 involving total amount of ₹ 30252 Cr
- Of this almost 49% or 6659 cases were in the digital payment - card/internet – category
- Citizen Financial Cyber Fraud Reporting and Management System (CFCFRMS) - has been developed by the Indian Cyber Crime Coordination Centre (I4C) for quick reporting of financial cyber frauds and monetary losses
- Of the 800 odd FIs (Financial Institutions – Banks, insurance companies etc), 259 have registered with I4C
- It has so far intercepted transactions worth ₹ 602 Cr since its inception in April 2021
- The complainant must provide the following information in case incident is reported on helpline number:
  - Mobile Number of the complainant
  - Name of Bank/Wallet/Merchant from which amount has been debited
  - Arcola. No./Wallet Id/Merchant Id/UPI Id from which amount has been debited

- ○ Transaction Id
- ○ Transaction date
- ○ Debit card/Credit card number in case of fraud made by using credentials of Debit card/Credit card
- ○ Screen shot of transaction or any other image related to fraud, if available

Recommendations
- The FIs have been asked to be registered with the CFCFRMS
- Banks have been asked to appoint nodal officers to coordinate with agencies
- States also have been asked to ensure data protection
- Suspension of 70 lakh mobile numbers (implemented)
- 4-hour delay in UPI transactions (yet to be implemented)

3. India at Interpol meet

Syllabus: Challenges to Internal Security and external security

Prelims: India at Interpol meet

Context: A high-ranking Indian delegation, led by CBI Director Praveen Sood and NIA Director-General Dinkar Gupta, addressed the 91st Interpol General Assembly.
- Urges member countries to deny safe haven to criminals, crime, and the proceeds of crime.
- Contextualized within India's ongoing efforts to extradite or deport alleged terrorists and wanted persons from countries like Canada, the United States, and the United Kingdom.

Issues:
- **Global Extradition Challenges:**
  - ○ India faces challenges in extraditing alleged terrorists and criminals from various countries.
  - ○ Specific reference to pro-Khalistan elements and other wanted persons.
- **Safe Haven for Criminals:**
  - ○ Concerns about some nations providing safe havens for criminals and the proceeds of crime.
  - ○ Emphasis on the need for international cooperation to prevent such safe havens.

Significance:
- **Increased Cooperation and Extradition Success:**
  - ○ The year has witnessed the return of 24 criminals and fugitives wanted by Indian agencies from abroad.
  - ○ Geo-location of 184 criminals in different countries demonstrates enhanced leveraging of Interpol channels and global collaboration.
- **Interpol's Centenary and Vision 2030:**
  - ○ The 100th anniversary of Interpol is marked by the General Assembly in Vienna.
  - ○ India's support for Interpol's Vision 2030 indicates a commitment to coordinated strategies in combating transnational crime.

Solutions:
- **Coordinated Strategies:**
  - ○ The delegation advocates for coordinated strategies to crack down on criminal organizations operating across international borders.
  - ○ Urges member countries to work together to prevent the misuse of their territories for criminal activities.
- **Global Adoption of Interpol's Vision 2030:**
  - ○ India's support for Vision 2030 indicates a collective commitment to align law enforcement efforts with evolving challenges.
  - ○ Vision 2030 likely emphasizes technological advancements and collaboration to enhance global security.

4. Counter-insurgency in J&K

Syllabus: Role of state and non-state actors in creating challenges to internal security

Mains: Counter-insurgency in J&K

Context: The conflict-prone region of Jammu and Kashmir (J&K) demands precise and just counterinsurgency operations to manage not only terrorism but also maintain public trust. Recent incidents in the Pir Panjal Valley, specifically Poonch and Rajouri districts, have raised concerns, including the death of civilians and alleged torture by security forces.

Issues in Counterinsurgency Tactics
- **Civilian Targeting:**
  ○ Death of three civilians and injuries to five others following an Army convoy ambush on December 21.
  ○ Alleged torture by security forces on civilians in response to militant attacks.
- **Unpopularity and Discontent:**
  ○ Actions increasing the unpopularity of the unelected regime in a Union Territory without provincial elections for over half a decade.
  ○ Breeding discontent among residents in a region that was relatively peaceful compared to the Kashmir Valley.
- **Provocation for Militants:**
  ○ Militants' aim to provoke forces into committing rights violations against civilians.
  ○ Utilizing grievances among civilians to increase their support base.
- **Legitimacy of Force:**
  ○ Alleged indiscriminate use of violence targeting civilians without just cause questions the legitimacy of state actions.
  ○ Potential erosion of public trust due to perceived unjust use of force.

Significance of Just Counterinsurgency
- **Avoiding Militant Manipulation:**
  ○ Unjust actions play into the hands of militants and their handlers across the border.
  ○ Risks increasing support for militancy among the local population.
- **Maintaining Legitimacy:**
  ○ Legitimacy of state actions depends on the justness of force.
  ○ Indiscriminate violence jeopardizes the perceived legitimacy of counterinsurgency efforts.

Solutions and Accountability
- **Swift Justice:**
  ○ J&K police registering a murder case against unidentified persons.
  ○ Army taking three senior officers off their posts and promising an inquiry.
  ○ Emphasize the need for swift and firm justice to address the civilian casualties and alleged torture.
- **Reassessing Security-Centric Approach:**
  ○ Acknowledge the limitations of a no-holds-barred security-centric approach.
  ○ Reevaluate strategies to balance security measures with respect for human rights.

Nut Graf: *Addressing the issues in counterinsurgency tactics in Jammu and Kashmir is imperative to prevent further escalation of violence and public discontent.*

5. ULFA Peace Accord

Syllabus: Role of state and non-state actors in creating challenges to internal security

Mains: Significance of ULFA Peace Accord

Context: The recent signing of a memorandum of settlement between the Union Home Ministry, the Assam government, and the pro-talks faction of the United Liberation Front of Asom (ULFA) marks a significant step towards lasting peace in Assam. Home Minister Amit Shah emphasized the importance of this tripartite settlement for Assam's peace, stating that it reflects the government's success in addressing violent insurgent groups in the state.

The Background
- Assamese – Ahom Kingdom – Assamese people have their own, unique culture and language, and a strong sense of identity.
- Starting in the 19th century, however, as the region's tea, coal and oil economy attracted migrants from all over, the indigenous population started to feel insecure.
- Natives believed that Assam had only ceded to British India due to the Yandaboo Treaty, signed in 1826 between two foreign powers – the British and the Burmese occupiers.
- This was further exacerbated by the Partition, and the subsequent exodus of refugees into the state from the erstwhile-East Pakistan.
- More refugees in 1970-71- Influx of illegal migrants from Bangladesh
- Demographic changes: Socio-ethnic tensions.
- Alleged electoral malpractices in the 1970s & 1980s.
- Growing sense of frustration and resentment.
- Assam Agitation – 1979.
- Amidst all this, a group of more radical thinkers, led by Bhimakanta Buragohain, Arabinda Rajkhowa, Anup Chetia, Pradip Gogoi, Bhadreshwar Gohain and Paresh Baruah formed ULFA on April 7, 1979.
- The founders of ULFA wanted to establish a sovereign Assamese nation through an armed struggle against the Indian state.

- For over 44 years, this 'struggle' has been chequered with kidnappings and extortion, executions and bomb blasts, leading to tragic loss of life in Assam and beyond.

Cross-Border Support
- Safe Havens in Bangladesh, Myanmar and Bhutan.
- Ties with intelligence agencies of Pakistan and China.
- Network with other North-East Insurgents and organised criminal cartels along the Myanmar border.
- Contact with HuJI & Al-Qaeda
- Peak Violence: 1979 to late 1990s

Indian Response
- AFSPA & President's Rule
- Operation Bajrang in 1990
- In 1992, one faction, later christened as Surrendered ULFA (SULFA), offered to surrender and engage in dialogue with the government.
- Ideological differences – multiple factions
- 2009: Sheikh Hasina came to power in Bangladesh
- India-Bangladesh targeted safe havens
- Arabinda Rajkhowa and later Anup Chetia handed over to India.

Peace Process
- **2011:** Suspension of Operations Agreement with pro-talks faction led by Arabinda Rajkhowa.
- ULFA (I) led by Paresh Barua rejected talks and is still operating from Myanmar-China border.
- **2023:** Tripartite Peace Accord with pro-talks faction of ULFA.

Issues Addressed:
- **Decades of Violence:** Assam and the northeast have experienced prolonged violence for decades, with groups like ULFA contributing to instability and loss of lives.
- **Surrender and Reintegration:** ULFA cadres, numbering 700, have agreed to surrender arms, vacate their camps, and participate in the peaceful democratic process. This signifies a crucial shift towards reintegration and mainstream engagement.
- **Political Insecurity:** The peace accord addresses the long-standing issue of political insecurity among the indigenous people of Assam. Reserving 97 out of 126 Assembly seats for indigenous people and following this principle in future delimitation exercises aims to address their concerns.
- **Economic Development:** The accord pledges ₹1.5 lakh crore in investment, indicating a commitment to economic development in the region. This can contribute to the overall well-being of the state and its residents.
- **Constitutional Safeguards:** The accord ensures constitutional safeguards, including the protection of land rights and restrictions on migration between constituencies. This is crucial for maintaining the socio-economic fabric of the region.

Solutions and Future Steps:
- **Time-Bound Program:** Home Minister Amit Shah announced a time-bound program to fulfill ULFA's demands. The formation of a monitoring committee ensures the effective implementation of the peace accord.
- **Inclusive Dialogue:** Assam Chief Minister Himanta Biswa Sarma has extended an invitation to the Paresh Baruah faction of ULFA to join talks, emphasizing the importance of inclusive dialogue for comprehensive peace.
- **Continued Engagement:** Ongoing engagement with stakeholders, including the ULFA, is crucial for sustaining peace. The government should remain committed to addressing concerns and fostering an environment of trust.

Nut Graf: The peace pact with the pro-talks faction of ULFA represents a significant milestone in Assam's journey towards lasting peace. The accord addresses key issues, including political representation, economic development, and the reintegration of former insurgents into mainstream society.

6.   INS Imphal & Expansion of Warships

Syllabus: Security challenges and their management in border areas

Prelims: INS Imphal

Mains: INS Imphal & Expansion of Warships

Context: The commissioning of INS Imphal, the third P-15B 'Visakhapatnam' class stealth guided missile destroyer, marks a significant milestone for the Indian Navy. Named after a city in the Northeast, Imphal showcases India's commitment to 'Aatmanirbharta' in defense and reinforces the nation's growing maritime prowess.
- With the Navy's focus on expanding its fleet to meet regional commitments, Imphal's swift construction and trials exemplify the pursuit of self-reliance in defense.

Issues at Hand:

- **Record-Breaking Construction:** INS Imphal's construction stands out as the fastest for any indigenous destroyer, with a keel laid on May 19, 2017, and delivery to the Navy on October 20, within a record six-month timeframe. This achievement is crucial amid the Navy's efforts to enhance its capital warship fleet in response to growing engagements in the Indian Ocean Region (IOR).
- **Strategic Significance:** As part of the P-15B class, INS Imphal contributes to the Navy's aim of becoming a 170-180 ship force by 2028. The ship's commissioning aligns with India's broader maritime strategy, emphasizing control of the sea in the Indo-Pacific region.
- **Indigenisation and Collaborations:** INS Imphal boasts a high level of indigenisation, with about 75% of its components sourced locally. Collaborations with organizations like Brahmos Aerospace, Larsen & Toubro (L&T), Bharat Electronics Limited (BEL), and others demonstrate a conglomeration of diverse strengths contributing to the ship's capabilities.
- **Geopolitical Context:** The commissioning comes at a time when the Indian Navy is navigating increased Chinese naval presence in the IOR. The enhanced stealth features of the P-15B class, including reduced radar cross-section, enhance India's maritime capabilities and deterrence.

Significance of the Commissioning:

- **Naval Modernization:** INS Imphal is part of the Navy's modernization drive, showcasing advanced technologies, including BrahMos cruise missiles, torpedo tube launchers, and medium-range missiles. The ship's capabilities align with contemporary naval warfare requirements.
- **Aatmanirbhar Bharat:** The ship's rapid construction and significant indigenisation contribute to the vision of 'Aatmanirbhar Bharat' in the defense sector. It reflects a shift toward self-sufficiency and reduced dependency on foreign sources for critical defense equipment.
- **Strategic Alignment:** INS Imphal's commissioning reinforces India's strategic commitment to controlling the sea, particularly in the Indo-Pacific region. Its deployment adds to the Navy's deterrence capabilities and strengthens maritime security.

Solutions and Future Steps:

- **Continued Indigenisation:** The Navy should continue prioritizing indigenisation efforts, fostering collaborations with domestic entities, and supporting research and development in defense technologies.
- **Enhanced Maritime Surveillance:** With a focus on the Indian Ocean Region, the Navy should invest in advanced maritime surveillance capabilities, leveraging technologies to monitor and secure vital sea lanes.
- **Strategic Alliances:** Strengthening diplomatic and naval collaborations with like-minded nations in the Indo-Pacific will enhance collective maritime security efforts and contribute to regional stability.

Nut Graf: *The commissioning of INS Imphal underscores India's commitment to a modern and self-reliant naval force. As the Navy continues to navigate complex geopolitical challenges in the Indian Ocean Region, the P-15B class destroyers, with their advanced features, play a crucial role in enhancing India's maritime capabilities.*

ENVIRONMENT AND ECOLOGY

1. COP28 — many a slippery slope ahead

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Mains: COP28

Context: The 28th Conference of Parties (COP28) held in Dubai marked a pivotal moment in the global effort to combat climate change. Tasked with conducting the first five-yearly global stocktake under the Paris Agreement, COP28 aimed to assess progress, set emission reduction targets, and address critical issues such as adaptation, financing, and support for developing nations.

Issues Discussed at COP28
- **Global Stocktake Findings**
  ○ The reports emphasized the urgent need to restrict global heating to 1.5°C above pre-industrial levels.
  ○ Increasing occurrences of severe heat waves, droughts, forest fires, floods, and rising sea levels underscored the pressing nature of climate change.
- **Focus on Fossil Fuels**
  ○ Fossil fuels, responsible for a significant portion of greenhouse gas emissions, took centre stage at COP28.
  ○ Controversies arose regarding the influence of the oil industry and the surprising claim by the COP28 President, Sultan Al Jaber, challenging the need to cut back on fossil fuels.
- **Emission Reduction Targets**
  ○ The three global stocktake draft texts highlighted the necessity for a "deep, rapid, and sustained" reduction in global emissions, aiming for net-zero CO_2 by 2050.
  ○ Initial disagreements over phasing down or out of fossil fuels led to intense negotiations and a subsequent compromise.
- **Draft Ambiguities**
  ○ The second draft faced criticism for providing only a bullet list of options for emissions cuts, with vague language around reducing fossil-fuel production.
  ○ The final draft, while calling for a phase-down of "unabated" coal power, left room for ambiguous terms like "low-carbon fuels" and "transitional fuels."
- **Financial Support**
  ○ The draft acknowledged the inadequacy of the earlier commitment of $100 billion per year by 2020, but failed to specify new financial targets.
  ○ Developing countries' concerns about the lack of progress on financial support, especially for adaptation and clean energy transition, were not adequately addressed.

Significance
- **Industry Influence**
  ○ The notable influence of fossil fuel companies, with a significant presence at COP28, raised concerns about their role in shaping climate policies.
- **Global Cooperation**
  ○ COP28 highlighted the challenges in achieving global consensus, with divergent opinions on emission reduction strategies, financial commitments, and the role of fossil fuels.

Way forward:
- **Clear Definitions**
  ○ Future climate conferences must strive for unambiguous language in addressing issues like fossil fuels, ensuring no loopholes that favour the industry.
- **Enhanced Financial Commitments**
  ○ Developed countries should revisit and strengthen financial commitments to support developing nations in their adaptation and clean energy transition efforts.

Nut Graf: *COP28, while acknowledging the urgency of climate action, faced challenges in reaching concrete agreements. The compromise on fossil fuels and ambiguities in the final draft indicates the need for more stringent measures and clearer commitments in future conferences.*

2. Is India doing enough to tackle climate change?

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Mains: India's Initiatives to tackle climate change

Context: In a groundbreaking move, all 198 signatories to the 28th United Nations Conference of the Parties (COP28) embraced an agreement to "transition away" from "all fossil fuels."
- India, pivotal in altering language at COP26, now faces scrutiny as the third-largest greenhouse gas emitter.
- The question arises: Is India doing enough to mitigate and adapt to climate change?

UAE Consensus at COP28
- COP28 in a petrostate with an oil company chief as president marked historic outcomes.
- The Loss and Damage Fund (LDF) operationalized, emphasizing a 'just, orderly, and equitable' transition away from fossil fuels.
- Concerns raised about loopholes, including low-emission technologies and carbon capture, allowing the fossil fuel industry to persist.
- Clarification on the language: Phasing out fossil fuel subsidies but transitioning away from fossil fuels and phasing down unabated coal use.
- Critique on the weakness of ambition, emphasizing the need for alternatives and the challenge of subsidizing fossil fuels without viable alternatives.

LDF and Developing Countries' Ambition
- Acknowledgment of the $700 million raised by the LDF, seen as a major victory for climate justice movements.
- Reference to technology transfer initiatives and the need for financial support to aid developing countries in transitioning to renewable energy.
- Developing countries face a Catch-22 situation: lack of know-how to decarbonize sectors coupled with insufficient funds.
- Importance of addressing the economic paradigm for growth, emphasizing the need to prioritize environmental concerns.

India's Role and Contribution
- India's economic paradigm is still centred on GDP, with coal dominating despite the growth of the solar economy.
- Suggestion to evaluate economic growth metrics in terms of environmental interests and equity.
- India should place the environment at the centre of India's growth paradigm, advocating for a discourse on de-growth.
- There is a need for India's unique developmental paradigm, considering the regional power and emerging economy dynamics.
- **Monetary Contribution and Soft Power:** India's responsibility to contribute, citing soft power influence and assistance provided to neighbouring countries.
- India should address domestic needs before significant monetary contributions to the Loss and Damage Fund.
- India is increasingly engaged in the LDF's development and the role played by the National Disaster Management Authority.
- India's non-monetary contributions, such as knowledge sharing and active participation in global networks.

Nut Graf: *India, at the crossroads of being a regional power and an emerging economy, grapples with the challenge of balancing economic growth and environmental responsibility.*

3. What does COP-28 mean for cities?

Syllabus: Conservation, Environmental pollution and degradation

Prelims: COP-28

Mains: COP-28 on cities

Context: The 28th Conference of Parties (COP-28) in Dubai marked a crucial juncture in global efforts to combat climate change.
- While it fell short of delivering a definitive end to fossil fuel use, it initiated discussions that some see as the "beginning of the end" of the fossil fuel era.
- Amidst the Global Stock Taking and approval of the Loss and Damage Fund, the COP-28 focused on both mitigation and adaptation strategies.

Cities and Climate Change: An Overview
- **Evolution of Urbanization**
  - In 1995, during the inception of UNFCC's COP, 44% of the global population lived in cities.
  - At present, urban dwellers constitute 55%, projected to rise to 68% by 2050.
  - Urban areas consume 75% of primary energy and contribute to approximately 70% of CO2 emissions.
- **Importance of Addressing Urban Issues**
  - Achievement of Paris Climate Agreement targets hinges on resolving urban challenges.
  - COP-28 acknowledged the pivotal role of cities in both mitigating and adapting to climate change.
- **COP-28's Focus on Cities**
  - Dedicated Ministerial Meeting on Urbanization and Climate Change.
  - A special day at COP-28 was allocated for a ministerial meeting on urbanization and climate change.
  - Participants included ministers of housing, urban development, environmental finance, local and regional leaders, financial institutions, NGOs, and other stakeholders.
- **City Representation and Civil Society Advocacy**
  - City representatives and Civil Society Organizations (CSOs) pressed for inclusion in decision-making processes.
  - The principle of "nothing for us without us" underscored the need for redefining financial and governance structures.
- **Call for Recognition of Subnational Governments**
  - Emphasis on multi-level green deal governance, direct actions in cities, and acknowledgement of city efforts in COP decision documents.

Challenges in the Global South
- **Vulnerabilities of Cities in the Global South**
  - Cities in the Global South face greater vulnerability due to the limited empowerment of city leaders, informal sector dominance, and susceptibility to climate-induced disasters.
  - Social and economic inequities, along with pollution, compound challenges for these cities.
- **Need for Radical Shift in Processes**
  - Radical shifts in governance processes are essential to address the inherent issues in Global South cities.
  - A climate atlas mapping vulnerable cities and identifying hotspots is proposed, requiring support from existing financial structures.
- **Exclusion of Cities in National Climate Action Plans**
  - Cities often find themselves excluded from the preparation of Nationally Determined Contributions (NDCs) and National Adaptation Plans.
  - Reclaiming space for city leaders and civil society groups in these processes is crucial for equitable climate action.

Nut Graf: While COP-28 may not have delivered a groundbreaking resolution, it highlighted the interconnectedness of climate action, social justice, and the role of urban areas.

4.   Is the world closer to phasing out fossil fuels?

Syllabus: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

Prelims: Global Methane Pledge

Mains: Phasing out of fossil fuels

Context: Recently, the 28th edition of the Conference of Parties (COP) agreed that the world must "transition" away from fossil fuels in a "just, orderly and equitable manner" to achieve net zero by 2050.

Dubai consensus on fossil fuel:
- **Formal acknowledgement:** The Dubai Consensus for the first time formally acknowledged that emission from fossil fuels is the major cause of global warming.
- **Parity among fossil fuels:** The Dubai Consensus included all fossil fuels and recognised that all of them need to be phased out for the world to have a chance at preventing global warming.
- **ALTERRA:** The President of UAE announced the creation of a $30 billion catalytic climate investment fund named ALTÉRRA.
- **Global Renewable and Energy Efficiency Pledge:** The pledge was taken to triple worldwide installed renewable energy capacity and double the global average annual rate of energy efficiency by 2030.
- **Methane emission:** The Dubai Consensus emphasised that methane, a key component of natural gas, is responsible for about a third of global warming. Accelerating and substantially reducing non-carbon-dioxide emissions globally, particularly methane emissions, by 2030 is necessary to prevent average temperatures from rising beyond 1.5 degrees Celsius by the end of the century.

Challenges in replacing fossil fuels

- **Intermittency of renewable energy:** Unlike fossil fuels, power from natural sources such as solar and wind is not easily available on demand. This is due to the unavailability of sunlight at night and the temperamental nature of ocean and atmospheric conditions affecting wind.
- **Fiscal implication:** Developing reliable technologies, infrastructure, transmission grids, and pipelines to make renewable energy available for households and vehicles requires a high upfront investment, which may exceed the capacities of most developing countries. In contrast, fossil fuels benefit from existing, well-established infrastructure networks.
- **Economic impact:** India has resisted cutting methane emissions, as the agriculture sector contributes to the majority of methane emissions in the country.
- **Lack of consensus:** Developing countries like India and China have protested against the phasing out of coal, citing its necessity to lift their populations out of poverty and provide energy security. The United States, heavily dependent on oil and gas reserves, has never advocated for eliminating them.

Way Ahead:

- **Transition fuels:** The Dubai Consensus agreed that transition fuels like natural gas, with lower emissions than fossil fuels, could play a role in facilitating the energy transition while ensuring energy security.
- **Energy infrastructure:** Governments need to invest in building infrastructure that can accelerate the deployment of renewable energy.
- **Global Methane Pledge:** Nearly 150 countries have agreed to cut methane emissions by 30% of 2020 levels by 2030 during the COP-27 summit in Egypt.

Nut Graf: *The Dubai Consensus formally acknowledged that emissions from fossil fuels are the major cause of global warming and emphasised the need to prevent emissions from all fossil fuels.*

5. UAE announces $30 billion fund to boost climate investments

Syllabus: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

Prelims: COP-28

Context: The UAE, host of COP-28, unveiled a significant commitment of $30 billion to the ALTÉRRA investment fund.
- ALTÉRRA, a privately managed fund chaired by COP-28 President Sultan Ahmed Al Jaber, aims to mobilize $250 billion globally by 2030.
- The fund focuses on climate investments and aims to transform emerging markets and developing economies.

Issues:
- **Climate Investment Challenges:**
  - Global efforts to combat climate change face financial challenges, with a significant annual requirement for emerging markets and developing economies.
  - The need for substantial investments to address climate change and meet the targets set in international agreements.
- **Dual Role Criticism:**
  - Sultan Ahmed Al Jaber faces criticism for holding dual roles as COP-28 President and CEO of Abu Dhabi National Oil Company.
  - Concerns raised about potential conflicts of interest and the ability to deliver successful outcomes at COP.

Significance:
- **Financial Commitment and Global Mobilization:**
  - The $30-billion commitment to ALTÉRRA signifies the UAE's commitment to climate action and global collaboration.
  - Aims to mobilize $250 billion globally by 2030, making it the largest fund of its kind focused on climate investments.
- **India's Clean Energy Development:**
  - India stands to benefit from the initial tranche, with an unspecified amount allocated for developing over 6 GW of new clean energy capacity.
  - Specific focus on establishing 1,200 MW of wind and solar projects in India, contributing to the country's renewable energy goals.

Solutions:
- **Private Capital Attraction:**
  - ALTÉRRA seeks to attract private capital on a significant scale, creating a multiplier effect in climate-focused investments.
  - Aims to be a transformative solution, reflecting the COP Presidency's Action Agenda and the UAE's commitment to making climate finance accessible.

- **Inclusive Collaboration:**
  - Sultan Ahmed Al Jaber emphasizes involving a wide range of entities, including governments, the private sector, renewable energy companies, and oil and gas firms.
  - Calls for inclusive collaboration to deliver successful outcomes at COP and advance efforts to limit temperature rise.

6. Loss & Damage Fund

Syllabus: GS 3- Environment

Prelims: About Loss & Damage Fund

Introduction
- The 28th Conference of Parties (COP-28) witnessed a landmark agreement as member countries decided to operationalize the Loss and Damage (L&D) Fund to compensate nations grappling with climate change.
- The Fund, housed at the World Bank but managed independently, receives commitments nearing $250 million, with further financial contributions required to fulfil its mission.

Background and Development of L&D Fund
- The concept of a Loss and Damage Fund has roots dating back nearly three decades, gaining traction during COP-27 in Sharm ElSheikh, Egypt.
- After five transitional committee meetings, countries achieved unanimous agreement on the fund's operationalization, spearheaded by COP-28 President Sultan Ahmed Al Jaber.

Financial Commitments
- The L&D Fund garnered financial commitments from various countries, including $100 million each from the UAE and Germany, $17 million from the U.S., approximately $50.6 million from the U.K., and $10 million from Japan. The European Union pledged $145 million, in addition to Germany's contribution.

Implementation and Host Organization
- The World Bank will serve as the "interim host" for the Fund for four years, and an independent secretariat will manage its operations.
- All developing countries are eligible to apply for funding, and every country is encouraged to contribute on a voluntary basis.

Positive Start and Future Momentum
- The agreement to initiate the Fund on the first day of COP-28 received positive feedback, setting a favourable tone for discussions in the following days.
- Representatives from approximately 160 countries, including heads of state, will participate in the World Climate Action Summit, emphasising the global commitment to climate action.

Concerns and Critiques
- Concerns have been raised about its long-term sustainability.
- The absence of a defined replenishment cycle raises questions about the fund's ability to address ongoing and future climate-related challenges.

Impact of Climate Change
- A study from the University of Delaware revealed that the cost of loss and damage from climate change amounted to about $1.5 trillion in 2022.
- Developing countries and some of the poorest nations experienced an average loss of about 8.3% of their GDP due to climate change.

7. India offers to host COP-33

Syllabus: Conservation, Environmental pollution and degradation

Prelims: COP-33

Mains: India's role in COP-33

Context: Prime Minister Narendra Modi announces India's offer to host the 33rd edition of the Conference of the Parties (COP) in 2028 during his address at COP-28.
- Emphasis on the need for global collaboration through India's "Green Credit Initiative."

Issues:
- **Global Exploitation and Climate Impact:**
  - Modi highlights the impact of ruthless exploitation of nature by a few, affecting the entire world.
  - Stresses the disproportionate burden on the inhabitants of the Global South.
- **Carbon Space and Developed Countries:**
  - Modi calls for developed countries to vacate the carbon space before 2050.
  - No fresh commitments announced to contain global temperature rise.
- **Green Credit Initiative:**
  - Modi urges countries to join India in its "Green Credit Initiative."
  - Described as a "non-commercial" effort to create a carbon sink.
  - The initiative aims to generate credits for plantations on waste or degraded lands and river catchment areas.

Significance:
- **Hosting COP-33 in India:**
  - Proposal for hosting COP-33 underscores India's commitment to addressing climate change.
  - Aims to facilitate global cooperation and dialogue on climate issues.
- **Green Credit Initiative's Environmental Impact:**
  - Modi's vision for the Green Credit Initiative aligns with global efforts for sustainable and environmentally conscious living.
  - Focus on incentivizing voluntary environmental actions across diverse sectors.
- **Financial Commitments and Targets:**
  - Acknowledgment of the Loss and Damage Fund with financial commitments of at least $500 million.
  - Support for the $30-billion Climate Investment Fund announced by the UAE.
  - Call for finalizing the New Collective Quantified Goal (NCQG) for climate finance commitments.

Solutions:
- **Carbon Neutrality and Emission Reduction Targets:**
  - Reiteration of India's commitments from COP-26, including a 45% reduction in emissions intensity and a 50% share of non-fossil fuels by 2030.
  - Aspiration to achieve net-zero emissions by 2070.
- **Climate Finance:**
  - Emphasis on developed countries meeting financial commitments to the Green Climate Fund (GCF) and the Adaptation Fund.
  - Call for affordable finance from multilateral development banks to support developing countries.

Nut Graf: *Modi's vision at COP-28 outlines crucial mechanisms for global collaboration, particularly through the Green Credit Initiative. The invitation to the world for cooperation on sustainable initiatives reflects a commitment to environmentally conscious living.*

8.   India not among 118 nations that pledged to push green energy

Syllabus: Conservation, Environmental pollution and degradation

Prelims: Global Renewables & Energy Efficiency Pledge

Mains: Significance of Global Renewables & Energy Efficiency Pledge

Context: The COP-28 climate summit witnessed the commitment of 118 countries to triple installed renewable energy capacity by 2030, as outlined in the Global Renewables and Energy Efficiency Pledge. However, India's notable absence from the list has raised concerns and sparked discussions.
- This move comes despite India's existing commitment to install 500 GW of electricity from non-fossil fuel sources by 2030, with around 170 GW already in place as of March 2023.

Issues
- **Non-participation of India and China:** India, along with China, has chosen not to sign the pledge despite being major players in the global renewable energy landscape. China, possessing the world's largest installed renewable energy capacity, also refrained from joining the commitment.
- **Existence of problematic language:** Reports suggest that some language in the pledge text is deemed "problematic." However, specific details regarding India's concerns remain undisclosed.
- **Disagreement on large dams:** The global community faces a disagreement on whether large dams, considered renewable energy sources by India, should be included in the commitment. This adds a layer of complexity to India's decision, especially as tripling the current installed capacity would surpass India's 500 GW commitment.

Significance
- **Legal sanctity of the pledge:** The commitment made by the 118 nations lacks legal sanctity and has not been formally incorporated into the primary negotiating texts for COP-28. This raises questions about the enforceability and accountability of the pledge.
- **India's existing commitments:** India has already set ambitious targets as part of its nationally determined contributions (NDCs), aiming to install 500 GW of non-fossil fuel electricity by 2030. The absence of India's endorsement may be influenced by the belief that the current targets are sufficiently ambitious.

Solutions
- **Clarification of concerns:** It is crucial for the international community to address the concerns and reservations expressed by India regarding the language and specific provisions of the pledge. Open dialogue can help resolve issues and encourage broader participation.
- **Incorporating large dams:** Resolving the global disagreement on the classification of large dams as renewable sources is essential. Clearly defining and including these sources in the commitment could pave the way for India's participation.

Nut Graf: The absence of India, a significant renewable energy player, from the list of countries committing to tripling installed renewable energy capacity raises questions about the inclusivity and global consensus on such pledges.

9. COP-28 & Health

Syllabus: Conservation, Environmental pollution and degradation

Prelims: COP-28

Mains: COP-28 & Health

Context: The United Nations Conference of Parties (COP-28) summit, scheduled in the UAE, is set to mark a historic moment by placing a strong emphasis on the intersection of climate change and public health.
- The summit, after 28 years of climate negotiations, acknowledges the pressing need to address health concerns arising from unabated greenhouse gas emissions, extreme weather events, and environmental changes.

Issues
- **Climate-Health Nexus:** Greenhouse gas emissions contribute to extreme weather events, air pollution, food insecurity, water scarcity, and population displacement, impacting public health.
- **Global Disparities:** Regions like Africa, Asia, South and Central America, and small island states, which have contributed the least to climate change, bear the brunt of its adverse health effects.
- **Vector-Borne Diseases:** Altered weather patterns affect the prevalence and distribution of diseases like dengue and malaria, disproportionately impacting marginalized communities.

Significance
- **Declaration on Climate and Health:** Endorsed by 123 governments, the COP-28 Declaration highlights the crucial connection between climate change and health.
- **Inclusion of Health Day:** The inaugural 'Health Day' at COP-28 signifies a shift in focus, prompting discussions on how public health can adapt to climate change and the financing required for this transformation.
- **Ministerial Engagement:** Health inter-ministerial meetings involve ministers of health, environment, finance, and other relevant departments.

Solutions
- **Mitigating Emissions:** The COP-28 Declaration addresses the need for mitigating emissions, emphasizing the importance of transitioning from fossil fuels to renewable energy.
- **Adaptation in Health Sector:** Discussions include strategies for the health sector to adapt to climate change, preventing and managing health crises triggered by environmental shifts.
- **Climate Financing:** The financial aspect is crucial, with calls for contributions from private financial institutions to the Green Climate Fund. However, concerns exist regarding the source and nature of these funds.

Challenges
- **Lack of Focus in G-20 Countries:** Wealthy nations, major contributors to historical greenhouse gas emissions, are criticized for insufficient attention to health in their climate action plans.
- **Weather-Induced Health Crises:** Predictions indicate significant financial tolls and increased poverty due to direct health impacts, necessitating robust climate-health funding mechanisms.
- **Financial Considerations:** The Declaration endorses funding from various sources, including domestic budgets and private sector actors, raising concerns about the adequacy and nature of financial contributions.

Nut Graf: The COP-28 summit marks a critical juncture where the intersection of climate change and public health takes center stage. The significance of this focus lies not only in acknowledging the challenges but in crafting viable solutions that address the health impacts of climate change.

10. Global Stocktake draft calls for phasing out fossil fuels

Syllabus: GS 3 – Environment

Prelims: About Global Stocktake draft

Introduction
- The COP-28′s Global Stocktake draft introduces a groundbreaking clause, calling for a worldwide phase-out of all fossil fuels, reflecting a shift in climate talks towards urgent emissions reduction to limit global temperature rise to 1.5 degrees Celsius.

Key Developments in the Draft Text
1. **Fossil Fuel Phase-Out Commitment**
   - The draft calls for an "orderly and just phase-out of fossil fuels," marking the first time such language has appeared in this context.
   - The summit′s location in the United Arab Emirates, a major oil producer, and the influence of COP leadership tied to the oil industry have played a role in shaping the language.
2. **Global Stocktake Overview**
   - The GST, the first since 2015, aims to evaluate the Paris Agreement′s implementation, assess progress towards temperature goals, and guide countries in updating emission reduction commitments.
   - It covers various negotiation tracks, with separate drafts expected for finance and adaptation.
3. **Renewable Energy and Energy Efficiency Goals**
   - The draft includes a commitment to triple global renewable energy capacity by 2030 compared to 2022 levels (to 11,000 GW) and double the annual rate of energy efficiency improvement to 4.1% by 2030.
   - These goals were initially proposed during the G-20 leaders summit in Delhi but now include a specific focus on enhancing energy efficiency.
4. **Transition to Sustainable Lifestyles**
   - The draft emphasises the importance of transitioning to sustainable lifestyles and patterns of consumption and production to address climate change.
   - Echoes the sentiments of India′s 'Mission Life' movement, championed by Prime Minister Narendra Modi.

Challenges and Critics' Perspectives
- The draft, with 193 separate points over 24 pages, contains numerous options, leading to potential points of contention.
- Critics express disappointment, citing the lack of a clear roadmap for implementing the GST and highlighting the vague language regarding reporting progress and goals.

11. COP-28 calls for 'transition away' from fossil fuels

Syllabus: Conservation, Environmental pollution and degradation, Environmental impact assessment.

Mains: Dubai Consensus

Context:
Global nations adopted the Dubai Consensus, a resolution calling for a transition away from fossil fuels to achieve net zero by 2050, balancing concerns of developed and developing countries.

Introduction
- Nations gathered in Dubai have taken a significant step towards reducing global reliance on fossil fuels by adopting the Dubai Consensus, a resolution emphasising transitioning away from fossil fuels in energy systems.
- The resolution calls for a just, orderly, and equitable move towards achieving net zero by 2050, aligning with scientific recommendations to limit global temperature rise to 1.5 degrees Celsius.

Transitioning Language and Compromises
- The consensus text encourages parties to transition away from fossil fuels but avoids the stronger term "phase-out" seen in earlier drafts.
- The path to achieving net-zero emissions by 2050 is crucial in preventing a temperature increase beyond 1.5 degrees Celsius by the end of the century, according to the Intergovernmental Panel on Climate Change (IPCC).

Emission Reduction Targets
- To reach net-zero emissions by 2050, the scientific community suggests cutting emissions to 43% of 2019 levels by 2030 and 60% by 2035.
- The timeline poses a considerable challenge, with just seven years remaining to achieve the first target while global emissions continue to rise annually.

Compromise Between Developed and Developing Countries
- The Dubai Consensus reflects a compromise between developed and developing nations on addressing greenhouse gas emissions while considering proportional contributions based on historical responsibilities for the climate crisis.
- Negotiations are incremental due to UN rules requiring unanimous agreement from all 198 signatories on each line of the text.

Global Reactions and Concerns
- Delegates from vulnerable nations express dissatisfaction with the agreement, feeling it falls short of ending fossil fuel use, putting their countries at risk.
- Some countries, including Saudi Arabia, Egypt, Colombia, and Senegal, acknowledge the agreement's step toward a fossil-free future but express concern over the lack of progress in delivering promised funds from developed countries to support developing nations.

Focus Beyond Emissions: Adaptation and Support
- Climate talks address not only emission reduction but also adaptation to climate impacts and means of implementation and support.
- Developing nations emphasise the need for financial support and technology from developed countries to transition away from fossil fuels.

Challenges and Broken Promises
- Criticism arises from the perception that promises made by developed countries, such as mobilising $100 billion annually from 2020 to 2025, have been inadequately fulfilled.
- Anand Patwardhan of the University of Maryland emphasises the need for developed nations to reach net zero much earlier, providing space for developing countries.

NutGraf: Nations unite in Dubai, adopting the Dubai Consensus for a fossil-free future, emphasising the transition from fossil fuels to achieve net zero by 2050 amid challenges and compromises between developed and developing nations.

12. India's ethanol conundrum

Syllabus: Environmental Pollution and Degradation

Mains: Dilemma of Food Inflation vs Energy Security in achieving Ethanol blending target

Context: Over 100 nations at COP28 aimed to triple global renewable energy capacity by 2030.

EBP Target in India:
- Ethanol Blended Petrol (EBP) in India rose from 1.6% in 2013-14 to 11.8% in 2022-23.
- India aims for a 20% ethanol blending target by 2025.

Raw Materials for EBP: Sugarcane (Brazil) and corn (U.S.) are major feedstocks for ethanol.
- **Sugarcane:**
  - **Source:** Widely used in tropical countries like India and Brazil for ethanol production.
  - **Derivation Process:** Ethanol is obtained from sugarcane primarily through processing its by-products, notably molasses.
  - **Ethanol Production:** Molasses, a by-product of sugar production, undergoes fermentation and distillation to produce ethanol.
  - **Impact:** Sugarcane-based ethanol production typically has a lower impact on sugar output, as both sugar and ethanol are simultaneously produced.
- **Corn (Maize):**
  - **Source:** A significant raw material extensively used, especially in the United States, for ethanol production.
  - **Ethanol Production:** Corn-based ethanol production involves directly utilizing the grain itself, leading to a more direct competition between food and fuel usage.
  - **Impact on Food Prices:** The use of corn for ethanol production affects food prices and livestock feed availability due to competition for grain resources.
  - **Market Dynamics:** Corn-based ethanol production can impact broader grain markets, potentially redirecting other grains like wheat or barley to substitute corn in the livestock industry during periods of high corn prices.

Binary of Crude and Food Prices:
- The link between high crude prices and food prices is emphasized by ethanol production from corn and its impact on other grain markets.
- Food prices remained high post-2008 financial crisis until global crude prices fell below $80 per barrel in 2014.
- Post-pandemic oil price recovery escalated food prices, breaching 2021 levels.

Situation in India and New Order:
- India faces challenges in achieving the 2025 EBP target, transitioning towards grains-based ethanol, particularly maize.
- Govt. authorized NAFED and NCCF to procure maize for ethanol, risking potential economic challenges.
- Differential pricing incentivized cane juice for ethanol, reducing sugar stocks; the Ministry's order banned cane juice for ethanol.
- Transition to grains-based ethanol for the 2025 target may lead to potential food inflation due to the need for 16.5 million tonnes of grains annually.
- India's renewables strategy faces a food-fuel trade-off; options include revisiting EBP targets or investing more in infrastructure, urban design, and renewable energy sources like solar power.

Nut Graf: *India grapples with escalating ethanol blending targets amidst raw material challenges. Transitioning to maize-based ethanol risks food inflation. The complex trade-off between fuel needs and food security demands a reevaluation of targets or heightened investment in alternative energy sources and infrastructure.*

13. Missing for 42 years, Namdapha flying squirrel resurfaces in Arunachal Pradesh

Syllabus: GS 3- Environment

Prelims: About Namdapha flying squirrel

Introduction
- After an absence of 42 years, the Namdapha flying squirrel (*Biswamoyopterus biswasi*) has been rediscovered in Arunachal Pradesh.

Background
- The Namdapha flying squirrel was last described in 1981 based on a single individual found in the Namdapha Tiger Reserve.
- Subsequent expeditions failed to locate the nocturnal mammal, leading to theories that it might have been mistaken for a similar species or, worse, faced extinction.

Rediscovery Details
- A team successfully sighted the Namdapha flying squirrel in April 2022.
- The mammal was spotted high up on a tree, exhibiting reddish and grizzled fur characteristics.
- A study is being designed to collect DNA samples of the rediscovered squirrel for comparison with the DNA of the individual collected in 1981.

Significance of Rediscovery
- If confirmed, the rediscovery of the Namdapha flying squirrel will serve as a powerful flagship for the conservation of the Namdapha Tiger Reserve and its diverse wildlife.
- The event highlights the importance of continued efforts in biodiversity conservation and the need for sustained exploration to understand and protect endangered species.

14. Bhopal disaster & groundwater contamination

Syllabus: Environmental pollution and degradation

Mains: Groundwater contamination

Context: The aftermath of the Bhopal gas leak disaster of 1984 continues to haunt the residents, especially those residing near the Union Carbide India Ltd. (UCIL) factory premises.

Issues
- **Legacy of Tragedy:** The 1984 methyl isocyanate leakage from the UCIL plant resulted in the death of thousands and left a lasting impact on the health of survivors. Groundwater in residential areas surrounding the factory is found to be contaminated with heavy metals and toxic substances, posing severe health risks.
- **Uncleared Toxic Waste:** Despite court orders, authorities have not cleared hundreds of tonnes of toxic waste dumped by UCIL within its premises from 1969 to 1984. Additionally, 11 lakh tonnes of contaminated soil, including significant amounts of mercury, remain uncleared, contributing to the ongoing contamination threat.
- **Insufficient Government Action:** The government's allocation of funds only for the disposal of a fraction of the waste, despite the magnitude of the problem, reflects a lack of commitment to fully address the environmental hazards posed by the toxic remnants.
- **Inadequate Drinking Water Supply:** The supply of safe drinking water to affected areas remains inadequate, with residents resorting to borewell water for various purposes due to irregular and limited piped water availability.

Solutions

- **Comprehensive Cleanup:** Urgent measures are needed to clear the remaining toxic waste within the UCIL premises and the surrounding areas. This includes the disposal of mercury-laden soil and other hazardous materials, adhering to established environmental guidelines.
- **Enhanced Water Supply:** The government must invest in improving and expanding the water supply infrastructure to ensure a consistent and safe drinking water source for the affected population. Piped water availability needs to be increased, especially during peak demand periods.
- **Medical Support and Rehabilitation:** Given the health challenges faced by the survivors, there should be a comprehensive healthcare program in place. Specialized medical support, regular health check-ups, and rehabilitation services should be provided to address the long-term health effects of exposure to toxic substances.

Nut Graf: The Bhopal gas leak tragedy of 1984 continues to cast a shadow over the lives of survivors, with the threat of contaminated groundwater compounding their challenges. Swift and comprehensive action is imperative to address the environmental and health hazards posed by the uncleared toxic waste.

15. The journey towards a plastic-free world

Syllabus: Conservation, Environmental pollution and degradation and Environmental impact assessment.

Mains: Negotiations and challenges for ending plastic pollution.

Context:
The Intergovernmental Negotiating Committee (INC) faced challenges in developing a global plastics treaty during its third round (INC-3), including disagreements on core obligations, financial mechanisms, and trade restrictions.

Introduction
- The Intergovernmental Negotiating Committee (INC) convened in Nairobi for its third round of negotiations to develop a global plastics treaty by 2025, as mandated by the UN Environment Assembly Resolution 5/14.
- The make-or-break opportunity, known as INC-3, faced challenges despite progress over INC-2. The focus shifted from procedural debates to substantive discussions on the 'zero draft' text.

Zero Draft Negotiations
- The 'zero draft' of the binding plastic pollution treaty started strong but faced dilution of key obligations in primary polymer production, chemicals, and trade during negotiations.
- Disagreements arose over the treaty's objective, with certain countries advocating for the inclusion of economic development goals alongside environmental objectives.

Controversy Over Reducing Polymer Production
- The proposal to reduce primary polymer production, crucial for addressing plastic pollution, stirred controversy as lobbyists from the fossil fuels and chemicals sector exerted influence.
- Some states contended that discussing such reduction exceeded the UNEA Resolution 5/14 mandate.

Debate on Plastic Lifecycle and Provisions
- Countries disagreed on the starting point of the plastic lifecycle, with some saying it begins at raw material sourcing and others at product design.
- Objections from a group of countries led to resistance against provisions targeting compounds and polymers of concern, emphasising a 'null option.'

Financial Mechanisms
- Financial mechanisms, integral to the treaty's implementation, faced divergence. Proposed options, like a plastic pollution fee on polymer producers or reducing financial flows into high-carbon footprint projects, were demanded to be deleted by the same group of like-minded countries.
- The inclusion of these provisions could necessitate cuts in fossil fuel subsidies and investments in environmentally unfavourable technologies.

Trade Restrictions and Misconstrued Opposition
- A bloc of countries opposed restrictions on the trade of polymers, chemicals, and plastic waste, claiming it impinged on national freedom.
- However, WTO rules allow sufficient scope for trade restrictions when necessary for health or environmental protection.

Resistance to Upstream Measures and Rules of Procedure
- The like-minded countries resisted upstream measures and diluted midstream measures, emphasising "national circumstances and capabilities."
- The unsettled rules of procedure, carried over from INC-2, hindered progress in INC-3, with no final determination, passing the matter to INC-4.

Role of African Group and SIDS
- The African group and Small-Island Developing States (SIDS) advocated for strong binding provisions, prioritising human rights and public health perspectives.
- Despite their efforts, the draft text expanded, reflecting diverse member-state interests.

Nut Graf: *INC-3 negotiations for a global plastics treaty encountered hurdles, with compromises on critical aspects. Industry influence, disagreements on financial mechanisms, and trade restrictions marked setbacks in the quest to address plastic pollution comprehensively.*

16. Air Pollution in India

Syllabus: Environmental Pollution and Degradation

Mains: Causes and consequences of Air pollution and remedies for it

Context: Despite considerable government efforts, pollution remains a pressing issue in India. Despite initiatives and policies, the severity of air pollution persists, highlighting the ongoing challenges in effectively addressing this critical environmental concern.

Status of Pollution in India
- **Manifesto Promises vs. Reality:**
  - In their manifestos of 2014 and 2019, the ruling party pledged significant actions against air pollution, promising pollution audits, clean air plans for cities, and reducing pollution levels substantially.
  - Despite these promises, the ground reality paints a bleak picture. India, particularly its major cities, remains severely polluted.
- **Pollution Statistics and Health Impact:**
  - Reports from IQAir and Lancet highlight India's grim air quality status, with numerous cities listed among the most polluted globally.
  - Air pollution is cited as a major contributor to diseases like COPD, asthma, cancer, and strokes, leading to a significant death toll and reduced life expectancy, especially in urban areas.
- **Economic Toll and Negligence:**
  - The economic toll of air pollution on India stands at a staggering ₹7.91 lakh crore annually, as reported by the World Economic Forum.
  - Despite launching the National Clean Air Programme in 2019 for 131 polluted cities, government negligence has hindered its effectiveness, leaving citizens vulnerable to the pollution crisis.

Promises but Lack of Delivery
- **Government Commitments vs. Reality:**
  - The current ruling party commitments towards pollution control have remained largely unfulfilled, despite repeated assurances in their election manifestos.
  - The National Clean Air Programme, meant to alleviate pollution in cities, has failed to produce tangible results due to governmental neglect.
- **Environmental Legislation Amendments:**
  - Amendments made by the government in environmental laws seem to prioritize destruction over protection, exemplified by the impact on forest cover and biodiversity, notably seen in projects like the Great Nicobar Development Plan.
- **Central Vista Project and Disregard for Environment:**
  - The Central Vista project has led to substantial environmental damage, including the loss of trees in Delhi, and the government's actions have disregarded building laws for its execution.

Role of Greed in Pollution
- **Capital-Centric Development:**
  - The government's development policies seem guided by corporate interests and profit motives, often at the expense of environmental conservation and public health.
  - Pollution discussions are often steered toward blaming farmers for stubble burning rather than addressing broader issues like industrial emissions and urban planning.
- **Market-Driven Development vs. People's Welfare:**
  - Karl Marx's observation about bourgeois governments managing capitalist affairs resonates today, emphasizing the government's focus on profit-driven policies over public welfare.

Way Forward
- **Urgent Need for Action:** The government must prioritize public health over crony profits and urgently address the severe crisis caused by air pollution.
- **Exploring Effective Practices:** Emulating successful initiatives like "wind path forests" in other countries and India's concept of "Social Forestry" could provide models for combating air pollution effectively.
- **Call for Governmental Action:** A call for an all-party meeting by the Prime Minister to strategize and initiate proactive measures in the winter session of Parliament is crucial for safeguarding the environment and public health.

Nut Graf: *Despite promising robust measures in their manifestos, India's air pollution crisis persists, starkly contrasting with ruling party commitments. Reports show alarming pollution levels, impacting health and reducing life expectancy. Governmental neglect, environmental legislation amendments favouring destruction, and capital-centric development strategies reveal a dire need for urgent action prioritizing public well-being over profit-driven agendas.*

17. Climate Change Performance Index - 2024

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Prelims: Climate Change Performance Index - 2024

Context: CCPI, published annually since 2005, is an independent monitoring tool for tracking countries' climate protection performance.

Details:
- It is published by Germanwatch, the NewClimate Institute, and Climate Action Network International.
- It indicates the climate mitigation efforts of 63 countries and the EU, which collectively account for over 90% of global greenhouse gas (GHG) emissions.
- **The CCPI evaluates countries across four key categories:**
  - Greenhouse Gas (GHG) Emissions (40%),
  - Renewable Energy (20%),
  - Energy Use (20%),
  - Climate Policy (20%)
- India's secured 7th position in recently released Climate Change Performance Index (CCPI) 2024 up from 8th position in 2023.

Key Pointers
- The first three positions remain empty.
- Denmark claimed the 4th spot,
- Estonia followed in 5th place,
- The Philippines secured the 6th position among the top ranks
- With India (7th), Germany (14th), and the EU (16th), only three G20 countries/regions are among the high performers in CCPI 2024.
- The G20 members account for more than 75% of the world's greenhouse gas emissions.

India's performance indicators
- **GHG emissions and energy use:**
  - 9th in GHG Emissions and 10th in Energy Use - low per capita usage
  - India is on the way to meet obligations to keep warming below 2degrees.
- Climate Policy: India secured 10th place.
- Renewable Energy: India has got a rank of 37. Down from 24.

18. Global Climate 2011-2020 : WMO

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Prelims: Global Climate 2011-2020 : WMO

Context: The World Meteorological Organisation(WMO) has published a report titled-The Global Climate 2011-2020: A decade of acceleration, concerning the alarming acceleration of climate change and its impact.

Key Pointers
- **Temperature trends:**
  - The warmest decade on record for both land and ocean.
  - Global mean temperature soared to 1.10 ± 0.12 °C above the 1850 -1900 average, with each decade since the 1990s surpassing previous ones in warmth.
- **GHG Emissions:**
  - Has continued to increase in the past decade; due to fossil fuel usage and land use changes.
- **Oceanic Changes:**
  - Ocean warming rates accelerated significantly, with 90% of accumulated heat stored in the ocean.
  - Warming rates doubled in the upper 2000m depth from 2006-2020, impacting marine ecosystems.
  - Ocean acidification due to CO_2 absorption posed challenges for marine organisms.
- **Marine Heatwaves:**
  - Have increased in frequency and intensity, affecting 60% of surface.
  - Global sea level rise accelerated to 4.5mm/yr

- **Glacial sheet and ice loss:**
  - Glaciers globally thinned by about 1 meter/year between 2011 and 2020, affecting water supplies.
  - Greenland and Antarctic ice sheets lost 38% more ice compared to 2001-2010, contributing significantly to rising sea levels.
- **Arctic Sea Ice Decline:**
  - Mean seasonal minimum extent 30% below the 1981-2010 average.
- **Ozone Hole successes:**
  - Impact on SDGs - Positives and Negatives

World Meteorological Organisation
- Established by the ratification of the WMO Convention on 23rd March 1950, WMO became the specialized agency of the United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- It originated from the International Meteorological Organization (IMO), which was established after the 1873 Vienna International Meteorological Congress.
- Headquartered at Geneva, Switzerland.

19. Carbon Capture Policy Framework : NITI Aayog

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Prelims: Carbon Capture Policy Framework : NITI Aayog

Context: NITI Aayog has released a study report, titled 'Carbon Capture, Utilisation, and Storage (CCUS) Policy Framework and its Deployment Mechanism in India'.

Key Pointers
- CCUS can provide a wide variety of opportunities to convert the captured CO_2 to different value-added products like green urea, food and beverage form application, building materials, chemicals (methanol and ethanol), polymers (including bio-plastics) and enhanced oil recovery (EOR) with opportunities for circular economy.
- **Employment generation:** It estimates that about 750 mtpa of carbon capture by 2050 can create employment opportunities of about 8-10 million on full time equivalent (FTE) basis in a phased manner.

Suggestions
- Broad level policy interventions needed across various sectors.
- CCUS is important for India achieving its climate goals.
- India's increased reliance on fossil fuel based energy sources increases the importance of CCUS.

Applications
- Mitigating climate change
- Agriculture
- Industrial Use
- Enhanced Oil Recovery

20. State of Finance for Nature Report 2023

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Prelims: State of Finance for Nature Report 2023

Context: The second edition of the State of Finance for Nature report was released jointly by the UN Environment Programme (UNEP) along with the Economics of Land Degradation initiative of the Federal Ministry for Economic Cooperation and Development (BMZ) of Germany, the United Nations Convention to Combat Desertification (UNCCD) and the European Commission.

The Report
- Tracking financial flow to Nature Based Solutions (Nbs)
- Tracking implementation of Nature Based Solutions
- Findings of Report
  - Current Financial Flows to nature based solutions are inadequate. Has increased only by 11% since 2022; 82% of funding is governmental.
  - Nature negative financial flows: Annual finance flows from public and private sources that have direct negative impact on nature are estimated at almost US$7 trillion per year.
  - 43 percent of financing that harmed nature was associated with the destruction of forests, wetlands, and other natural habitats.

21. Global Cooling Watch 2023

Syllabus: GS-3, Conservation, Environmental pollution and degradation

Prelims: Global Cooling Watch 2023

Context: Global Cooling Watch report 2023 has been released by 2023. It highlighted the pathways needed to achieve net zero emissions.

Details:
● The report aims to reduce cooling-related emissions and promote sustainable cooling.
● **Highlighted 3 key measures:**
   ○ Passive Cooling
   ○ Higher-energy efficiency standards
   ○ Faster phase-down of climate-warming refrigerants

Requirement of Cooling
● Medicines and Vaccines
● Cold Storages
● Habitability
● Following current trends, the capacity of cooling equipment is expected to triple by 2050 and with the current slow pace of energy efficiency improvements, this would result in a more than doubling of electricity consumption.
● GHG emissions from power consumption will increase alongside leakage of refrigerant gases from cooling equipment, most of which have a much higher global warming potential than CO2.
● Passive cooling measures – such as insulation, natural shading and ventilation, reflective surfaces – can dramatically reduce cooling loads.
● Passive cooling strategies can curb the growth in demand for cooling capacity in 2050 by 24 per cent, result in capital cost savings in avoided new cooling equipment of up to US$3 trillion, and reduce emissions by 1.3 billion tons of CO2e.
● Higher efficiency standards and better labelling of all cooling equipment would triple the global average efficiency of cooling equipment in 2050 from today's levels, delivering 30 percent of modelled energy savings, lowering energy bills and improving the resilience and financial viability of cold chain.
● Most HFCs used in cooling equipment are greenhouse gases that are thousands of times more potent than CO2.

22. A dive into sanitation solutions: processing, managing and treating used water

Syllabus: Conservation, Environmental pollution and degradation

Mains: Sanitation solutions – processing, managing and treating used water

Context: Sanitation systems play a crucial role in protecting public health and the environment by managing used water. From on-site solutions like twin pits and septic tanks to centralised sewer networks, these systems are diverse and aim to treat and dispose of or reuse used water efficiently.

Types of Sanitation Systems
● Used water disposal methods vary based on location. In rural areas and spacious urban residences, on-site sanitation systems (OSS) such as twin pits, septic tanks, bio-digester toilets, bio-tanks, and urine diversion dry toilets are common. In densely populated urban areas, underground sewer networks transport used water to treatment facilities.

On-site Sanitation Systems (OSS)
● **Twin Pits**
   ○ Two pits alternately used, porous walls for liquid absorption.
   ○ Faecal sludge collected in pits, left unused for two years for safe reuse.
   ○ Suitable for various locations, except rocky soils with slow water percolation.
● **Septic Tanks**
   ○ Watertight tanks, solids settle at the bottom, scum floats at the top.
   ○ Clear liquid disposed of in the surrounding soil or a trench.
   ○ Regular removal of accumulated faecal sludge and scum is required.
● **Centralized Sewer Networks**
   ○ Underground pipes collect and convey used water to treatment facilities.
   ○ Sewers transport sewage to sewage treatment plants (STPs).
   ○ Machine holes are used for maintenance and blockage removal.
● **Treatment Facilities**
   ○ Faecal Sludge Treatment Plants (FSTPs)
   ○ Mechanical or gravity-based systems.
   ○ Mechanised systems use equipment like screw presses; gravity-based systems use sand drying beds.

- ○ Treated solids can be reused in agriculture; treated water reused in landscaping.
- **Sewage Treatment Plants (STPs)**
  - ○ Use physical, biological, and chemical processes to remove pollutants.
  - ○ Primary separation of solids, purification, and disinfection stages.
  - ○ Advanced systems may include membrane filtration for additional treatment.

Significance of Sanitation Systems
- Used water accumulates impurities from domestic and non-domestic uses.
- Impurities include organic matter, nutrients, pathogens, and heavy metals.
- Sanitation systems prevent pollution and public health issues associated with reintroducing impure water into natural environments.

Challenges
- Poorly designed and built systems.
- Unsafe operation and maintenance practices.

Way forward
- Improve design and construction standards.
- Promote safe operation and maintenance practices.
- Ensure universal access to safely managed sanitation services.

Nut Graf: *While sanitation systems have significantly improved public health, achieving universal access to safe sanitation remains a challenge.*

23. Global Goal on Adaptation and the Road from Dubai

Syllabus: GS-3, Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

Mains: 28th meeting of the Conference of the Parties (COP) of UNFCC and Global Goal on Adaptation (GGA).

Context: The 28th meeting of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) adopted the framework for the Global Goal on Adaptation (GGA).

Global Goal on Adaptation (GGA)
- The Global Goal on Adaptation represents a collective commitment outlined in Article 7.1 of the Paris Agreement.
- First proposed by the African Group of Negotiators (AGN) in 2013, it aims to enhance the world's adaptive capacity, strengthen resilience, and reduce vulnerability to climate change.
- It involves establishing specific, measurable targets and guidelines for global adaptation actions, along with enhancing adaptation finance and support for developing countries.

Challenges in Achieving Global Goals on Adaptation
- **Expected results by 2027:**
  - ○ All parties to the Global Goals on Adaptation are required to establish multi-hazard early warning systems, climate information services for risk reduction, and systematic observation to enhance climate-related data, information, and services by 2027. **However, how these measures will contribute to the advancement of adaptation efforts is not clear.**
- **Challenges in achieving global goals:**
  - ○ In general, there is a notable challenge in translating globally agreed-upon goals to the national level.
  - ○ Key influencing factors include national conditions, administrative capacity, economic development, and the provision of adequate support for each country.
- **Lack of universal metric for climate adaptation:**
  - ○ Unlike greenhouse gas mitigation, measuring progress in climate adaptation under national pledges lacks a clear metric, and the GGA framework remains silent on who will develop the necessary indicators to assess the achievement of its targets.
- **Widening adaptation finance gap:**
  - ○ The gap between the estimated costs and available finance for meeting adaptation targets is widening, leaving developing countries struggling to manage the impacts of climate change.
  - ○ COP26's call to double adaptation finance by 2025 highlights this growing financial disparity.
- **Climate financing bias towards mitigation:**
  - ○ There is a strong bias in climate financing favouring mitigation over adaptation, as benefits from adaptation strategies are local, while mitigation projects generate global benefits.

Way Forward:

- **Equity and Justice:**
  - The core consideration in operationalizing GGA should be to prevent the exacerbation of existing inequalities.
  - Finance mechanisms should be designed to avoid increasing debt levels for developing countries that are already burdened by debt.
- **Locally led adaptation:**
  - Tailor adaptation strategies to individual nations based on their unique contexts, and ensure that GGA strategies include local populations, especially those most susceptible to the effects of climate change.
- **Integration with other global sustainability goals:**
  - Complement and integrate adaptation efforts into national and international development initiatives, such as the Sustainable Development Goals (SDGs), the Kunming-Montreal Global Biodiversity Framework, and the United Nations Convention to Combat Desertification.
- **Bottom-up metrics and solutions:**
  - The one-size-fits-all approach for adaptation should be rejected and countries should be supported in building national adaptation programs that draw on and learn from the diverse experiences of local initiatives.

Nut Graf: *Implementing GGA requires a greater sense of urgency in treating adaptation on par with mitigation, particularly in the face of extreme climate events.*

HISTORY, ART AND CULTURE

1.   Theyyam

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Theyyam

Context: North Kerala, with its rich cultural tapestry, boasts a legacy of heroes celebrated through Vadakkan Pattukal (Ballads of the North). Among these revered figures is Rayarappan Nambiar, not a conventional warrior, but a legendary tiger hunter.

- His story transcends the boundaries of time, echoed not only through ballads but also manifested in a temple and the vibrant ritual performance of 'Theyyam.'

Tiger Hunting Legacy

- Rayarappan Nambiar, a skilled tiger hunter, left an indelible mark on the history of Thalassery, Kannur. In an era when tiger hunting was a lucrative profession, Nambiar emerged as a young but accomplished hunter, credited with saving the region from numerous wildlife attacks.

Historical Episode

- Legend has it that the British ruler of 19th Century Thalassery sought Nambiar's expertise to address the persistent wildlife threat. Nambiar, hailing from Kattodi, Kozhikode, demanded 41 gunmen for assistance.
- However, during a critical encounter, they abandoned him, leaving Nambiar alone to face the tiger. Despite sustaining injuries, he triumphed, presenting the ruler with the tiger's tail and tongue. In recognition, Nambiar's family received land and government jobs. Tragically, Nambiar passed away en route to his home in Nadapuram.

Hero Worship: 'Nambiar Theyyam'

- The 'Nambiar Theyyam,' performed annually at Kattodi Meethal Temple, post-Sivaratri, emerged posthumously. According to folklore, Nambiar appeared in his brother's dream, urging the performance of his 'Thira' (Theyyam). The Theyyam narrates the battle between Nambiar (Asuraputhran) and the tiger (Pulichamundi or Vishnumoorthi).

Sanskritisation of Folklore

- Over time, the Nambiar and 'Pulichamundi Theyyams' underwent sanskritisation, blending historical figures with mythical characters. This transformation primarily impacted costumes and names, with 'Asuraputhran' and 'Vishnumoorthi' being notable examples. However, the core narrative remains unaltered.

Kattodi Meethal Temple

- Founded by Nambiar's successors, Kattodi Meethal Temple stands as a testament to his legacy. The temple is integral to the annual Theyyam performance, and the Nambiar family continues to oversee its operations.

Ritual Accompaniments

- During the Theyyam ritual, elder members of the Nambiar family actively participate, wielding spear, sword, and a golden dagger. Their involvement adds a tangible connection to the historical and cultural significance of the performance.

2.   Awards for words

Syllabus: GS-1, Art Forms, Literature and Architecture awards

Prelims: Sahitya Akademi

Context: The Sahitya Akademi, established in 1954, plays a crucial role in recognizing and honouring literary works in 24 Indian languages.

Issues

- **Limited Recognition:** Sahitya Akademi awards lack the global recognition enjoyed by prizes like the Booker Prize or the Pulitzer, affecting the institution's visibility and prestige.
- **Promotional Deficiency:** Despite its diverse activities, including lectures, readings, and workshops, the Sahitya Akademi struggles with inadequate promotion. The website is outdated, and its social media presence is insufficient, hindering the dissemination of its literary initiatives.
- **Accessibility of Publications:** Although the Sahitya Akademi has published numerous books, their accessibility remains a challenge. Affordable publications are not widely available, limiting the dissemination of Indian literature.

Significance
- **Linguistic Diversity:** The awards celebrate India's rich linguistic tapestry, acknowledging the country's many languages and cultures.
- **Encouragement for Writers:** Sahitya Akademi awards serve as encouragement for writers, providing recognition that can boost sales, lead to inclusion in educational curricula, and facilitate translations into other languages.
- **Cultural Preservation:** In a nation with diverse dialects and marginalized languages, the Akademi contributes to the preservation of cultural heritage by recognizing literary works in various languages.

Way Forward
- **Enhanced Promotion:** The Sahitya Akademi should invest in a robust promotional strategy, updating its website, improving its social media presence, and engaging with a wider audience to increase awareness of its programs and initiatives.
- **Accessible Publications:** Efforts should be made to improve the availability of Sahitya Akademi publications. This could involve partnerships with bookstores, online platforms, and educational institutions to ensure wider dissemination.
- **Educational Outreach:** Collaborations with schools and universities can be strengthened to incorporate Sahitya Akademi's award-winning works into curricula, promoting a reading culture among students.

Nut Graf: While the Sahitya Akademi awards play a vital role in recognizing literary excellence in diverse languages, there is a need for strategic measures to enhance their visibility and impact.

3. 'Garba of Gujarat' Recognized as Intangible Cultural Heritage

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: 'Garba of Gujarat'

Context: 'Garba of Gujarat' has been inscribed in the Representative List of Intangible Cultural Heritage (ICH) of Humanity by UNESCO, under the provisions of the 2003 Convention for the Safeguarding of Intangible Cultural Heritage during the 18th meeting of the Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage from 5th -9th December, 2023 in Kasane, Botswana.
- With this, 15 elements from various parts of India have been inscripted to UNESCO's representative list of ICH.

About Garba
- The chief of the committee's evaluation body referred to garba as "ritualistic and devotional dance that is performed on the occasion of the Hindu festival of Navaratri, which is dedicated to the worship of the feminine energy".
- The practitioners and bearers (of garba) are broad and inclusive, from the dancers to the musicians, social groups, craftspeople and religious figures involved in the festivities and preparations.
- Transmitted through practice and observation, Garba fosters equality by transcending socio-economic, gender and religious structures. It is inclusive of diverse and marginalized communities, thus strengthening social bonds.
- Many schools and universities offer professional courses and workshops in dance, music, costume and ornament design, landscape planning, sound and light design, all of which contribute to Garba creations.
- The practice is also transmitted by NGOs, government agencies, choreographers, musicians and the media. Garba fosters social equality by diluting socio-economic, gender and religious structures. It continues to be inclusive of diverse and marginalized communities, thus strengthening social bonds.

4. Kozhikode and Gwalior Earn UNESCO Recognition for Cultural Contributions

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Kozhikode and Gwalior Earn UNESCO Recognition for Cultural Contributions

Context: Kozhikode in Kerala and Gwalior in Madhya Pradesh have made it to the prestigious creative cities list of UNESCO for contributions in the fields of literature and music respectively.

UNESCO Creative Cities Network (UCCN)
- It was created in 2004.
- It aims to "promote cooperation among cities which recognize creativity as a strategic factor in their urban development".
- Sustainable Development Goal 11 aims for Sustainable Cities and Communities.
- The network covers seven creative fields: crafts and folk arts, media arts, film, design, gastronomy, literature and music.

Kozhikode as City of Literature:
- Kozhikode is the first city in India to receive the prestigious title of 'City of Literature' by UNESCO.
- The city has a long history of hosting various literary events, such as the Kerala Literature Festival, which is one of the largest literary gatherings in Asia.

- This acknowledgement reinforces the city's role as a hub for intellectual exchange and literary discussions.
- Kozhikode carried the distinction of being home to over 500 libraries.

Gwalior as the City of Music:
- Gwalior is the second city in India to be designated as the 'City of Music' by UNESCO, after Varanasi in 2015.
- The city is widely regarded as the birthplace of Tansen, one of the greatest musicians and composers in Indian history, who was also one of the 'Navratnas' (nine jewels) in the court of Emperor Akbar.
- The city is also the origin of the Gwalior Gharana, the oldest and most influential school of Hindustani classical music.
- Other Indian cities in the UCCN include
  - **Jaipur:** Crafts and Folk Arts (2015),
  - **Varanasi:** Creative City of Music (2015),
  - **Chennai:** Creative City of Music (2017),
  - **Mumbai:** Film (2019)
  - **Hyderabad:** Gastronomy (2019)
  - **Srinagar:** Crafts and Folk Art (2021).

5. Ministry of Tourism Unveils National Competitions to Boost Rural Tourism

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: National Competitions to Boost Rural Tourism

Context: Ministry of Tourism has launched National Best Tourism Village Competition 2024 and the National Best Rural Homestay Competition 2024 to strengthen the promotion and development of Rural Tourism in the country. The earlier version of the National Best Tourism Village Competition 2023 recognized 35 villages all over India in Gold, Silver, and Bronze categories.

Details:
- For the enhancement of Rural Tourism in India the Ministry of Tourism, Government of India launched the comprehensive National Strategy and Roadmap for the Development of Rural Tourism in India, along with the National Strategy for the Promotion of Rural Homestays.
- The Ministry has initiated the implementation of the National strategies in collaboration with the Indian Institute of Tourism and Travel Management.
- To foster collaboration and create a conducive environment for the growth of Rural Tourism, the Ministry has actively engaged Governments, industry stakeholders, Non-Governmental Organizations (NGOs), and local communities through these competitions. This multi-stakeholder approach synergizes the efforts to strengthen the rural economies.

Aims
- The competitions aim to develop healthy competitiveness among the villages and the rural homestays to identify and reward outstanding contributions to Rural Tourism, thereby incentivizing communities and individuals for active contribution to the sustainable development goals.
- The competitions will not only boost tourism in lesser-explored regions but also create a ripple effect to increase community involvement, preserve cultural authenticity, and promote sustainable and Responsible practices in the tourism sector.
- The Ministry of Tourism has established the Central Nodal Agency Rural Tourism and Rural Homestay (CNA RT & RH) for the effective implementation of the initiatives for Rural Tourism. CNA RT & RH is conducting the capacity building session for the states to create the Master Trainers for the propagation of the competitions to the village level.

6. 'Ladakh Sea Buckthorn', Arunachal Yak Churpi, Lakadong Turmeric, Khaw Tai - Khamti Rice Variety and Tangsa Textile Receives GI Tag

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: 'Ladakh Sea Buckthorn', Arunachal Yak Churpi, Lakadong Turmeric, Khaw Tai - Khamti Rice Variety and Tangsa Textile

Ladakh Sea Buckthorn
- In Ladakh, after GI Tag for Apricot (Raktsey Karpo), Pashmina, and Ladakhi Wood Carving, the Geographical Indication Registry, operating under the Ministry of Commerce & Industry, Government of India, has officially granted the GI tag to the Department of Industries & Commerce, Ladakh and approved it as the Registered Proprietor for 'Ladakh Sea Buckthorn'
- Farmers of Kargil are very excited for this special recognition for Sea Buckthorn, one of the most profitable crop of UT Ladakh having 90 % production from Ladakh in India.

Arunachal Yak Churpi
- A first ever yak milk product, Arunachal Yak Churpi, has got the Geographical Indication tag.
- Churpi is prepared from the milk of Arunachali yak, a unique breed found in West Kameng and Tawang districts of the state. It is reared by tribal yak pastoralists known as Brokpas who migrate along with their yaks to higher reaches (at an altitude of 10,000 ft and higher) during summers and descend to mid-altitude mountainous regions in winters. Yaks cannot survive in lower altitude during summer and thus, they need to be taken beyond 13,000 ft.

Lakadong Turmeric
- It is considered to be one of the world's best varieties of turmeric, with a curcumin content of around 6.8 to 7.5 per cent.
- It is darker in colour and is grown organically without the use of fertilisers.
- It is found in Lakadong area of Jaintia Hills, has high curcumin content.
- Other GI products from Meghalaya: Garo Dakmanda (traditional dress), Larnai pottery and Garo Chubitchi (alcoholic beverage) were also awarded the GI tag

Khaw Tai-Khamti Rice Variety: Arunachal Pradesh
- Khaw Tai, a chewy sticky rice variety, hails from the Namsai region and is cultivated by traditional Khampti tribal farmers.

Tangsa Textile
- The Tangsa Textile products crafted by the Tangsa tribe of Changlang district are renowned for their exotic designs and vibrant colors.
- This traditional craftsmanship reflects the cultural richness of the region.

7. Boita Bandana: Commemorating Odisha's Maritime Heritage

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Boita Bandana- Odisha's Maritime Heritage

Context: People in Odisha celebrated Boita Bandana, a boat festival marking the maritime glory of the region. This annual observance takes place on Kartik Purnima, the full moon day in the holy month of Kartik, usually falling in October or November. Boita Bandana is a cultural tribute to Odisha's ancient maritime activities and trade relations with Southeast Asian countries.

Historical Significance
- Boita Bandana has deep historical significance, reflecting Odisha's role as a major maritime power in ancient times.
- The festival recalls the maritime adventures of merchants who sailed on Boitas to trade with countries like Java, Sumatra, Bali, and Indonesia.
- The act of setting sail on miniature boats with offerings is a gesture of remembrance and gratitude to the sea god Varuna.

Symbolic Act of Floating Boats
- On Kartik Purnima, miniature boats made of banana stems, paper, and colored cloth are set afloat in rivers, ponds, and the sea.
- This symbolic act pays homage to Odisha's rich maritime history and the courageous sailors who engaged in trade with Southeast Asian nations.
- The festival serves as a cultural bridge connecting the present generation with the seafaring legacy of their ancestors.

8. Channapatna Toys: Afganishtan

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Channapatna Toys: Afganishtan

Context: Channapatna toys have now become part of children's academic activities in Afghanistan.

Details:
- Channapatna Toys are a particular form of wooden toys and dolls that are manufactured in the town of Channapatna in the Ramanagara district of Karnataka.
- Channapatna is also known as Gombegala Ooru (toy-town).
- The history of Channapatna toys can be traced back to Tipu Sultan's reign as the former ruler of the Kingdom of Mysore in the 18th century.
- Tipu Sultan was so impressed with the craftsmanship of Persian artisans that he invited them to train local craftsmen in toy-making.
- They are mostly made of Ivory Wood sourced from nearby forests. However, nowadays, sandalwood and mango wood are also used.

- They are also painted in organic colours extracted from vegetables and plants and natural dyes, making the Channapatna Toys 100% chemical-free.
- Their shapes are mostly round and cubes with blunt edges, so they are completely safe for kids.
- They received the geographical indication (GI) tag in 2005.

9. Mera Gaon, Meri Dharohar (MGMD) Programme

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Mera Gaon, Meri Dharohar (MGMD) Programme

Context: The Ministry for Culture has decided to map and document all villages under the Mera Gaon, Meri Dharohar (MGMD) Programme.

Details:
- This National Mission on Cultural Mapping is conducted in coordination with Indira Gandhi National Centre for the Arts (IGNCA) under the Ministry of Culture.
- A web portal on MGMD has also been launched. The MGMD seeks to compile comprehensive information detailing the life, history, and ethos of Indian villages and to make the same available to virtual and real-time visitors.
- Under the MGMD, information is collected under seven broad categories such as Arts and Crafts Village, Ecologically Oriented Village etc.

10. 'Kashi Tamil Sangamam is strengthening idea of Ek Bharat Shreshtha Bharat'

Syllabus: GS-1, Art Forms, Literature and Architecture

Prelims: Kashi Tamil Sangamam

Context: Prime Minister Narendra Modi emphasized the profound emotional and creative bond between Kashi (Varanasi) and Tamil Nadu, stating that the Kashi Tamil Sangamam is reinforcing the concept of 'Ek Bharat Shreshtha Bharat' (One India, Best India).
- The event, organized by the Ministry of Education, celebrates the enduring connections between Tamil Nadu and Varanasi, highlighting the cultural foundation of India.

Unique Emotional Bond
- **Time Immemorial Connection:** Kashi and Tamil Nadu share a unique emotional and creative bond with historical roots.
- **Cultural Significance:** The emotional connection is integral to the cultural fabric of both regions.

Significance of Saints' Visits
- **Centuries-Old Tradition:** Saints from southern India, including Adi Shankaracharya and Ramanujacharya, have visited Kashi for centuries.
- **National Consciousness:** Their journeys contributed to awakening national consciousness, contributing to India's enduring unity.

Cultural Dialogue Platform
- **Kashi Tamil Sangamam:** An effective platform for mutual dialogue between the people of the north and south.
- **Academic Collaboration:** Collaboration between Banaras Hindu University (BHU) and the Indian Institute of Technology (IIT) Madras contributes to the success of the Sangamam.

Symbolic Installation
- **Sengol in the Parliament:** Installation of the Sengol in the new Parliament building symbolizes the spirit of 'Ek Bharat Shreshtha Bharat.'
- **Diversity Acknowledgment:** Despite cultural diversity, India remains unified, as reflected in the installation.

SOCIAL JUSTICE AND SOCIAL ISSUES

1. On re-criminalising adultery

Syllabus: Indian society and diversity – Salient aspects.

Mains: Issues related to marital norms and gender equality.

Context:
The Parliamentary Standing Committee recommends reinstating adultery as a criminal offence in India, but with gender-neutral culpability. This follows the Supreme Court's 2018 decision to decriminalise adultery.

Introduction
- The Parliamentary Standing Committee on Home Affairs has recommended reinstating adultery as a criminal offence, but in a gender-neutral manner.
- Adultery was decriminalised unanimously by a Supreme Court Constitution Bench in 2018, citing discrimination and privacy concerns.

Legislative Recommendations
- The Committee suggests criminalising adultery in a gender-neutral way, making both men and women equally culpable.
- The rationale is to safeguard the sanctity of marriage, emphasising its sacred status in Indian society.
- Opposition MPs argue against raising marriage to a sacrament and oppose state interference in private lives.

Legislative History of Adultery Law
- Lord Macaulay, involved in IPC drafting, was initially against making adultery a penal offence, favouring pecuniary compensation.
- The Law Commission in its 42nd Report (1971) considered criminalising adultery but didn't recommend repeal, emphasising societal abhorrence towards marital infidelity.
- The Malimath Committee in 2003 proposed retaining adultery as an offence but on gender-neutral terms.

Repeal of Adultery Law
- The Supreme Court, in Joseph Shine vs. Union of India (2018), unanimously struck down Section 497, decriminalising adultery.
- The Court emphasised privacy, stating that adultery remains a valid ground for divorce but should not be a criminal offence.

Arguments Against Criminalization
- Critics argue that criminalising adultery infringes on the privacy of consenting adults and interferes in personal lives.
- The dissenting note by MPs emphasises avoiding state interference in private lives.

Possibility of Legislative Reversal
- While a Supreme Court ruling establishes a precedent, the Parliament can overrule judicial decisions through legislation.
- Legislative action to reinstate adultery as a criminal offence would be valid if it alters the legal basis of the previous judgement.
- The court cautioned that legislation merely seeking validation without curing defects in the earlier law would be ultra vires.

NutGraf: Amidst debates on privacy and marriage sanctity, India's Parliamentary Committee suggests reviving criminalization of adultery with a gender-neutral approach, challenging the 2018 Supreme Court ruling.

2. India, disability inclusion and the power of 'by'

Syllabus: Social Empowerment, Social sector

Mains: Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

Introduction:
- Disability inclusion stands at the crossroads of social, economic, and gender vulnerabilities, impacting 1.3 billion people globally.
- In developing countries, particularly rural areas, 80% of this population faces exclusionary systems, leading to heightened instances of poverty and limited access to opportunities. Recognizing the urgency, recent efforts and initiatives shed light on the imperative of prioritizing disability inclusion in the global development agenda.

The figures of disabilities:
- The global scale of disabilities is huge. Recent statistics indicate that approximately 1.3 billion people worldwide, equivalent to the entire population of India, are living with some form of disability.
- Out of this population, a staggering 80% resides in developing countries, with 70% located in rural areas.

Present Exclusion and Its Impact:
- Current systems predominantly cater to persons without disabilities, leading to exclusionary practices.
- Challenges include heightened instances of poverty, limited access to education, employment opportunities, and various forms of social and economic discrimination.
- Despite the right to equal treatment, persons with disabilities often face limited employment opportunities, reinforcing stereotypes and contravening the United Nations Convention on the Rights of Persons with Disabilities.

Effective Inclusion with "For" vs. "By" Approach:
- Emphasizing the significance of distinguishing between actions "for" persons with disabilities and those done "by" them.
- Inclusion is more effective when persons with disabilities actively participate in the decision-making process.

Economic Benefits of Inclusion:
Studies, such as the one by the International Labour Organization (ILO), suggest that integrating persons with disabilities into the economy could boost global GDP by 3% to 7%.

Challenges in Rural Areas : Rural areas, where 70% of persons with disabilities reside, present unique challenges such as limited access to education, employment, and development schemes.
Climate-related risks further compound the difficulties faced by this population.

Initiative and efforts:
- The Rights of Persons with Disabilities Act (2016) in India introduces various schemes and a unique ID for persons with disabilities (UDID) card.
- A need for awareness campaigns and capacity-building, especially in rural areas, to ensure effective last-mile connectivity of government benefits.
- Acknowledging the private sector's pivotal role in promoting the employment of persons with disabilities.Successful examples underscore the importance of engaging companies and building confidence in hiring and retaining workers with disabilities.
- SPARK project by ILO and IFAD, implemented in collaboration with the Women's Development Corporation in Maharashtra has empowered persons with disabilities as leaders and facilitators, fostering awareness and inclusion at various levels.

There is a crucial need for a fundamental shift in commitment, solidarity, financing, and action to prioritize the voices and needs of persons with disabilities at the core of the global development agenda.

Nut graf: *Addressing the plight of 1.3 billion people globally living with disabilities, there is a need for an inclusive 'by' approach over 'for' in decision-making for persons with disabilities. Government initiatives in India, private sector engagement, and the SPARK project showcase efforts toward meaningful inclusion. There is a need for a fundamental shift in global commitment to prioritize the voices and needs of persons with disabilities in the development agenda.*

3. The Ambedkar touch in rethinking social justice policies

Syllabus: GS-2, Social sector; Welfare Schemes for Vulnerable Sections of the Population by the Centre and States and the Performance of these Schemes; Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources.

Mains: Importance of Ambedkar's ideas in rethinking social justice policies.

Introduction:
Contemporary democracy underscores the importance of social harmony and reforms for historically marginalized communities. Democratic institutions strive to ensure dignity and self-respect, particularly for Dalits and Adivasis in India. The death anniversary of Babasaheb Ambedkar reminds his vision for the social welfare of Dalits. He envisioned a post-colonial India where these communities would play equal roles in the nation's development.

Challenges for Social Justice in the Neoliberal Era:
- The advent of neoliberal economic development has disrupted traditional support for Dalits and Adivasis from state institutions.
- Positions of power are predominantly held by social elites, leaving marginalized groups with tokenistic representation.
- Despite promises, social justice policies have yielded limited impact on the substantial participation of the most disadvantaged social groups.

Dr Ambedkar's Approach on Dalit Welfare: Ambedkar's principles provide a critical perspective on neoliberal disregard for Dalit and Adivasi concerns. His approach proposes ethical corrective measures, fostering greater democracy and responsiveness in institutions. While not as radical as Marxism, Dr Ambedkar's mechanism instils moral sensibilities in institutions, holding them accountable.

Need for Reforms:
- The detachment of the neoliberal market from social responsibilities exacerbates crony capitalism.
- Reforms are imperative to re-envision the market economy, aligning it with ethical values and addressing social inequalities.

Suggestions for reforms:
- Social justice policies must extend to the private economy, democratizing the working classes and alleviating poverty. Integrating these policies into the market economy can uplift Dalits and Adivasis to influential roles.
- Adivasi concerns regarding habitat protection, ecological order, and cultural autonomy need addressing within the framework of the market economy.
- Reparation policies should rectify historical wrongs and foster equitable participation in economic development.
- The new social justice framework should facilitate the emergence of a prominent class among Dalits and Adivasis.
- Affirmative action policies are crucial to democratize the business sector, enabling these groups to become leaders, entrepreneurs, and influencers.

Transitioning from Traditional Methods:
- Policymakers must view Dalits and Adivasis as active contributors rather than passive recipients of state welfare.
- These groups should be acknowledged as integral components of urbanization, industrial production, and technological innovation.
- Dr Ambedkar envisioned the modern state as a transformative force for Dalit and Adivasi emancipation.
- In the neoliberal era, the state has become a passive associate of big business, deviating from its social responsibilities.

Conclusion: Dr Ambedkar's vision provides a roadmap to reinvigorate social justice in contemporary democracy. Reimagining the economic order entails integrating social justice into the market, empowering Dalits and Adivasis as active contributors to the nation's development.

Nut graf: Dr Ambedkar's vision for social justice in contemporary democracy emphasizes the importance of dignity and self-respect for historically marginalized communities. Despite challenges posed by neoliberal economic development and tokenistic representation, Dr Ambedkar's approach offers ethical corrective measures, holding institutions accountable. Reforms, including extending social justice policies to the private sector and addressing Adivasi concerns, are crucial for uplifting Dalits and Adivasis.

4.   PM-JANMAN Scheme for PVTG's

Syllabus: Issues relating to the development and management of Social Sector/Services, Issues relating to poverty and hunger

Prelims: PM-JANMAN

Mains: Government initiatives for PVTG's

Context: A recent announcement of the Pradhan Mantri-Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) aims to address the developmental needs of PVTGs with a substantial financial allocation.

Issues:
- **Population Contradictions:**
  - Discrepancies in population data between the Tribal Affairs Ministry and the Census data raise concerns.
  - The State-wise Census data indicated a 40% decline in PVTG numbers in nine States and Union Territories.
- **PVTG Distribution:**
  - PVTGs are present in 18 States and Union Territories, with Odisha having the highest number.
  - The last comprehensive Census in 2001 reported around 27.6 lakh PVTG individuals.
- **Limited Information:**
  - PVTGs face challenges due to their small population, lack of progress, and remote living conditions.
  - Inadequate infrastructure and administrative support contribute to their vulnerability.

Significance:
- **PM-JANMAN Scheme:**
  - A ₹24,000 crore initiative to uplift PVTGs by providing basic facilities like roads, power, housing, and connectivity.
  - Aims to address the specific needs of 22,000 PVTG villages across India.

- **Development Mission Goals:**
  - Allocation includes building pucca homes, constructing roads, providing water, medical units, anganwadi centers, hostels, and more.
  - Emphasis on vocational and skill training, forest produce trading, solar power, and street lights.
- **Presidential Involvement:**
  - President Droupadi Murmu's special interest in overseeing plans demonstrates high-level commitment.

Nut Graf: The PM-JANMAN scheme represents a significant step towards addressing the challenges faced by Particularly Vulnerable Tribal Groups. While the financial allocation is substantial, challenges such as the lack of current data on PVTG populations must be addressed for effective implementation.

5.   74% Indians could not afford healthy diet in 2021: report

Syllabus: GS 2- Social Issues

Prelims: About Regional Overview of Food Security and Nutrition 2023

Introduction
- The Food and Agriculture Organization (FAO) of the United Nations released a report indicating that over 74% of Indians could not afford a healthy diet in 2021, a slight improvement from 2020 when the percentage was 76.2.
- The report, titled "Regional Overview of Food Security and Nutrition 2023: Statistics and Trends," highlights the impact of rising food costs on the population's ability to access a nutritious diet.

Regional Context
- In comparison, in Pakistan, 82.2% of the population faced difficulties in affording healthy food, while in Bangladesh, the figure was 66.1%.
- The report noted that if the increase in food costs is not accompanied by rising incomes, more people will struggle to afford a healthy diet.

Global Targets and Sustainable Development Goals
- The FAO report serves as an assessment of progress in meeting Sustainable Development Goals and World Health Assembly global nutrition targets.
- The report indicates that the Asia-Pacific region, even after confronting the "5Fs" crisis (food, feed, fuel, fertiliser, and finance) amid the pandemic, still contends with issues of undernourishment and food insecurity.

Key Statistics and Challenges in India
- The report notes that 16.6% of India's population is undernourished, leading to broader economic and social costs.
- Child malnutrition remains a significant concern, with 31.7% of children in India under the age of five experiencing stunted growth.

Child Nutrition Indicators
- India records the highest rate of wasting (low weight for height) in the region, with 18.7% of children under five facing this health issue.
- Other concerns include 2.8% of children below five being overweight, 53% of women aged 15 to 49 experiencing anaemia, and 1.6% of adults in the country being obese.

Breastfeeding and Low Birth Weight
- India demonstrates improvement in exclusive breastfeeding, with a prevalence of 63.7%, higher than the global prevalence.
- However, India also has the highest prevalence of low birth weight in the region (27.4%).

6.   An uphill struggle to grow the Forest Rights Act

Syllabus: Welfare Schemes for Vulnerable Sections of the population by the Centre and States and the Performance of these Schemes

Mains: Issues in the implementation of FRA and the way forward

Context: Even after the passage of 17 years, tribal rights remain unfulfilled, indicating ongoing challenges in implementing the Forest Rights Act.

Historic Injustices with Tribes in Colonial Times:
- **Traditional Rights Disruption:**
  - Local communities enjoyed customary rights over forests pre-colonialism.
  - Colonial takeover disrupted these traditions, imposing false notions of 'eminent domain.'

- **Impact of Indian Forest Act 1878:**
  - Shifting cultivation was banned, and forests were considered primarily as timber resources.
  - Forest villages were created, leasing land for compulsory labour, further marginalizing communities.
  - Access to forest produce was limited and controlled by the state, leading to injustices.
- **Post-Independence Worsening:**
  - Forest areas declared state property without proper inquiry, labelling legitimate residents as 'encroachers.'
  - Forest lands were leased without regularization, contributing to ongoing exploitation.

Challenges Faced During Post-Independence:
- **Displacement and Lack of Alternatives:**
  - Princely States' forest areas were declared state property, displacing communities without alternatives.
  - Communities displaced by dams were left without proper compensation, leading to further 'encroachments.'
- **Impact of Wildlife Protection Act 1972 and Forest Conservation Act 1980:**
  - Forceful resettlement during the creation of sanctuaries and national parks.
  - Development projects led to forest diversion without considering local communities, exacerbating injustices.

Objectives of FRA (Forest Rights Act):
- **Acknowledging Historical Injustices:**
  - FRA recognizes colonial injustices and injustices continuing post-independence.
- **Redress Mechanisms:**
  - Individual Forest Rights (IFRs) are recognized to address 'encroachments.'
  - Forest villages to be converted into revenue villages post full rights recognition.
  - Recognition of community rights to access, use, own, sell minor forest produce and manage forests.
- **Democratic Procedure for Conservation:**
  - Democratic procedure for identifying wildlife conservation needs, and respecting community rights.
  - Community rights provide a say in forest diversions and the right to compensation if diverted.

Distortions in Implementation:
- **Politician Focus and Illegal Cultivation:**
  - Politicians in most states focused on individual rights, often projecting the Act as an 'encroachment regularization' scheme.
  - Encouragement of illegal new cultivation in certain areas.
- **Issues with IFR Recognition:**
  - Shabby recognition of Individual Forest Rights, compromised by departmental resistance and technological challenges.
  - 'Forest villages' recognition issues persist in most states.
- **Incomplete Recognition of Community Rights:**
  - Slow and incomplete recognition of Community Forest Rights (CFRs).
  - Forest bureaucracy resistant to CFRs, hindering decentralization of forest governance.

Way Forward:
- **Understanding FRA's Intent:**
  - Political leaders, bureaucrats, and environmentalists need to appreciate the spirit and intent of the FRA.
  - Recognition of historical injustices and the potential for community-led forest conservation.
- **Mission Mode Implementation Pitfalls:**
  - Caution against mission mode implementation that may play into the hands of the Forest Department, distorting rights recognition.
- **Addressing Community Rights:**
  - Emphasis on substantial recognition and activation of Community Forest Rights.
  - De-nationalization of minor forest produce to empower communities in managing their forests.
- **Preventing Conservation and Development Exploitation:**
  - Refusal to acknowledge community rights conveniently aligns with the agendas of staunch conservationists and the development lobby.
  - Ensuring community consent in projects affecting forests, preventing exploitation without due consideration.

Nut Graf: The Forest Rights Act (FRA) of 2006 aimed to redress historical injustices faced by forest-dwelling communities in colonial and post-independence India. Despite its transformative objectives, implementation challenges persist, marked by political opportunism and bureaucratic hurdles. Recognizing individual and community rights, the FRA seeks to democratize forest governance. However, its potential remains largely unrealized, necessitating a deeper understanding of its intent and a commitment to address ongoing distortions.

GOVERNANCE

1. Improving the capability of the Indian State

Syllabus: GS-2, Government policies and interventions for the development of various sectors, Issues arising out of design and implementation of government intervention

Mains: Improving the capability of the Indian State

Context: The Indian state grapples with a paradox—being too expansive yet relatively small in key metrics.
● Complex regulatory frameworks hinder business and civic activities, creating uncertainties for citizens.
● The state's size, as indicated by civil servant per capita and public sector employment, raises concerns about adequacy in addressing societal needs.

Issues:
● **Bureaucratic Red Tape:**
  ○ Licences, permits, clearances, and permissions create a challenging bureaucratic environment for businesses and citizens.
  ○ The labyrinth of regulations poses obstacles to ease of doing business and adherence to the law.
● **Size Discrepancy:**
  ○ India's civil servants per capita is the smallest in the G-20, impacting the state's effectiveness.
  ○ The public sector's share in total employment and key service sectors is significantly lower compared to other countries.
● **Resource Scarcity:**
  ○ India faces a scarcity of essential public goods, welfare provisions, and the justice system.
  ○ The state's limited capability results in outsourcing services, impacting critical sectors like primary health.

Significance:
● **Debate on State's Role:**
  ○ The debate on the state's role oscillates between proponents advocating increased public spending and detractors calling for a smaller state.
  ○ Both perspectives miss the crucial role of incentives, institutional structures, and skill gaps in hindering effective governance.
● **Perverse Incentives and Skill Gap:**
  ○ Perverse incentives in public institutions and a skill gap among officials erode the ability to formulate and implement sound policies.
  ○ Lack of technocratic skills at top levels leads to substantial outsourcing to consultancy firms, indicating a need for internal expertise.

Solutions:
● **Separation of Powers:**
  ○ Experiences from countries like Australia, Malaysia, and the United Kingdom suggest separating policymaking and implementation responsibilities expedites execution and encourages innovations.
  ○ Implementation-related issues should be delegated to frontline personnel to enhance accountability.
● **Lateral Entry and Skill Development:**
  ○ Institutionalized lateral entry at mid and senior levels can bridge the civil services' size and technocratic gap.
  ○ Subject-specific training under Mission Karmayogi can enhance the skill set of civil servants.
● **Strengthening Oversight Agencies:**
  ○ Increase the strength of professional staff in oversight agencies like SEBI and RBI.
  ○ Sensitize oversight agencies to appreciate the context of policy decisions, reducing unnecessary delays and disputes.
● **Reforming Regulatory Appointments:**
  ○ Address issues related to the appointment of retired officers to regulatory bodies and tribunals.
  ○ Increase the retirement age and establish an absolute upper limit for all appointments to curb political manipulation.
● **Realigning Public Sector Pay:**
  ○ Moderate pay raises by future Pay Commissions and a reduction in the upper age limit can address corruption in appointments.
  ○ Align public sector salaries with risk-adjusted pay in the private sector to attract intrinsically motivated individuals.

Nut Graf: *Improving the capability of the Indian state requires a comprehensive approach addressing bureaucratic complexities, size discrepancies, and resource scarcities.*

2. An experiment in education at grassroots level schools in Bangladesh

Syllabus: Government policies and interventions aimed at development in various sectors and issues arising out of their design and implementation. Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

Mains: A comparison between the Indian system of school education with that of neighbouring countries.

Context:
Academic Swati Narayan's book, "Unequal," exposes systemic inequalities in India by comparing social indicators with neighbouring countries, revealing disparities in education, health, and more.

Introduction
- Swati Narayan, in her book "Unequal," explores systemic and barbaric inequalities in India, drawing comparisons with neighbouring countries – Bangladesh, Sri Lanka, and Nepal.
- Narayan's five-year study reveals disparities in social indicators such as health, education, nutrition, and sanitation, where even poorer neighbours outperform some Indian states.

Inspiring Early Childhood Education in Bangladesh
- Swati Narayan describes the Kajoli Early Childhood Education Model practised in Bangladesh, wherein emphasis is given to joyful learning through play and peer interaction.
- Despite limited resources, Bangladeshi preschool teachers use innovative methods and collective financing to provide quality education.
- Survey results indicate that Bangladeshi students outperform their Indian counterparts, with nearly 90% of grade 5 students reading at least a grade 2 level paragraph in Bengali.

Learning Competencies Across Borders
- The study compares learning levels across borders, revealing striking differences between Indian states and neighbouring countries.
- In Bihar, India, less than half of grade 5 students could read fluently, and disparities were evident based on family income.
- The 'Degree Lao, Naukri Pao' scheme in Bihar intended to recruit local teachers had unintended consequences, with unqualified teachers compromising education quality.

Signs of Decay in Bihar's Schools
- Bihar's government schools exhibit signs of decay, with instances of teachers simultaneously instructing different grades and even pretending to teach in the dark.
- Corporal punishment, despite being illegal, is prevalent, and many enrolled students don't attend classes, leading to concerns about mass displacement by private coaching centres.
- A significant percentage of students in Bihar attend private tuition, contributing to the decline in government school attendance.

Contrasting Approaches in Bangladesh and Nepal
- Bangladesh's educational success is attributed to competent and dedicated teachers, timely availability of textbooks, scholarships, and a cultural emphasis on education.
- Nepal demonstrates that family income does not significantly influence learning levels, highlighting the potential for more equitable educational outcomes.

Private Tuition Trends
- In Bihar, 82% of students in private schools and 44% in government schools opt for private tuition, indicating a reliance on supplementary education.
- Bangladesh and Nepal show lower percentages, with Bangladesh even considering a ban on private coaching centres and tuition.

NutGraf: *In "Unequal," Swati Narayan unveils stark social inequalities in India, contrasting educational successes in Bangladesh and Nepal with systemic flaws in Bihar, showcasing the need for transformative changes.*

3.   Urgent need to control use of e-cigarettes, says WHO

Syllabus: GS 2- Governance

Prelims: About e-cigarettes

Introduction
- The World Health Organization (WHO) has issued a stern warning against the use of e-cigarettes, emphasising their ineffectiveness in aiding tobacco cessation and highlighting alarming evidence of adverse health effects at the population level.

Key Concerns and Urgent Measures
- **Ineffectiveness for Quitting:** E-cigarettes, considered consumer products, lack demonstrated effectiveness for population-level tobacco cessation.
- **Population Health Risks:** Emerging evidence indicates adverse health effects, prompting an urgent call for global control measures to safeguard children, non-smokers, and the overall population.
- **Child Recruitment and Addiction:** Children are increasingly lured into e-cigarette use, leading to potential nicotine addiction, necessitating strict measures to prevent uptake and protect vulnerable populations.

Global Scenario and Regulatory Gaps
- **Global Sales and Marketing:** E-cigarettes have flooded the open market, with aggressive marketing strategies targeting young people.
- **Limited Regulations:** Regulatory gaps persist, with 74 countries lacking specific regulations for these products. Thirty-four countries have outright banned e-cigarette sales, while 88 countries have no minimum age restrictions.

India's Regulatory Framework
- **Prohibition Act:** In India, the possession of e-cigarettes is a violation of the Prohibition of Electronic Cigarette Act, 2019, reflecting the government's commitment to controlling their use.

Impact on Youth
- **Social Media Influence:** Even brief exposure to e-cigarette content on social media correlates with increased intention to use these products and fosters positive attitudes toward them.
- **Gateway to Smoking:** Studies consistently show that young e-cigarette users are almost three times more likely to take up traditional cigarettes later in life.

Alarming Figures and Regional Trends
- **Youth Usage Rates:** Globally, children aged 13-15 years use e-cigarettes at rates surpassing adults. Specific regions, including Canada and the U.K., have witnessed significant increases in youth e-cigarette use.
- **Nicotine Addiction and Health Risks:** E-cigarettes, particularly those with nicotine, are highly addictive and pose health risks, including the generation of toxic substances linked to cancer, heart, and lung disorders.

Comprehensive Approach Needed
- **Long-term Health Effects:** While the full scope of long-term health effects is not entirely understood, evidence supports the generation of harmful substances, brain development risks, and potential learning disorders in young people.
- **Foetal Exposure:** Pregnant women's foetal exposure to e-cigarettes can adversely impact development, and emissions from e-cigarettes pose risks to bystanders.
- **Urgent Preventive Measures:** The WHO advocates urgent global measures to prevent e-cigarette uptake, counter nicotine addiction, and align with comprehensive tobacco control strategies based on national circumstances.

4.   Telecommunications Bill, 2023

Syllabus: Governance

Mains: Provisions of Telecommunications Bill and issues associated with it

Context: The Telecommunications Bill, 2023 aims to consolidate laws for wireless networks, simplify procedures, and address challenges in the digital landscape.

Provisions under the Telecommunications Bill:
- **Consolidation and Digitization:** The bill consolidates laws for wireless networks, emphasising digitised licensing processes for telecom operators.
- **Empowering Telecom Operators:** Operators gain a new approach to handle non-compliance, access to district- and State-level authorities for permissions, and dispute resolution.
- **Satellite Internet Industry:** The bill provides clarity that the satellite Internet industry won't need to bid for spectrum, aligning India with global practices.

- **Industry Support:** Industry bodies applaud the bill for streamlining regulations, promoting ease of doing business, and offering stability for the telecom expansion phase.

Issues in the Present Bill:
- **Expansive Definition:** The broad definition of telecom services raises concerns over state authority, inviting worries about privacy and surveillance.
- **Privacy Compromises:** Proposed solutions for spamming concerns entail compromises to privacy, necessitating careful consideration given the potential for state-sponsored snooping.
- **Transparency Concerns:** Lack of transparency in the consultation process during the last draft's public floatation raises questions about the government's motives.
- **Unaddressed Surveillance and Shutdown Issues:** Critical concerns related to surveillance reform and Internet shutdowns need attention, considering their significant implications.

Way Forward:
- **Open-Minded Approach:** The government should address privacy concerns with an open mind, acknowledging the significant powers granted by the bill.
- **Transparent Rule-Making:** To reassure the public, the government must conduct rule-making with absolute transparency and consultation, especially for subordinate legislation by the Department of Telecommunications.
- **Comprehensive Regulation:** Given the digital evolution since the 19th century, regulations must comprehensively address issues arising from the Internet's dramatic growth.
- **Public Reassurance:** The government must ensure public trust by actively involving industry bodies and the public in the rule-making process, acknowledging the evolving telecommunications landscape.

Nut Graf: The Telecommunications Bill, 2023 aims to streamline regulations and simplify procedures in the digital sphere. While lauded for its advancements, concerns over privacy, surveillance, and transparency in rule-making require urgent government attention for comprehensive and trustworthy legislation.

5.   Will the new telecom Bill streamline the sector?

Syllabus: Government policies and interventions

Mains: Pros and cons of new telecom Bill

Context: The recent passage of the Telecommunications Bill, 2023, in Parliament has sparked discussions regarding its potential to streamline the telecom sector.
1. **Telecommunications Bill, 2023**
   - **Objective:** Replace outdated laws like the Telegraph Act of 1885, the Indian Wireless Telegraphy Act of 1933, and The Telegraph Wires (Unlawful Possession) Act, 1950.
   - **Focus:** Consolidate laws governing wireless networks and Internet service providers, and streamline licensing procedures for telecom operators.
2. **Key Provisions of the Bill**
   - **Governance:** Regulates telecommunication networks and services, spectrum allocation, and the right of way for laying telecom infrastructure.
   - **Emergency Measures:** Empowers the government to intercept messages, suspend services, and take temporary possession of telecommunication services or networks.
   - **Consumer Protection:** Establishes a 'Do Not Disturb' register to protect consumers from unwanted messages.
3. **Shift in Regulatory Approach**
   - **Authorisation Regime:** Shifts from a licensing regime to an authorisation regime, requiring all telecom services to obtain authorization from the Central Government.
   - **Penalties:** Non-compliance may result in imprisonment or fines, emphasizing the regulatory framework's stringency.
4. **Concerns Raised**
   - **Mass Surveillance:** Critics argue that the Bill enables mass surveillance and empowers the government to shut down the internet.
   - **Biometric Identification:** Mandates users to be identified through verifiable biometric-based identification, raising privacy concerns.
   - **Encryption Standards:** Grants the government authority over encryption and data processing standards, potentially impacting user privacy.
5. **Industry Response**
   - **Positive Aspects:** Industry associations like DIPA and COAI appreciate provisions promoting uniformity in 'right of way' rules, addressing long-standing issues for infrastructure providers.
   - **Tax Relief:** Acknowledged for providing relief to the infrastructure industry from additional tax burdens.
6. **Digital Rights Groups' Perspective**
   - **Concerns:** Signal Foundation, Internet Freedom Foundation, and others express concerns over indiscriminate surveillance, weakening online safety, and uncertainties around encryption.
   - **Demands:** Urge the withdrawal of the Bill in its current form, emphasizing the need for procedural safeguards and privacy protection.

Nut Graf: The Telecommunications Bill, 2023, presents a significant shift in the regulatory landscape of the telecom sector. While it aims to streamline processes and modernize outdated laws, concerns over privacy, surveillance, and encryption standards need careful consideration.

6. Tax 'HFSS' foods, view it as a public health imperative

Syllabus: Government Policies and Interventions for Development in various sectors and Issues arising out of their Design and Implementation

Mains: Health implications with higher consumption of HFSS foods and way to tackle it

Context:
- HFSS (High Fat Sugar Salt) foods contribute to major health issues: obesity, diabetes, and high blood pressure.
- Global concern, as 70% of overweight people are in Low- and Middle-Income Countries.

The gravity of the Issues:
- Non-communicable diseases (NCDs) burden in India rose from 38% (1990) to 65% (2019).
- Annual deaths in India due to dietary risks: 1.2 million.
- Economic impact of overweight and obesity in India: $23 billion (2017) rising to a projected $480 billion by 2060.

India's Shift in Dietary Habits:
- Ultra-processed food sector growth: 13.4% CAGR (2011-2021) in India.
- India is the world's largest producer and consumer of sugar (2022).
- Alarming surge in HFSS consumption; 50%-60% of edible sugar, salt, and fat used in processed foods.
- Sales of snacks and soft drinks tripled, exceeding $30 billion in the last decade.

Rationale for High HFSS Tax:
- **Global trend:** Fiscal measures to combat obesity, with taxation as an effective tool.
- HFSS taxation in various countries (Denmark, France, Hungary, Mexico, etc.).
- Market failures associated with HFSS consumption, lead to negative externalities (increased healthcare costs) and internalities (consumer harm).
- Taxes can reduce societal burdens and demonstrate promise in curbing unhealthy purchases.

GST and Nutritional Content:
- HFSS taxation is not for revenue generation but as a tool to incentivize industry reformulation and promote healthier choices.
- Possibility of a non-regressive and fiscally neutral HFSS tax.
- Differentiated tax rates based on nutritional quality to encourage product reformulation.
- Current GST rates do not align with nutritional content, overlooking variations in sugar, salt, and other components.
- Proposed GST system with higher rates for HFSS foods and minimal rates for healthier alternatives to create a level-playing field.
- HFSS taxation is seen as a public health imperative, combined with nutrition literacy promotion and effective food labelling for a comprehensive approach.

Nut Graf: Amidst rising global health concerns, the consumption of High Fat Sugar Salt (HFSS) foods, particularly in India, demands urgent attention. With a staggering economic impact and shifting dietary habits, a compelling case is made for implementing high HFSS taxes, aligning with global efforts to combat obesity. The current GST framework falls short in addressing nutritional nuances, emphasizing the need for a more health-centric approach to taxation.

7. Analyzing the Post Office Bill, 2023

Syllabus: Government Policies and Interventions for Development in various sectors and Issues arising out of their Design and Implementation

Mains: Provision of Post Office Bill & issues associated with it

Introduction: Recently, the Indian Parliament passed the Post Office Bill, aiming to replace the archaic Indian Post Office Act of 1898.
- Positioned as a transformative legislation, it endeavours to enhance the functionality of the Postal Department, serving both as a messenger service and a provider of banking facilities.

Key Features of the Bill:
- The Post Office Bill, 2023 introduces provisions allowing the interception of postal articles based on grounds such as state security, friendly relations with foreign states, public order, emergencies, public safety, or contravention of the Bill or other laws.

- The appointed officer-in-charge, designated by the Union government, holds the authority to 'intercept, open, or detain' any postal article for the stated reasons.
- The Bill grants flexibility to dispose of intercepted items as deemed appropriate by the government.
- Additionally, the Union government can authorize Post Office officers to deliver suspected articles to customs or other specified authorities.
- Crucially, the Bill exempts the Post Office from liability unless officers act fraudulently or willfully cause loss, delay, or mis-delivery.
- Notably, it lacks offences and penalties, except for the recovery of unpaid amounts as arrears of land revenue.
- This departure from the 1898 Act, which prescribed severe penalties for offenses like theft and misappropriation, has stirred debates.

Historical Context of the Bill:
- The Post Office Bill follows a historical trajectory, echoing elements present in the 1898 Act.
- Similar to the 'emergency' ground in the current Bill, the 1898 Act permitted interception during a 'public emergency.'
- However, the Law Commission of India's 38th report critiqued this provision, urging alignment with the Constitution.
- The report led to the 1981 Telegraph (Amendment) Act, introducing safeguards against arbitrary interception.
- Earlier attempts to address interception were seen in the Indian Post Office (Amendment) Bill, 1986.
  - However, this Bill faced hurdles, including non-assent by then-President Zail Singh. The lack of resolution resulted in its withdrawal by the Vajpayee government in 2002.

Concerns Raised by Opposition Leaders:
- Opposition leaders have expressed reservations about the Post Office Bill, particularly concerning privacy rights. It violates the fundamental right to privacy. The absence of guidelines, according to some leaders, opens the door to state surveillance, potentially infringing on constitutional rights.
- They coined the term "Big Brother syndrome," suggesting that the Bill enables government monitoring of citizens.
- Concerns were also raised about the lack of clarity on grounds for interception, with terms like 'emergency' deemed vague and arbitrary.
- The absence of a defined procedure for interception and the empowerment of officers to 'open and detain' shipments without clear selection criteria further fueled apprehensions.
- MP Shashi Tharoor highlighted the absence of a grievance redressal mechanism for citizens.
  - He emphasized that citizens, despite being relieved of any liability, lack avenues to contest or raise concerns about interception, violating principles of natural justice and due process.

Relevant Supreme Court Rulings:
- In the People's Union for Civil Liberties (PUCL) versus the Union of India (1996), the Supreme Court recognized the right to privacy as fundamental.
  - It mandated safeguards against arbitrariness in state surveillance, emphasizing the need for a just and fair procedure.
- The landmark verdict in Justice KS Puttaswamy versus Union of India (2017) declared privacy a fundamental right.
  - The judgment outlined criteria for state measures interfering with privacy, including legality, legitimate goals, suitability, necessity, proportionality, and procedural safeguards.

Expert Opinions:
- Legal experts expressed concerns about the Post Office Bill's lack of safeguards. They emphasize the necessity for justifiable reasons recorded in writing for interceptions, citing the potential for state surveillance without adequate safeguards.
- They also highlight the connection between interception provisions and citizen services, raising alarms about potential privacy violations.
- The absence of written orders and safeguards exacerbates these concerns, creating a scenario ripe for abuse.

Conclusion:
- As India navigates the complexities of security and privacy in the digital age, the Post Office Bill, 2023, emerges as a focal point of debate.
- Balancing the need for interception for national security with safeguarding citizens' privacy rights requires meticulous consideration.
- The concerns raised by opposition leaders, the historical context, Supreme Court rulings, and expert opinions underscore the imperative for a nuanced approach in shaping legislation that aligns with constitutional principles and protects individual rights.

Nut Graf: *The Post Office Bill, 2023, passed by the Indian Parliament, replacing the 1898 Act, sparks debates on security and privacy. Introducing interception provisions, the Bill faces opposition concerns about violating privacy rights. Historical context, Supreme Court rulings, and expert opinions underscore the need for a balanced legislative approach.*

8. Child nutrition: WHO v/s Indian standards

Syllabus: Issues related to the development and management of the social sector/Services relating to Health, Education, Human Resources Issues related to poverty and hunger

Mains: Child nutrition: WHO v/s Indian standards

Context: Child undernutrition remains a persistent challenge in India, with determinants including food intake, dietary diversity, health, sanitation, women's status, and poverty. Monitoring childhood undernutrition through anthropometric standards is crucial, and India currently uses the World Health Organization (WHO) Growth Standards. However, there is an ongoing debate on the relevance and accuracy of these standards in the Indian context.

Using the MGRS as the Base
- **WHO Growth Standards Background:**
  - WHO standards are based on the Multicentre Growth Reference Study (MGRS) conducted in six countries from 1997 to 2003.
  - Aimed to establish growth standards, not references, for children in healthy environments.
- **Sampling Concerns and Comparisons:**
  - Debate on overestimation of undernutrition by WHO standards.
  - Difficulty in finding equivalent samples in large-scale Indian surveys meeting MGRS criteria.
  - MGRS sample from privileged households in South Delhi; contrasts with the high levels of inequality in India.
- **Prescriptive Nature of MGRS:**
  - MGRS had a component of counselling for appropriate feeding practices.
  - Comparisons with prevalence studies may be misleading due to differing study norms.
  - Genetic growth and other concerns.
- **Maternal Height and Genetic Potential:**
  - Maternal height as a non-modifiable factor for child growth.
  - Low average maternal heights reflect intergenerational transmission of poverty.
- **Population-Level Changes:**
  - Regional differences in stunting and adult height improvements within India.
  - Gene pools shift with socio-economic development, challenging the immutability of genetic potential.
- **Risk of Misdiagnosis:**
  - Concerns about high standards leading to misdiagnosis and potential overfeeding.
  - Possible increase in overweight and obesity, contributing to non-communicable diseases (NCDs).

Solutions and Recommendations
- **Improved Nutrition Programs:**
  - Enhance the quality of meals in schemes like mid-day meals and supplementary nutrition.
  - Urgently implement recommendations such as including eggs in children's meals and incorporating pulses in the Public Distribution System.
- **Addressing Distal Determinants:**
  - Address gaps in livelihoods, poverty, education access, and women's empowerment.
  - Recognize the interconnectedness of these determinants with overall development and equitable resource distribution.
- **ICMR's Initiative:**
  - Indian Council of Medical Research (ICMR) committee recommends revising growth references.
  - Suggests a rigorous nationwide study for devising national growth charts.

Importance of WHO-MGRS Standards
- **Aspirational and Achievable:**
  - Stick to the aspirationally high yet achievable standards set by WHO-MGRS.
  - Essential for international comparisons and intra-country trend analysis.

Nut Graf: *While recognizing the need for continuous improvement and precision in child growth data, it is advisable for India to maintain the use of WHO-MGRS standards.*

DISASTER MANAGEMENT

1. Disaster funding in India

Syllabus: GS 3- Disaster Management

Prelims: About Disaster Funding

Introduction
- The Union government released ₹493.60 crore to Andhra Pradesh and ₹450 crore to Tamil Nadu for the damage caused by severe cyclonic storm Michaung.
- Additionally, the Centre approved ₹561.29 crore for Chennai for flood mitigation efforts.
- The approved urban flood mitigation project for Chennai aims to make the city flood-resilient and marks the beginning of a series of such efforts.

Disaster Funding in India
- In India, disaster management financing is dealt with by the Disaster Management Act (DMA) of 2005.
- DMA introduced the idea of disaster management cycle where we are focussed on (1) pre-disaster: planning and preparedness, (2) during disaster: emergency relief and response and also on (3) post disaster: relief and recovery.
- DMA sets up dedicated funds for disaster management in India. Under this act India adopted the National Disaster Management Policy in 2009 and brought out a National Disaster Management Plan in 2016.
- DMA and Disaster Management Plan, provides for the establishment of two specific funds namely, (1) Disaster Response Fund (National Disaster Response Fund and State Disaster Response Fund) and (2) Disaster Mitigation Fund (National Disaster Mitigation Fund).
- Disaster Response Fund provides disaster financing for the immediate response operation during the disaster.
- Disaster Mitigation Fund is to finance mitigation efforts implemented in the pre-disaster phase to reduce the impact of disasters.

2. Coastal Urban Flooding in Chennai

Syllabus: Disasters and Disaster Management

Mains: Issues of Coastal Urban Flooding

Context: Cyclone Michaung, lingering off the coast of Chennai on December 3-4, brought unprecedented rainfall, reminiscent of the devastating floods in 2015. There have been 3 such incidents in 8 years. The Centre has approved India's first urban flood mitigation project to tackle urban floods after the Chennai deluge.
- The deluge resulted in floods, claiming lives, disrupting daily life, and highlighting the city's vulnerability to extreme weather events.
- Despite efforts post-2015, the recent cyclone exposed gaps in flood mitigation and management strategies, prompting the need for a comprehensive approach.
  1. **Immediate Impacts:**
     - **Rainfall Statistics:** Nungambakkam and Meenambakkam observatories recorded 46.8 cm and 43.8 cm of rain, respectively.
     - **Human Toll:** 17 lives lost, thousands stranded, supply disruptions, and extensive property damage.
     - **Infrastructure Disruptions:** Airport closure, train cancellations, and temporary closure of educational institutions.
  2. **Reflections on 2015:**
     - **Comparisons with 2015:** Residents draw parallels with the catastrophic floods in 2015, emphasizing the recurring nature of such calamities.
     - **Increased Cyclonic Activity:** Climate Trends note rising cyclone frequency and intensity in the north Indian Ocean, attributing it to ocean warming.
  3. **Government Response and Mitigation Efforts:**
     - **Post-2015 Initiatives:** Flood mitigation projects initiated post-2015, guided by an advisory panel, yielded partial results.
     - **Unfinished Projects:** The second phase of the flood mitigation project around Porur Lake incomplete, unfinished channel improvements, and water body restoration projects in progress.
  4. **Critical Issues and Challenges:**
     - **Incomplete Flood Management Projects:** Porur Lake area flooded due to incomplete projects, indicating the need for comprehensive project execution.
     - **Water Body Degradation:** Vanishing water bodies and shrinking lake areas contribute to flooding, demanding urgent rejuvenation efforts.
     - **Neglected Areas:** Discrepancies in rescue and relief efforts raise concerns about the equitable distribution

of resources.
5. **Citizen Concerns and Expectations:**
   ● **Community Perspectives:** Residents question the neglect of certain areas during rescue operations, urging the government to address disparities.
   ● **Government Accountability:** Calls for systematic flood control management, integrated drainage systems, and retrieval of encroached spaces.
6. **Expert Recommendations:**
   ● **Rejuvenation of Water Bodies:** Emphasis on restoring disappearing water bodies, particularly in Vyasarpadi, Velachery, Adambakkam, Korattur, Ambattur, Retteri, and Pallikaranai marshlands.
   ● **Protected Zones Declaration:** Proposals to declare rejuvenated water bodies as protected zones for sustainable flood prevention.
7. **Need for Systematic Flood Control Management:**
   ● **Macro Drain Improvements:** Urgent attention to macro drains and comprehensive flood control strategies.
   ● **Space Retrieval:** Addressing encroachments on critical spaces to enhance water drainage capabilities.

Nut Graf: Cyclone Michaung's impact on Chennai underscores the pressing need for a robust and comprehensive approach to flood mitigation and management. Despite post-2015 initiatives, unfinished projects and environmental degradation persist.

3. An icy warning

Syllabus: GS-3, Disasters and Disaster Management

Mains: Threats from glaciers

Context: The state of glaciers serves as a poignant barometer for assessing the impacts of the climate crisis, reflecting the consequences of rising global temperatures and greenhouse gas emissions.
● The World Meteorological Organization's recent report, "The Global Climate 2011-2020," emphasizes the alarming thinning of glaciers worldwide, with an average loss of approximately one meter per year from 2011 to 2020.
● As glaciers continue to diminish, there is a pressing need to recognize and categorize threats from glaciers on par with other natural disasters like cyclones and earthquakes.

Glacial Health Overview:
● **Decadal Thinning Trend:**
   ○ The WMO report highlights that glaciers globally experienced an average thinning of one meter annually from 2011 to 2020.
   ○ Regional variations exist, but the overarching trend is the reduction of glaciers in all parts of the world.
● **Reference Glaciers and Disappearance:**
   ○ Reference glaciers, crucial for long-term assessments, are already disappearing, impacting assessments of glacier health.
   ○ Notable examples include in Africa, glaciers on the Rwenzori Mountains and Mount Kenya are projected to disappear by 2030, and those on Kilimanjaro by 2040.

Emerging Threats:
● **Pro-Glacial Lakes and GLOF Events:**
   ○ The report underscores the rapid growth of pro-glacial lakes, posing risks of Glacier Lake Outburst Floods (GLOFs).
   ○ Instances like the Uttarakhand floods in 2013 exemplify the devastating consequences of glacial melt leading to catastrophic flooding.
● **Case of Chungthang Dam:**
   ○ The destruction of the Chungthang dam in Sikkim in 2023 serves as a vivid example of GLOF impact, triggered by a melting glacier and downstream catastrophe.
● **Accelerated Glacier Disappearance:**
   ○ The disappearance of glaciers in the Hindu Kush Himalayas accelerated by 65% in the 2010s compared to the previous decade.
   ○ Global greenhouse gas emissions are projected to accelerate glacier volume decline by 55% to 75%, affecting freshwater supply by 2050.

Climate Sensitivity and Monitoring:
● **Need for Rigorous Monitoring:**
   ○ Glacier systems exhibit high sensitivity to warming, necessitating comprehensive monitoring.
   ○ The lack of an early warning system for GLOF events in the Himalayas underscores the urgency for enhanced monitoring.

Solution:
● **Comprehensive Risk Assessments:**
  ○ Develop comprehensive risk assessments to identify vulnerable regions and potential GLOF-prone areas.
  ○ Prioritize mapping and infrastructure development with the highest standards of care.
● **Early Warning Systems:**
  ○ Establish early warning systems for GLOF events, similar to those in place for cyclones, floods, and earthquakes.
  ○ Enhance preparedness and response capabilities to mitigate the impact of glacier-related disasters.

Nut Graf: The recognition of glacier threats as a critical risk factor, akin to other natural disasters, is imperative in the face of accelerated climate change. The urgency to implement early warning systems, conduct comprehensive risk assessments, and prioritize infrastructure development cannot be overstated.

4. Rift over disaster relief

Syllabus: GS-3, Disaster Management

Mains: Rift over disaster relief

Context: The recent dispute between the Central and Tamil Nadu governments regarding flood relief has brought to light the need for clear criteria in awarding disaster relief. The clash between Union Finance Minister Nirmala Sitharaman and State Minister for Youth Welfare Udhayanidhi Stalin over relief funds has diverted attention from the crucial task of rebuilding after heavy rainfall in the state.

Issues at Hand:
● **Semantics and Duel Between Ministers:** The public spat between Nirmala Sitharaman and Udhayanidhi Stalin over terminology regarding flood relief has detracted focus from the urgent need to restore normalcy in the flood-affected areas of Tamil Nadu.
● **Relief Fund Requests:** Chief Minister M.K. Stalin sought interim relief funds of ₹7,033 crore and a final relief fund of ₹12,659 crore for damage caused by Cyclone Michaung and ₹2,000 crore from the PM's National Relief Fund for the recent floods. The total request from the Union government is ₹21,692 crore.
● **Central Government's Position:** The central government, as highlighted by Defence Minister Rajnath Singh, does not declare every natural disaster a national disaster. Clear guidelines for disaster classification are necessary.
● **Exclusion of Permanent Restoration Works:** The exclusion of long-term or permanent restoration works from the State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF) needs reevaluation.
● **Micro, Small, and Medium Enterprises (MSMEs):** The relief norms of SDRF/NDRF do not cover MSMEs, a sector employing nearly 1.4 crore people in the state. Addressing their concerns is essential.
● **Norms on Disaster Management:** There is a need for new norms on disaster management, especially in cyclone-vulnerable states like Tamil Nadu, Andhra Pradesh, Odisha, West Bengal, and Gujarat, to avoid political controversies.

Significance of Clear Guidelines:
● **Timely Assistance:** Clarity in criteria ensures that relief is provided promptly, addressing the immediate needs of those affected by disasters.
● **Avoidance of Political Controversy:** Clearly defined norms prevent disputes between the central and state governments, allowing for a more efficient and cooperative disaster response.
● **Inclusion of MSMEs:** Revising relief norms to include MSMEs acknowledges their economic significance and ensures the well-being of a significant workforce.

Solution:
● **Clear Guidelines for Relief Classification:** The central government should establish transparent and comprehensive guidelines for classifying natural disasters, distinguishing between immediate relief and long-term restoration works.
● **Inclusive Relief Norms:** Reviewing the relief norms to encompass permanent restoration works and extending support to MSMEs ensures a more holistic approach to disaster relief.
● **Consultation and Collaboration:** Engaging with cyclone-prone states to formulate new disaster management norms fosters collaboration and minimizes the potential for political disputes.

Nut Graf: The recent discord over flood relief underscores the importance of clear criteria for disaster relief. Timely and inclusive assistance, avoiding political controversies, and addressing the concerns of all affected sectors are crucial aspects.

GEOGRAPHY

1.　Cyclone Michaung

Syllabus: Important Geophysical Phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Prelims: Cyclone Michaung

Context: A deep depression over the Bay of Bengal is intensifying, posing a significant threat to the coastal districts of Andhra Pradesh (A.P.) and Tamil Nadu (T.N.).
- Anticipated to evolve into Cyclone Michaung by Sunday morning, meteorological authorities predict its landfall on 5th december between Nellore and Machilipatnam. The India Meteorological Department (IMD) warns of winds with sustained speeds of 80-90 kmph, gusting up to 100 kmph.

Issues:
- Intensification and Movement: The deep depression, currently situated about 420 km southeast of Chennai, is expected to transform into a cyclonic storm and approach the southern A.P. and northern T.N. coasts by 4th december morning.
- Impact on Coastal Regions: The cyclone brings the potential for heavy to very heavy rainfall, with extremely heavy rain in isolated areas of coastal Andhra and Yanam. T.N. faces the prospect of heavy rainfall.
- Disruption of Normalcy: The impending cyclone has led to the cancellation of 144 trains, grounding fishermen, and necessitating the establishment of relief camps in A.P. In T.N., disaster relief preparations are underway, with evacuation plans in place.

Significance:
- Imminent Threat: With winds reaching 80-90 kmph, the cyclone poses a serious threat to life, property, and infrastructure in the affected regions.
- Economic Impact: The cancellation of trains and grounding of fishing activities may have significant economic repercussions for the coastal communities.
- Preventive Measures: The preparations for rescue, relief, and evacuation underscore the importance of proactive measures to mitigate the impact of natural disasters.

Solutions:
- Evacuation and Relief Camps: Coastal regions are being evacuated, and relief camps are being set up in A.P. to ensure the safety of residents.
- Communication and Awareness: Dissemination of timely and accurate information to the public is crucial to facilitate preparedness and response efforts.
- Deployment of Response Teams: The National Disaster Response Force and State Disaster Response Force are strategically positioned to respond swiftly to affected areas.

2.　Intensification of Cyclone Michaung

Syllabus: Important Geophysical Phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Prelims: Cyclone Michaung

Mains: Impact of Cyclone Michaung

Context: Cyclone Michaung, making landfall in Andhra Pradesh on December 5, 2023, after traversing the Bay of Bengal, raised questions about its formation, intensification, and impacts.

Formation Process:
- IMD identified a low-pressure area on November 29 in the southwest Bay of Bengal.
- Expected progression to a depression, deep depression, and cyclonic storm by December 3.
- Landfall was forecasted between Nellore and Machilipatnam on December 5.

Michaung's Movement:
- Approached north Tamil Nadu, affecting Chennai, Kancheepuram, Thiruvallur, and Chengalpattu.
- Cyclone intensified on December 4, bringing heavy rain and strong winds to Chennai.

Intensification Factors:
- Michaung intensified into a super-cyclonic storm on December 4.
- Cyclone's intensification linked to warm sea surface, prolonged time over water, and the Madden-Julian oscillation (MJO).
- Study indicates a 15% increase in tropical cyclones with wind speeds exceeding 185 km/hr since 1979.

Climate Change Connection:
- The role of climate change in cyclone intensification due to warmer sea surfaces.
- Michaung's journey over the Bay of Bengal and its super-cyclonic status highlighted climate change implications.

Landfall and Devolution:
- Michaung crossed land south of Bapatla, Andhra Pradesh, with sustained winds of 90-100 km/hr.
- By December 6, the cyclone had weakened into a well-marked low-pressure area.

Nut Graf: Cyclone Michaung's journey from formation to landfall highlights the intricate interplay of meteorological factors and the increasing influence of climate change on cyclonic systems.

3. India's extreme rainfall 'corridor'

Syllabus: Salient features of World's Physical Geography, Important Geophysical Phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., Geographical features and their location-changes in critical geographical features (including Water-bodies and Ice-caps) and in flora and fauna and the effects of such changes.

Mains: Indian Monsoon

Context:
The Indian monsoon, affected by global warming, reveals a surprising stability—a 'highway' of synchronised extreme rainfall events stretching from West Bengal to Gujarat, persisting since 1901.

Introduction
- The Indian monsoon, a complex climatic phenomenon, has experienced changes due to global warming, impacting various aspects like onset, withdrawal, and precipitation patterns.
- A recent study, part of which is presented here, sheds light on the stability of a corridor witnessing synchronised extreme rainfall events from West Bengal to Gujarat and Rajasthan, challenging assumptions about the loss of stationary elements in climate systems.

Impact of Global Warming on Indian Monsoon
- Over seven decades, total seasonal rainfall has exhibited a downward trend, attributed to global warming's differential heating of land and ocean.
- Changes in the monsoon season include longer dry spells, intensified wet spells, and unpredictable heavy rain events, challenging forecasting efforts.

Identifying the Synchronised Extreme Rainfall 'Highway'
- A recent study discovered a remarkable stationary element in the monsoon dynamics—a 'highway' hosting synchronised extreme rainfall events. This corridor stretches from parts of West Bengal and Odisha to parts of Gujarat and Rajasthan.
- The most significant revelation is that this corridor has remained unchanged from 1901 to 2019, providing hope for potential improvements in process understanding and better predictions.

Network Analysis and Stability
- Traditional statistical methods often miss the complex relations between multiple nodes of rainfall centres.
- Sophisticated network analysis, using IMD's rich rainfall data, revealed active nodes following the 'highway' for more than a century.
- The lengths between nodes, indicating the scales of synchronicity, have remained nearly constant, emphasising the stability of this phenomenon.

Forecasting Implications
- The findings challenge the notion that stationary elements no longer exist in climate systems due to global warming. The monsoon's ability to synchronise heavy rain events and adhere to the 'highway' suggests a unique stability.
- The geographic trapping of synchronised extreme rainfall is likely linked to the mountain ranges along the west coast and across Central India. This hypothesis, when tested in models, could enhance forecast accuracy without necessitating increased model resolution and computational costs.
- The potential to reduce risks associated with large-scale extreme rainfall events, affecting agriculture, water, energy, transportation, and health, is significant. India, with robust modelling capacity and computational resources, is well-positioned to exploit this potential for improved forecasts and risk reduction.

NutGraf: *Amidst the dynamic changes in the Indian monsoon due to global warming, a recent study uncovers a consistent 'highway' hosting synchronised extreme rainfall events, offering potential improvements in understanding and forecasting.*

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MISCELLANEOUS

1. Henry Kissinger

- Recently declassified documents reveal that during the 1971 India-Pakistan war, U.S. President Richard Nixon and National Security Adviser Henry Kissinger broke the U.S. arms ban on Pakistan.
- The declassified documents were released by the National Security Archive of the U.S. to mark Kissinger's death and shed light on the 13 crucial days in December 1971.
- Documents from December 4, 1971, show that the U.S. administration believed the war began with India attacking Pakistan, and President Yahya Khan urgently appealed for military help.
- Kissinger suggested providing assistance through countries like Iran or Jordan, expressing concern about India overwhelming Pakistan.
- Nixon endorsed the idea, emphasising the need to prevent India from defeating Pakistan.
- The revelations shed light on the internal U.S. discussions during the 1971 war, including Nixon's concerns about U.S. bureaucracy supporting India and efforts to crack down on it.
- The declassified documents include the "Blood Telegram" from the U.S. Consul-General Archer Blood in Dhaka, which criticised the U.S. silence on the genocidal violence in East Pakistan.

2. X-ray Polarimeter Satellite

- The Indian Space Research Organisation (ISRO) plans to launch its first X-ray Polarimeter Satellite (XPoSat) to investigate the polarisation of intense X-ray sources.
- XPoSat represents a significant addition to space-based X-ray astronomy in India, introducing a novel dimension to X-ray studies.
- The satellite will be launched by the Polar Satellite Launch Vehicle (PSLV) from the Satish Dhawan Space Centre in Sriharikota, with the launch date yet to be disclosed.
- XPoSat is designed for observation from a low Earth orbit, carrying two scientific payloads capable of simultaneous studies of temporal, spectral, and polarisation features of bright X-ray sources.
- The primary payload, POLIX (Polarimeter Instrument in X-rays), will measure polarimetry parameters in the medium X-ray energy range of 8-30 keV, while the secondary payload, XSPECT (X-ray Spectroscopy and Timing), provides spectroscopic information within the energy range of 0.8-15 keV.
- The mission objectives include measuring X-ray polarisation and conducting long-term spectral and temporal studies of cosmic X-ray sources.
- XPoSat's mission life is expected to be approximately five years.

3. Exercise Milan

- The Indian Navy is preparing for its largest multilateral exercise, "Exercise Milan," scheduled for February 2024, with the participation of over 50 countries.
- The exercise reflects the significant expansion of the Navy's engagements and capacity to assist countries in the Indian Ocean Region (IOR) as the first responder and Preferred Security Partner.
- India conducts 17 multilateral and 20 bilateral exercises annually, showcasing its commitment to maintaining strong defence ties and fostering interoperability in the IOR.
- India has expanded assistance in capacity building to regional countries, offering platforms, training, and deploying Mobile Training Teams (MTT) overseas for capacity development.
- The Indian Navy has trained over 15,000 personnel from over 40 countries in the IOR to date.

4. Philippines sets up new monitoring base in South China Sea

Context: The Philippines inaugurates a new coast guard monitoring base on Thitu Island in the disputed South China Sea.
- Plans to enhance joint patrols with the U.S. and Australia to counteract China's actions in the strategic waterway.
- Escalation of high-seas face-offs raises concerns about a potential larger conflict involving the U.S.

Establishment of Monitoring Base:
- **Location and Purpose:**
  - The new monitoring base is situated on Thitu Island, occupied by Filipino forces.
  - It aims to enhance maritime surveillance and monitoring capabilities in response to increasing tensions in the South China Sea.
- **Key Features:**
  - The two-story centre is equipped with radar, ship-tracking systems, and other monitoring equipment.
  - Focus on monitoring China's activities in the disputed waters and addressing maritime challenges, including sea accidents.

Expansion of Joint Patrols:
- **Collaboration with the U.S. and Australia:**
  - The Philippines plans to expand joint patrols with the U.S. and Australia.
  - Joint efforts intended to counter China's perceived aggression and prevent further escalation of tensions.
- **Response to China's Actions:**
  - Described as a response to China's "pure bullying" in the South China Sea.
  - Joint patrols seen as a strategic move to assert regional security and protect Philippine interests.

Significance:
- **Regional Security Strengthening:**
  - The establishment of the monitoring base reflects the Philippines' commitment to strengthening regional security in the face of escalating tensions.
  - Enhanced surveillance capabilities contribute to the proactive monitoring of maritime activities.
- **Strategic Alliances:**
  - Collaboration with the U.S. and Australia underscores the importance of strategic alliances in addressing geopolitical challenges.
  - Joint patrols signify a collective effort to counterbalance China's influence in the region.

5. Chinese projects in Vietnam & Sierra Leone

Details:
- China, Vietnam weigh rail link through rare earths heartland
  - China and Vietnam are working on a possible significant upgrade of their underdeveloped rail links to boost a line that crosses Vietnam's rare earths heartland and reaches the country's top port in the north. The talks are part of preparations for a possible visit to Hanoi in the coming weeks by Chinese President Xi Jinping.
- Sierra Leone signs MOU with China firm for Freetown bridge
  - Sierra Leone has signed a memorandum of understanding with China Road and Bridge Corporation and Atepa Group's architectural firm to build an 8-km bridge with an estimated cost of about $1.5 billion.
  - The bridge will link the capital Freetown to the town of Lungi, which is an airport hub.

6. Harissa

Context: In the heart of Srinagar's old city, a silent revolution is underway as women defy centuries-old norms to enjoy Harissa, a traditional meat delicacy once exclusively reserved for men. This winter, women from the Kashmir Women's Collective are venturing into Harissa shops, challenging societal norms and redefining gender roles.

Issues:
- **Historical Gender Divide:** Harissa, a slow-cooked meat-and-grain delicacy, has been a male-exclusive breakfast tradition in Kashmir for centuries. Women venturing out for it was uncommon.
- **Cultural Perception:** The act of women leaving home at dawn to indulge in Harissa challenges deeply ingrained cultural perceptions and stereotypes regarding women's roles and public spaces.
- **Mental Blocks:** Overcoming mental barriers is a struggle for some women, as they fear judgment or disapproval from family members for participating in traditionally male-dominated activities.

Significance:
- **Symbol of Progress:** Women participating in Harissa consumption symbolizes a shift towards progressive thought in Kashmir, challenging traditional gender norms.
- **Community Integration:** The acceptance of women in Harissa shops reflects a changing societal attitude and the gradual breakdown of gender-based barriers in public spaces.
- **Camaraderie and Enjoyment:** Women emphasize the unique experience of having Harissa in the shop, citing the different atmosphere and camaraderie compared to home.

Solutions:
- **Promoting Inclusivity:** Initiatives like the Kashmir Women's Collective play a crucial role in promoting inclusivity and challenging gender-based restrictions.
- **Education and Awareness:** Promoting awareness about breaking stereotypes and encouraging open-mindedness is essential for societal transformation.
- **Creating Safe Spaces:** Establishing safe and welcoming environments in public spaces, like Harissa shops, encourages women to participate without fear of judgment

7. Malaria in India

Context: The World Health Organization's (WHO) World Malaria Report, 2023, reveals that in 2022, India accounted for a significant 66% of malaria cases in the Southeast Asia Region. The report underscores the prevalence of Plasmodium vivax, a protozoan parasite, as a major contributor to malaria cases in the region.

- Despite progress in preventive measures, the report indicates an alarming increase in malaria incidence, emphasizing the need for a comprehensive approach to address emerging challenges.

India's Dominance in Malaria Cases
- In 2022, India constituted 66% of malaria cases in the WHO Southeast Asia Region.
- Plasmodium vivax, responsible for nearly 46% of cases, emerges as a predominant protozoan parasite causing recurring malaria.
- The World Malaria Report highlights the specific burden on India, signaling the importance of targeted interventions.

Global Malaria Trends
- Globally, there were 249 million malaria cases in 2022, surpassing the pre-pandemic level of 233 million in 2019.
- Despite a 76% decline in malaria cases in the WHO Southeast Asia Region since 2000, the global scenario shows an overall increase.
- The report attributes this rise to disruptions caused by COVID-19, drug and insecticide resistance, humanitarian crises, resource constraints, and climate change impacts.

Climate Change and Malaria
- The report delves into the link between climate change and malaria, emphasizing the substantial risk it poses to malaria eradication efforts.
- Dr. Tedros Adhanom Ghebreyesus, WHO Director-General, highlights the need for a significant pivot in the fight against malaria, considering the impact of climate change.

Emerging Threats to Malaria Response
- The global malaria response faces challenges such as drug and insecticide resistance, resource constraints, delays in program implementation, and the aftermath of the COVID-19 pandemic.
- The report underscores the necessity for increased resourcing, strengthened political commitment, data-driven strategies, and innovative tools to counter these threats.

Significance
- The report highlights the urgency of addressing malaria in India and globally, emphasizing the need for innovative and adaptive strategies.
- The link between climate change and malaria underscores the interconnectedness of health and environmental challenges.

8. GIAN scheme

Context: The Global Initiative of Academic Networks (GIAN), envisioned by Prime Minister Narendra Modi to bring distinguished scholars from around the world to Indian universities, is set to resume its fourth phase after a temporary hiatus during the COVID-19 pandemic. With an investment of ₹126 crore, the initiative aims to enhance the academic landscape by facilitating foreign faculty to conduct courses in Indian institutions.

Financial Investment and Foreign Faculty Payments
- The Union government has allocated ₹126 crore to support foreign faculty's travel and honorarium under GIAN.
- Each foreign faculty member receives $8000 (₹7 lakh) for a week of teaching and $12,000 (₹12 lakh) for a two-week course.

Evaluation and Recommendations
- The National Institute of Educational Planning and Administration (NIEPA) recommended the continuation of GIAN after evaluating the scheme's impact.
- Data reveals that out of 2,101 approved courses, 193 were withdrawn, and 1,772 were successfully delivered till October 2023.

Course Delivery Statistics
- IITs hosted 39% of the courses, while NITs accounted for 24.6%, and State universities for 10.8%.
- State universities and smaller colleges need increased efforts to attract renowned faculty, as GIAN's impact has been more pronounced in well-funded institutions.

Geographic Distribution of Foreign Faculty
- U.S. academics constituted 41.4% (668) of the foreign faculty, followed by the U.K., Germany, Canada, France, Italy, Nordic countries, China, Japan, Taiwan, ASEAN countries, and others.
- Approximately 72,000 Indian students directly benefited from the expertise of foreign faculty.

Emphasis on Online Learning

● In the fourth phase, the Ministry emphasizes the importance of video recording and optional webcasting of lectures.
● The repository of GIAN lectures is planned to be accessible nationwide through an online consortium, enhancing learning opportunities for students and teachers.

9.   Crime against women

● According to the annual report of the National Crime Records Bureau (NCRB), Delhi is reported to be the most unsafe metropolitan city for women in India, recording an average of three rape cases daily.
● The Crime in India Report for 2022 shows Delhi recorded 14,158 incidents of crime against women, the highest among 19 metropolitan cities for the third consecutive year.
● The reported crimes include rape cases, incidents of kidnapping or abduction of women, cases of dowry deaths and incidents of cruelty by husbands or their relatives.
● Many incidents of rape and assault involve individuals who are known to each other, making it challenging for the police to prevent such incidents directly.
● Awareness drives and self-defence training camps conducted by the police to address the issue.
● The number of unreported cases has reportedly decreased, indicating increased registration of cases by women.
● The NCRB data also shows an uptick in overall crime, including crimes against children and senior citizens, as well as a doubling of cybercrime cases in 2022.

10.   Corporate bond market to more than double by 2030

● As per the report released by the credit rating agency, Crisil, the corporate bond market in India is expected to more than double to ₹100-120 lakh crore by March 2030 with regulatory interventions contributing to growth.
● The growth is attributed to factors such as increased capital expenditure, the attractiveness of the infrastructure sector, and the financialization of savings.
● The corporate bond market grew at a rate of 9% per annum in the last five years until March 2023, reaching ₹43 lakh crore.
● The growth in capital expenditure is expected to be driven by factors like high capacity utilisation, healthy corporate balance sheets, and a strong economic outlook.
● The corporate bond market is anticipated to finance a sixth of the estimated capital expenditure.
● Strengthening credit risk profiles for infrastructure assets, better recovery prospects and the ability to lend long-term are noted as factors supporting the growth of the corporate bond market.
● The report suggests relaxing investment restrictions on corporate bonds rated below 'AA' for insurance and pension funds and fortifying the credit default swaps market to further boost growth.

11.   Venezuelans claim Guyana region in vote

● Venezuelan electoral authorities claim that 95% of voters in a non-binding referendum approved the nation's territorial claim on a significant part of neighbouring Guyana.
● President Nicolas Maduro called it an "overwhelming victory for the 'Yes'" and sees it as the first step in a new historic stage in the struggle for territorial claims.
● The referendum has raised concerns about Venezuela's intentions over the disputed territory, particularly in Guyana and the wider region.
● Maduro hopes the outcome will strengthen Venezuela's claim to the oil-rich Essequibo territory, currently governed by Guyana.
● Guyana's President Irfaan Ali reassures citizens that his government is working to protect the country's borders and ensure safety.
● Guyana maintains that the border was established during the British colonial era and was confirmed in 1899 by a court of arbitration.

12.   One-third of all 2022 suicides were of daily wage earners, farmers, says NCRB report

● The National Crime Record Bureau's (NCRB) Accidental Deaths and Suicides in India (ADSI) 2022 report reveals over 1.7 lakh suicides in India, with nearly one-third being daily wage earners, agricultural labourers, and farmers.
● Crimes and atrocities against Scheduled Castes (SC) and Scheduled Tribes (ST) increased in Rajasthan, Madhya Pradesh, Chhattisgarh, and Telangana in 2022.
● Madhya Pradesh and Rajasthan are among the top five states with the highest incidents of crimes and atrocities against SCs and STs.
● Cases registered under the Unlawful Activities Prevention Act (UAPA) increased by about 25%, while sedition cases decreased due to the Supreme Court's decision to keep sedition cases in abeyance.
● Maharashtra, Tamil Nadu, Madhya Pradesh, Karnataka, Kerala, and Telangana reported the highest number of suicides in 2022.
● Causes for suicides included family problems, illness, drug abuse, alcohol addiction, and marriage-related issues, with dowry-related issues affecting a significant number of women.

13. Glaciers shrank 1 m a year in a decade: WMO

- The 2011-2020 decade, despite being the warmest recorded, witnessed the lowest number of deaths from extreme events, according to a report from the World Meteorological Organization.
- The WMO credits the improvement in early warning systems driven by advancements in forecasting and better disaster management for the decline in deaths.
- The report notes that the decade was the first since 1950 without a single short-term event causing 10,000 deaths or more.
- India saw improvements in cyclone forecasting, enabling better preparedness and evacuation measures.
- The report also highlights the visible recovery of the depleted ozone hole during the decade.
- Glaciers worldwide thinned by approximately 1 metre per year on average from 2011 to 2020.
- Greenland and Antarctica lost 38% more ice during the period compared to 2001-2010.
- The report emphasises the increased risks from extreme heat events due to human-caused climate change.
- Heatwaves led to the highest number of human casualties, while tropical cyclones caused the most economic damage.
- Public and private climate finance nearly doubled during the decade, but further increases are needed to meet climate objectives.

14. India provides $250 mn Line of Credit to Kenya

- India extended a $250 million Line of Credit for the modernization of agriculture in Kenya.
- Prime Minister Narendra Modi announced the initiative, emphasising joint military exercises and collaboration on counter-terrorism projects between India and Kenya.
- President William Samoei Ruto welcomed the Indian initiatives and described the Indian community in Kenya as a "bridge" between the two countries.
- Ruto noted that Indians residing in Kenya consider the country as their "first country."
- The agriculture Line of Credit is intended for projects that will be taken up subsequently.

15. AICTE to regulate BBA and BCA programmes with curriculum vetted by experts

- The All India Council for Technical Education (AICTE) will regulate undergraduate courses such as Bachelor of Business Administration (BBA) and Bachelor of Computer Application (BCA) from the academic year 2024-25.
- The AICTE released a new approval process handbook for the period from 2024-25 to 2026-27, covering undergraduate and postgraduate programs.
- The new handbook includes provisions for the extension of approval for well-performing institutions, reduction in compliances related to land documents, and no-objection certificates from affiliating universities and states.
- The AICTE will introduce a new curriculum for undergraduate courses, vetted by experts across the country.
- The move expands AICTE's regulatory oversight to include BBA and BCA programs in addition to its existing regulation of postgraduate programs such as MBA and MCA.
- The AICTE is also introducing flexible study timings for working professionals in technical education to facilitate career advancement.
- Norms for granting autonomy to polytechnic colleges will also be implemented from the next academic year.

16. Hatti community

- The Hatti community announced a protest against the delay in the implementation of the law giving them the Scheduled Tribe (ST) status.
- The Constitution (Scheduled Tribes) Order (Second Amendment) Act, 2023, granting the ST status to the Hatti community was enacted 4 months ago, however, the state government has still not implemented it.
- The Hattis are a close-knit community settled along the borders of Himachal Pradesh and Uttarakhand.
- This community can be found in the river basins of Giri and Tons, which are tributaries of the Yamuna.
- They have the tradition of selling homegrown vegetables, crops, meat, wool, etc. at small markets called 'hatt' in towns.
- The Hattis are governed by a traditional council called 'Khumbli'.

17. RBI keeps repo rate at 6.5%

Context: The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) has maintained the key interest rates, keeping the repo rate at 6.5%.

Issues Addressed:
- **Unchanged Repo Rate:**
  ○ The MPC decided to keep the key repo rate unchanged at 6.5%, offering no immediate relief to borrowers.
  ○ Despite the moderation of food inflation from double-digit levels to 6.2% in October, uncertainties persist, especially related to food prices.
- **GDP Growth Projection:**
  ○ The committee revised the GDP growth projection for 2023-24 to 7%, reflecting confidence in economic recovery.
  ○ The upward revision signals optimism about India's economic performance, albeit amidst global uncertainties.
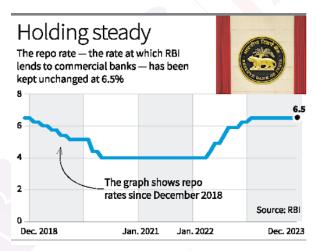- **Inflation Concerns:**
  ○ While acknowledging progress in bringing inflation below 5%, the RBI Governor highlighted the challenge of reaching the 4% inflation target.
  ○ Inflation, influenced by supply shocks, remains a concern, with potential spikes expected in November and December.

Significance of the Decision:
- **Cautionary Approach:** The cautionary stance on inflation spikes emphasizes the need for vigilance, particularly in managing food inflation.
- The RBI recognizes the importance of preventing isolated shocks from becoming generalized and impacting overall inflation trends.

Maintaining Prolonged Pause:
- The RBI is expected to continue a prolonged pause on the monetary policy rate until August 2024.
- A pivot is anticipated thereafter, contingent on improved visibility regarding the durability of achieving the 4% inflation target.

Source: The Hindu

18. Private member's bill

Context: In a significant development, a private member's Bill was introduced in the Rajya Sabha, addressing the issue of the accountability of Governors in India. Moved by CPI(M) MP, the Bill aimed to confer powers upon State Assemblies to remove Governors.
- The parliamentary discussion on this proposal sparked a broader conversation on the need for a system ensuring the accountability of Governors, who hold a crucial constitutional position.

Issues Addressed:
- **Accountability of Governors:**
  ○ The primary concern revolves around establishing a system to fix the accountability of Governors, ensuring they enjoy legitimate support and are answerable to the people of the State.
  ○ The Bill contends that the current practice of appointing the Head of State governments through executive orders is contrary to democratic and federal principles.
- **Democratic Appointment Process:**
  ○ The Bill proposes amendments to the Constitution, advocating that Governors should be elected by an electoral college.

○ The electoral college would comprise Legislative Assemblies of the States, along with elected members of gram panchayats, municipalities, and corporations within the States.
● **Proportional Representation and Secret Ballot:**
  ○ The proposed election process for Governors advocates proportional representation through the single transferable vote system.
  ○ Emphasizing transparency, the Bill suggests that voting in such elections should be conducted through a secret ballot.

Significance of the Bill:
● **Preserving Federal Rights:**
  ○ The Bill, supported by several Opposition members, underscores the necessity for parliamentary intervention to safeguard the federal rights of States.
  ○ It seeks to address concerns related to the appointment process, emphasizing the importance of a democratic and transparent approach.
● **Legitimacy and Dignity of Governor's Office:**
  ○ The statement of objects and reasons in the Bill emphasizes that the stature and dignity of the Governor's office require the occupant to have the legitimate support of the people.
  ○ By advocating an electoral college approach, the Bill aims to enhance the legitimacy of the Governor's position.
● **Promoting Democratic Principles:**
  ○ The proposed amendments align with democratic principles, emphasizing the need for elected representatives to play a role in the appointment of Governors.
  ○ Proportional representation and secret balloting further reinforce democratic ideals in the process.

19. Centre bans onion export & revises wheat stock limit

Context: The Union government has imposed a ban on the export of onions until March 31, 2024, to control rising local prices. This decision, communicated by the Directorate General of Foreign Trade (DGFT), has led to protests by farmers in Nashik, Maharashtra.
● Additionally, the Centre has revised wheat stock limits to curb inflation and hoarding. These developments mark significant interventions in agricultural policies, sparking reactions from various stakeholders.

Onion Export Ban:
● **Government Directive:**
  ○ The DGFT, in an order, amended the export policy of onions, shifting it from free to prohibited until March 31, 2024.
  ○ The move comes after a previous imposition of a 40% duty on onion exports until December 31, aiming to boost domestic availability and mitigate rising prices.
● **Protests in Nashik:**
  ○ Farmers in Nashik protested the ban, blocking the Mumbai-Agra National Highway and disrupting onion auctions at key markets.
  ○ The farmers argue that the ban would negatively impact them, leading to road blockades with tractors and redirection of onion-laden vehicles.
● **Impact on Farmers:**
  ○ Protesters claim that the ban is untimely, as onion prices have recently decreased, and the decision could lead to losses for farmers.
  ○ They demand direct government sales without intermediary involvement, blaming middlemen for artificial price inflation.
● **Call for Government Intervention:**
  ○ Farmers and traders associations plan to meet with government officials to express their concerns and seek support for revoking the onion export ban.

Wheat Stock Limits Revised:
● **Government's Decision:**
  ○ In a separate move, the Centre revised wheat stock limits to manage food security, prevent hoarding, and curb speculation.
  ○ Limits for traders and wholesalers were reduced from 2,000 tonnes to 1,000 tonnes, and for retailers, the revised limit is five tonnes per outlet.
● **Increased Market Supplies:**
  ○ The government decided to increase supplies in the open market from three lakh tonnes to four lakh tonnes immediately.
● **Registration and Monitoring:**
  ○ Wheat stocking entities are required to register on the wheat stock limit portal and update stock positions weekly.
  ○ Non-compliance may result in punitive action under the Essential Commodities Act, 1955, emphasizing strict enforcement.

- **Ensuring Wheat Availability:**
  - Officials from Central and State governments will closely monitor the enforcement of stock limits to prevent artificial scarcity of wheat in the country.

Significance:
- **Addressing Food Security:** The government's decisions on onion exports and wheat stock limits aim to address concerns related to food security, pricing stability, and hoarding prevention.
- **Farmers' Livelihoods:** The protests in Nashik highlight farmers' concerns about the timing and impact of the onion export ban on their livelihoods.
- Direct government sales and support are seen as essential to mitigate potential losses.
- **Inflation Management:** The revised wheat stock limits and increased market supplies aim to manage inflation and ensure sufficient availability of essential commodities.

Way forward:
- Dialogue with Stakeholders
- Balancing Export Policies

20. CRISPR gene therapy for sickle cell disease

Context: The U.S. Food and Drug Administration (FDA) has granted approval to two gene therapies for sickle cell disease, marking a significant breakthrough in the treatment of this painful and inherited blood disorder.
- Lyfgenia from Bluebird Bio and Casgevy from Vertex Pharmaceuticals and CRISPR Therapeutics have been approved, with Casgevy being the first treatment based on the CRISPR gene editing technology.
- Both therapies are intended for individuals aged 12 years and older.

Breakthrough Therapies:
- **Lyfgenia by Bluebird Bio:**
  - One of the approved gene therapies for sickle cell disease.
  - Represents a significant advancement in treating the debilitating blood disorder.
- **Casgevy by Vertex Pharmaceuticals and CRISPR Therapeutics:**
  - Utilizes CRISPR gene editing technology, a groundbreaking approach acknowledged with the Nobel Prize in 2020.
  - Marks a milestone in the use of gene editing for medical purposes.

Sickle Cell Disease Overview:
- **Prevalence and Impact:**
  - A painful, inherited blood disorder affecting approximately 100,000 people in the U.S., predominantly in the Black community.
  - Can lead to debilitating symptoms and premature death.
- **Mechanism of Sickle Cell Disease:**
  - Results in the production of flawed, sickle-shaped haemoglobin, impairing the oxygen-carrying capacity of red blood cells.
  - Sickle cells can clump together, causing blockages in small blood vessels, intense pain, and complications such as strokes and organ failure.

Therapies and Approval:
- **Lyfgenia and Casgevy Approval:**
  - Both gene therapies granted FDA approval for individuals aged 12 years and older.
  - Represent significant progress in treating sickle cell disease.
- **CRISPR Gene Editing Technology:**
  - Casgevy, a collaboration between Vertex Pharmaceuticals and CRISPR Therapeutics, employs the Nobel Prize-winning CRISPR gene editing technology.
  - Signifies a groundbreaking approach to addressing genetic disorders.
- **Treatment Outlook:**
  - Pitched as One-Time Treatments: Both therapies presented as one-time treatments.
  - Limited data on the duration of their effectiveness, with a bone marrow transplant currently being the only longer-term treatment for sickle cell disease.

Significance:
- **Breakthrough in Sickle Cell Treatment:** Approval of gene therapies, particularly the CRISPR-based Casgevy, represents a breakthrough in the treatment of sickle cell disease.
- Offers hope for improved management and potential transformative impact.
- **Addressing Racial Disparities:** Significant for the Black community, which is disproportionately affected by sickle cell disease.
- Represents a step toward addressing racial disparities in healthcare.

21. Green Turtles

Context: The impact of climate change on marine ecosystems is a growing concern, with sea turtles being particularly vulnerable due to their dependence on incubation temperatures for offspring sex determination.

- A recent study in Scientific Reports reveals that rising global temperatures may significantly expand the nesting range of green turtles in the Mediterranean Sea, posing both opportunities and challenges.
- The study predicts a potential 60% increase in the green turtle nesting range in the Mediterranean Sea.

Climate Change and Sea Turtles:
- Human-induced climate change has led to a global increase in sea surface temperatures.
- Sea turtles, especially green turtles, are vulnerable as the sex of their offspring depends on incubation temperature.

Lack of Research in the Mediterranean:
- Limited research on the impact of climate change on the green turtle population in the Mediterranean.
- Previous studies focused on global populations but neglected specific concerns in the Mediterranean Sea.

Predictive Model and Factors:
- Researchers developed a model to predict the suitability of Mediterranean coastline points for green turtle nesting.

Impact on Marine Life:
- Expansion of nesting range offers opportunities for green turtles but raises concerns about human interaction.
- Increased contact with urbanized beaches and human activities could negatively affect nesting success.

Environmental Consequences:
- Climate-induced shifts may disrupt existing ecological balances in the Mediterranean.
- Urbanization and human activities along the expanded nesting range pose threats to both turtles and coastal ecosystems

22. Google Gemini

Context: Google's recent unveiling of Gemini, its AI model, marks a significant move in response to the strides made by OpenAI with ChatGPT. This race reflects the intense competition in the AI domain, with both companies vying for supremacy in the evolving era of AI applications.

Google's Catch-up Game:
- Google, historically known for aggressive AI research, faced challenges catching up with the advancements of OpenAI, particularly after the release of ChatGPT.
- CEO Sundar Pichai declared a 'Code Red' situation, prompting the involvement of Google founders Sergei Brin and Larry Page.

Gemini's Unique Features:
- Gemini is Google's response, designed to understand not just text but also images and audio.
- Trained on Google's extensive multimodal data, it offers a more comprehensive form of intelligence, challenging traditional language models.

Multimodal Approach – Natively Multimodal:
- Unlike standard approaches, Gemini is "natively multimodal," trained on multiple modalities from the ground-up.
- This approach challenges the conventional method of training different components for distinct modalities.

Impressive Capabilities:
- Gemini's demo videos showcase impressive capabilities, such as recognizing incomplete dot-to-dot pictures and tracking objects in real-time.
- Reactions suggest that Gemini's multimodal abilities exceed those of existing AI models.

Tensor Processing Units (TPUs):
- Google's use of in-house-designed TPUs for training Gemini sets it apart from models relying on GPUs.
- This move is particularly notable amid ongoing GPU shortages affecting AI model development.

Gemini's Ecosystem Integration:
- Gemini is deeply integrated into the Google ecosystem, making it a more product-oriented model.
- The three variants – Nano, Pro, and Ultra – cater to different platforms, emphasizing versatility.

23. China's consumer prices fall further

Context: China faces economic challenges as recent data reveals a sharp decline in consumer prices, the fastest in three years, and deepening factory-gate deflation.

Issues:
- **Consumer Price Index (CPI) Decline:**
  - China's CPI dropped 0.5% year-on-year and month-on-month in November, the steepest decline since November 2020.
  - Weaker-than-expected consumer prices raise doubts about the economic recovery and indicate persistent sluggish demand.

Factors Contributing to Decline:
- **Three main factors behind the alarming CPI data:**
  - Falling global energy prices.
  - Fading winter travel boom.
  - Chronic supply glut.
- **Producer Price Index (PPI) Contraction:**
  - PPI fell 3% year-on-year in November, marking the 14th consecutive month of decline and the quickest since August.
  - The decline in PPI suggests challenges in the manufacturing sector and ongoing deflationary pressures.

24. Scarborough Shoal

Context: The Philippines accused the Chinese coast guard of using water cannons to "obstruct" three government boats delivering provisions to Filipino fishermen near a reef off its coast.

Details:
- The incident happened near the China-controlled Scarborough Shoal, a flashpoint between Manila and Beijing.
- The National Task Force for the West Philippine Sea said in a statement that "Chinese Coast Guard ships utilised water cannons to obstruct and prevent" government vessels from delivering fuel and food supplies to fishing boats.

25. Cauvery basin losing green cover

- A paper published by scientists and researchers at the Indian Institute of Science (IISc), Bengaluru, revealed that natural vegetation on almost 12,850 sq. km of land in the Cauvery basin was lost from 1965 to 2016.
- Karnataka accounted for three-fourths of the lost cover, while Tamil Nadu's share was around one-fifth.
- The study highlighted a 46% reduction in natural vegetation cover during the 50-year period, with a 35% decrease in dense vegetation and a 63% decrease in degraded vegetation.
- Adverse changes in forest cover were observed in areas such as the Brahmagiri Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, and the Cauvery Wildlife Sanctuary.
- The Bannerghatta National Park experienced a decline in moist deciduous forest area from 50% in 1973 to 28.5% in 2015 due to anthropogenic pressure.

26. Pinna nobilis seashell

- The noble pen shell clam, or pinna nobilis, which was on the verge of extinction due to a deadly pathogen spreading in parts of the Mediterranean around 2016, has made a comeback in waters off Croatia.
- The clam, once thought to be almost extinct in the Croatian waters, has seen a surge in numbers, with a diver spotting a group of 20 near the shore in the north of the Istria peninsula last year.
- About 100 young specimens were collected this year, indicating that the clams are still reproducing themselves.
- The noble pen shell clam plays an important ecological role by filtering sea water and supporting the flourishing of other organisms.
- Scientists are still investigating the cause of the comeback, and the Croatian government is funding further research.

27. Operation Storm Makers II

- Interpol's "Operation Storm Makers II," the first operation against fraud schemes fueled by victims of human trafficking, has uncovered evidence that the trend is expanding beyond southeast Asia.
- The operation resulted in the arrest of many individuals in various countries, focusing on charges such as human trafficking, passport forgery, corruption, telecommunications fraud, and sexual exploitation.
- A case registered by the Telangana police highlighted one of the first instances in India of human trafficking committed to force victims into cyber fraud schemes.

- The scams ranged from romance investment scams and crypto fraud to illegal gambling, and victims faced serious violations and abuses, including threats to safety and security, torture, cruel treatment, arbitrary detention, sexual violence, and forced labor.
- The scam syndicates generated billions of dollars in annual revenues, with tens of thousands of people involved in countries like Myanmar, Cambodia, Lao PDR, the Philippines, and Thailand.

28. Section 151A of RPA

- Section 151A of the Representation of the People Act, 1951 mandates the Election Commission to fill the casual vacancies in the House of Parliament and State Legislatures through bye elections within six months from the date of occurrence of the vacancy, provided that the remainder of the term of a member in relation to a vacancy is one year or more.
- The Bombay High Court addressed a petition challenging the Election Commission's decision not to conduct a bypoll for Pune Lok Sabha constituency after the demise of MP Girish Bapat on March 29.
- The Election Commission cited logistical constraints and preparations for the 2024 Lok Sabha elections as reasons for not conducting the bypoll promptly.
- The court criticised the Election Commission's stance as "hardly tenable" and expressed understanding for logistical challenges in areas with unrest but found it unjustified for Pune.
- The court directed further examination after highlighting instances of elections conducted in other constituencies this year after vacancies arose, challenging the EC's logistical constraints claim.
- The petitioner argued that delaying the bypoll was a violation of the electorate's right, emphasising Section 151A, which mandates filling a vacancy through a bypoll within six months.
- The court scheduled further examination of the matter on December 13, indicating scrutiny of the Election Commission's justifications and adherence to Section 151 A's requirements.

29. Road fatalities rise in India, despite global drop: WHO

- According to the 'Global Status Report on Road Safety 2023' by the World Health Organization (WHO), road traffic deaths worldwide fell by 5% to 1.19 million annually between 2010 and 2021.
- India, however, recorded a 15% increase in road traffic fatalities during the same period, with the total number rising to 1.54 lakh in 2021 from 1.34 lakh in 2010.
- The report highlighted that road crashes were the leading cause of death among children and youth aged five to 29 years as of 2019.
- 10 countries, including Belarus, Denmark, Japan, and the United Arab Emirates, reduced road traffic deaths by over 50%.
- 35 countries made notable progress, achieving a reduction of road traffic deaths by 30% to 50%.
- The global road fatality rate declined from 18 per 1 lakh people in 2010 to 15 per 1 lakh in 2021, representing a 16% decline in the road traffic death rate since 2010.
- The WHO's South-East Asia Region accounted for 28% of global road traffic deaths, followed by the Western Pacific Region (25%), the African Region (19%), the Region of the Americas (12%), the Eastern Mediterranean Region (11%), and the European Region (5%).
- Nine in 10 road traffic deaths occur in low- and middle-income countries, where the risk of death is three times higher than in high-income countries, despite low-income countries having just 1% of the world's motor vehicles.

30. 'Panel on security defunct for five years; Opposition MPs raise concern

- Opposition members in India have raised concerns over security arrangements at the new Parliament building following incidents of political sloganeering during a Special Session.
- Despite requests, the Joint Parliamentary Committee on Security in Parliament Complex has not been reconstituted during the 17th Lok Sabha.
- Opposition MPs complain of alleged political bias in providing visitors' gallery passes and an increased presence of private security guards on the Parliament premises.
- The new Parliament has a five-tier security arrangement for visitors, and the Opposition walked out of the Rajya Sabha seeking an explanation from the government.

31. European Union agrees to open membership negotiations with Ukraine

- The European Union has decided to open accession negotiations with Ukraine and Moldova.
- European Council President Charles Michel described it as "a clear signal of hope for their people and our continent."
- Ukrainian President Volodymyr Zelenskyy welcomed the decision, calling it "a victory for Ukraine and for all of Europe."
- Hungarian Prime Minister Viktor Orban is the lone standout, insisting that the EU should not start talks on Ukraine joining the bloc. He is also blocking €50 billion ($54 billion) in financial aid for Kyiv from the EU budget.
- Orban signalled that he could support long-term aid outside the EU budget, opening the door for a possible deal on that front.
- Ukraine is in critical need of support in its ongoing conflict against Russia, and the EU decision is significant for its future.

32. Activist Ali Abu Awwad and pianist Daniel Barenboim win Indira Gandhi Peace Prize

- Daniel Barenboim and Ali Abu Awwad have been named the winners of the Indira Gandhi Prize for Peace, Disarmament, and Development for 2023.
- Barenboim, an Argentine-born classical pianist and conductor, is recognized for his efforts in using music to foster harmony in the Israel-Palestinian conflict. He established the West-Eastern Divan Orchestra and the Barenboim-Said Akademie.
- Ali Abu Awwad, a Palestinian peace activist, has worked tirelessly for a peaceful resolution of the conflict. He co-founded the local initiative Roots, promoting understanding, non-violence, and transformation.
- The international jury, headed by former Chief Justice of India T.S. Thakur, praised their efforts in bringing together the youth and people of Israel and the Arab world for a non-violent resolution of the conflict.
- Barenboim and Awwad's work focuses on fostering social and cultural understanding, peaceful public cooperation, and dialogue through the tools of music and people's participation.

33. 'India's fastest' solar-electric boat launched

- The Barracuda, claimed to be India's fastest solar-electric boat, was launched at the Navalt Solar and Electric Boats yard in Alappuzha.
- Designed by Navalt, the Barracuda is a vessel with a top speed of 12.5 knots (23 km/h) and a range of seven hours on a single charge.
- The boat features twin 50 kW electric motors, a marine-grade LFP battery, and 6 kW of solar power. It is capable of navigating through waves as tall as four metres.
- The Barracuda is designed as a workboat for ferrying up to 12 passengers and cargo. It operates without noise, vibration, and air pollution.
- Mazagon Dock Limited, for whom the vessel was built, plans to introduce the eco-friendly boat at its Mumbai dock.
- Navalt Solar and Electric Boats, based in Kochi, has received recognition for its contributions to eco-friendly maritime transportation, including winning the world's best startup award in the mobility and transportation category at the Berlin Start-Up Energy Transition Awards 2023.

34. Govt U-turn on ethanol production

Context: Government's reversal on the ban on using sugarcane juice for ethanol production. Flexibility granted to use both sugarcane juice and B-heavy molasses, capped at 17 lakh tonnes of sugar diversion in 2023-24.

Background and Reversal:
- **Initial Ban:**
  - A week earlier, the government banned the use of sugarcane juice and sugar syrup for ethanol production.
  - Industry sought a reversal of the decision.
- **Revised Decision:**
  - December 15: Government reverses the ban and allows the use of sugarcane juice and B-heavy molasses for ethanol.
  - Sugar diversion capped at 17 lakh tonnes for the 2023-24 supply year.

Sugar Production Challenges:
- Anticipated decline in sugar production to 32.3-33 million tonnes in 2023-24.
- Factors: Low cane production, recent rainfall affecting recovery, drought in Maharashtra and Karnataka.

Ethanol Blending Targets:
- Target of 15% blending of ethanol with petrol for the 2023-24 supply year.
- Achieved 12% blending in the previous supply year (2022-23).
- Industry's financial health.

Concerns and Demand:
- Industry faces difficulties due to low sugar prices, no sugar export, and ban on sugarcane juice for ethanol.
- Demand for a revision in ethanol prices to improve millers' financial health.

Export and Production Projection:
- India exported 64 lakh tonnes of sugar in the 2022-23 marketing year.
- Projected sugar production at 325 lakh tonnes in 2023-24 with potential diversion of 17-20 lakh tonnes for ethanol.

Investment and Risk:
- Industry invested ₹15,000 crore in the last three years for ethanol production capacity.
- The risk associated with the huge investment due to uncertainties in policies.

Ethanol Pricing Demands:
- Ethanol Price Revision: Demand to raise ethanol prices from ₹59 to ₹64 per litre for B-heavy molasses. C-heavy molasses price to be increased to ₹58-59 per litre from ₹49 per litre.

35. G7 ban on Russian diamonds

Context: G7 nations plan to block the entry of Russian diamonds into their markets.
- The restrictions will apply to diamonds of one carat and above from March 1, 2024, expanding to half a carat or lower from September with traceability systems.

India's Confidence and Engagement:
- **Assessment of Impact:**
  - Indian trade officials express confidence that the G7 diamond curbs will minimally disrupt India's diamond processing businesses.
  - Engagement with EU and G7 technical teams to address concerns and find solutions.
- **Characteristics of Russian Diamonds:**
  - Rough Russian diamonds are generally small.
  - Diamonds cut and polished by India are predominantly less than 0.5 carats.
  - Expected impact on India to be less than initially anticipated.
- **Importance of India in Diamond Processing:**
  - India polishes 90-95% of the world's diamonds.
  - Recognition by G7 of India's significance in the diamond industry.
  - India's interventions lead to adjustments in G7 plans.

36. Houthi attacks in Red Sea

Context: Yemen's Houthi rebels hit cargo ship in latest Red Sea attack.

Details:
- Yemen's Houthi rebels struck the Liberia-flagged cargo ship Al-Jasrah, causing a fire on deck in the latest of a near-daily series of attacks in the commercially vital waterway.
- The Iran-backed Houthis say they're targeting shipping to pressure Israel during its war with Palestinian Hamas militants in the Gaza Strip.

37. Essequibo region

Context: Venezuela and Guyana agree not to 'use force' to settle land dispute.

Details:
- The Presidents of Venezuela and Guyana pledged not to resort to force to settle the long-simmering and recently reheated dispute over the oil-rich Essequibo region.

38. Bodoland Territorial Region

Context: Recently, the Bodoland Territorial Region (BTR) of Assam launched a school to impart lessons on humanity and societal happiness. The trainees were taught how to remove conscious and unconscious biases and made aware of various laws related to social issues helping to increase self-awareness and understanding of others.

Bodoland Territorial region:
- The **Bodoland Territorial Region is an autonomous region in Assam constituted under the Sixth Schedule to the Constitution in 2003** after the signing of the Memorandum of Settlement by the Government of India, the Government of Assam, and the Bodo Liberation Tigers.
- It consists of areas from four districts – Baksa, Chirang, Kokrajhar, and Udalgiri in western and northern Assam.
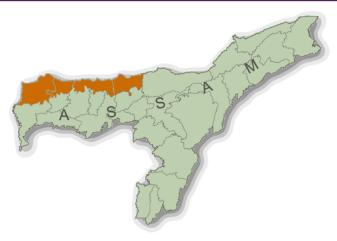
Figure: Bodoland Territorial Region
Source: bodoland.gov.in

Bodoland Territorial Council
- The Bodoland Territorial Region is administered by an elected body known as the Bodoland Territorial Council.
- The executive council of the Bodoland Territorial Council consists of not more than 14 members.
- The Chief and the Deputy Chief of the Council hold a status equivalent to that of Cabinet Ministers.
- **Bodoland Territorial Council Legislative Assembly:**
  - The Bodoland Territorial Council Legislative Assembly contains 40 elected members from 40 constituencies and 6 members nominated by the Governor of Assam from underrepresented communities.
  - The Bodoland Territorial Council has executive, legislative, administrative, and financial powers concerning subjects transferred to it.

39. Pangolin poaching

Context: Researchers based on genomic analyses have revealed illegal pangolin trafficking routes from origins in Africa to markets in Asia.

Pangolin:
- Pangolins are **primarily nocturnal mammals**. They are the **only mammals wholly covered in scales**, which they use to protect themselves from predators in the wild.
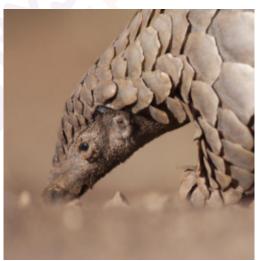

Figure: Pangolin
Source: WWF

- **Pangolins will curl into a tight ball,** if threatened, and use their sharp-scaled tail to defend themselves from predators.
- **They eat ants, termites, and larvae** and are often known as "the scaly anteater."
- They are poached mainly for their meat and their scales are used in traditional medicine and folk remedies.
- There are 8 species of Pangolins:
  - Four species of Pangolins live in Africa: White-bellied pangolin (Phataginus tricuspis), Black-bellied pangolin (Phataginus tetradactyla), Temminck's Ground pangolin (Smutsia temminckii) and Giant Ground pangolin (Smutsia gigantea).
  - Four species of Pangolins live in Asia: Indian pangolin (Manis crassicaudata), Sunda pangolin (Manis javanica), Chinese pangolin (Manis pentadactyla) and Philippine pangolin (Manis culionensis).
- The Indian pangolin is listed on CITES Appendix I and is listed as 'Endangered' on the IUCN Red List.

40. Global coal demand likely to decline 2.3% by 2026: IEA

Context: The International Energy Agency (IEA) anticipates a significant shift in global coal demand, projecting a 2.3% decline by 2026. Despite a record-breaking year in coal production, factors such as the rise of renewable energy and changing climate conditions are expected to reshape the landscape of the coal industry.

Issues
- **Regional Disparities**
  - Expected Increase: Global coal demand set to rise by 1.4% in 2023, surpassing 8.5 billion tonnes.
  - Regional Differences: While the European Union and the United States anticipate a 20% decline in demand, India and China foresee an 8% and 5% increase, respectively, driven by electricity needs and reduced hydroelectric power generation.
- **Climate Conditions**
  - Impact of El Nino and La Nina: IEA links the decline in coal demand to the shift from El Nino to La Nina conditions (2024-2026), suggesting improved rainfall and higher hydroelectric power output.
  - Renewable Energy Trends: Upward trend in low-cost solar photovoltaic deployment and moderate increases in nuclear generation contribute to the decline in coal demand.
- **Structural Decline**
  - Notable Shift: IEA Director notes that the decline appears more structural than previous instances, driven by sustained expansion of clean energy technologies.
  - Carbon Emissions: Coal remains a significant source of carbon dioxide emissions; reducing unabated coal use is a crucial aspect of international climate agreements.

Role of China
- Current Dominance: China accounts for over half of the world's coal demand.
- Future Projections: Expansion of renewable energy in China is expected to lead to a decline in coal demand in 2024 and a plateau in 2026, contributing to the global decrease.

Turning Point
- Structural Shift: The anticipated decline marks a turning point for coal, influenced by the expansion of clean energy technologies.
- Renewable Expansion: The pace of renewables' expansion in key Asian economies will determine the trajectory, emphasizing the need for greater efforts to meet international climate targets.

41. Bhutan to have massive green city along Assam border

Context: Bhutan, under the leadership of King Jigme Khesar Namgyel Wangchuck, announces plans for a massive "international city" along the Assam border, known as the 'Gelephu Smart City Project.' Envisioned as an economic corridor connecting South Asia with Southeast Asia, the project aims to strengthen the idea of 'Ek Bharat Shreshtha Bharat.'

Economic Transformation
- Bhutan's Vision: King Wangchuck sees the period as one of awakening and economic transformation in South Asia.
- Acknowledgement: Expresses gratitude to PM Narendra Modi and the Indian Government for cooperation in the first India-Bhutan railway line.

Gelephu Smart City Project
- International City: Spanning over 1,000 sq. km on the Assam border, emphasizing environmental standards and sustainability.
- Economic Corridor: Aimed at connecting South Asia with Southeast Asia through India's northeastern states.

Special Administrative Region
- Legal Framework: Gelephu project to be a "Special Administrative Region" under different laws to facilitate international investment.
- Diversification: Intends to attract quality investment from specially screened international companies.

42. Indigenously built Unit-4 at Kakrapar attains criticality

Context: The fourth unit of the Kakrapar Atomic Power Project (KAPP) in Gujarat, a 700-MWe pressurized heavy water reactor (PHWR), achieved criticality, marking a significant milestone for Nuclear Power Corporation of India Ltd. (NPCIL). This indigenous nuclear power project is the largest of its kind built by NPCIL, emphasizing advancements in nuclear power generation.

Largest Indigenous Reactors
- 700-MWe Capacity: KAPP's units are the largest indigenous nuclear power reactors by NPCIL.
- Pressurized Heavy Water Reactors (PHWRs): These reactors use natural uranium as fuel and heavy water as a coolant and moderator.

Regulatory Compliance
- Atomic Energy Regulatory Board (AERB): Criticality achieved after meeting all conditions set by AERB.
- Nuclear Safety: NPCIL adheres to stringent safety standards for nuclear operations.

NPCIL Operations
- Operational Strength: NPCIL operates indigenous PHWRs with 220-MWe and 540-MWe capacities at other facilities.
- Industry Collaboration: Indian industries supplied equipment and executed contracts for the reactors.

43. PMLA accused can be given copy of grounds of detention within 24 hours: SC

Context: The Supreme Court, in a recent judgment, clarified that the Enforcement Directorate (ED) is not obligated to provide a copy of the grounds of detention to a person accused under the Prevention of Money Laundering Act (PMLA) at the time of arrest.
- The Bench, headed by Justice Bela M. Trivedi, asserted that the written communication of the grounds of arrest should be given within a "reasonable period," specifically within 24 hours of the arrest.

Issues Addressed by the Judgment
- Timing of Providing Grounds of Detention
  - The key issue revolved around whether the ED's action of not furnishing a copy of the grounds of arrest at the time of arrest violated Section 19 of the PMLA, 2002.
  - The debate questioned whether this non-communication amounted to a violation of Article 22(1) of the Constitution, safeguarding the right of a person in custody to be informed about the reasons for their arrest.
- Interpretation of Legal Compliance
  - The court clarified that the person accused, if orally informed about the grounds of arrest during the arrest and provided with a written communication within 24 hours, would fulfil the requirements of Section 19 of the PMLA and Article 22(1).

44. India's first winter Arctic expedition begins

Context: India embarks on its inaugural winter Arctic expedition, led by the Raman Research Institute (RRI), showcasing a pioneering scientific venture to the Arctic region.
- This expedition, flagged off by Earth Sciences Minister Kiren Rijiju, is poised to explore and characterize the radio frequency environment in the Svalbard region of the Arctic, with the aim of assessing its suitability for precision astronomy measurements.

Issues Addressed by the Expedition
- Characterization of Arctic Radio Frequency Environment
  - The primary objective is to conduct a comprehensive survey of the radio frequency environment in the Arctic's Svalbard region, particularly in Norway.
  - The lack of previous surveys in this area makes it a unique opportunity to understand the specific characteristics of the region's radio frequencies.
- Year-Long Presence at Himadri Research Station
  - The winter expedition serves as an initiative to maintain a year-long presence at India's research station, Himadri, in Svalbard, which has been operational since 2008.
  - Ensuring continuity in scientific exploration reinforces India's commitment to Arctic research.
  - At least 10 countries have set up permanent facilities at the International Arctic Research base in Ny-Ålesund, a small town above the 78th parallel N, about 1,200 km from the North Pole. The Svalbard group of islands is the closest human habitation to the North Pole.
- Multidisciplinary Scientific Objectives
  - The RRI team, comprising four scientists, will conduct experiments spanning astronomy, climate change, and atmospheric science during the month-long expedition.
- Exploration of Untouched Radio Frequency Survey
  - The survey of the radio frequency environment in the Arctic is unprecedented for this site and holds the potential to unveil new insights.
  - The findings could open avenues for deploying low-frequency radio telescopes in the Arctic, enhancing the region's significance in astronomical observations.
- Advancing Cosmological Studies with SARAS
  - The expedition aligns with the RRI's decade-long efforts in developing the Shaped Antenna Measurement of the Background Radio Spectrum (SARAS) series of experiments.
  - SARAS focuses on studying the faint cosmological signal from hydrogen, known as the 21-cm signal, providing insights into cosmic dawn and the epoch of reionization.

- Understanding Cosmic Dawn and Epoch of Reionization
  - Cosmic dawn signifies the birth of the first stars and galaxies in the universe, crucial phases during its early evolution.
  - Lack of previous observations has hindered the understanding of these cosmic periods, and the expedition aims to fill these knowledge gaps.
- Challenges Due to Urbanization and Radio Frequency Interference (RFI)
  - Rapid urbanization has limited suitable spaces for cosmological studies.
  - The biggest limitation in achieving the required sensitivity is Radio Frequency Interference (RFI).

45. House panel doubts Centre's data on lumpy skin disease

- The Parliamentary Standing Committee on Agriculture, Animal Husbandry, and Food Processing questioned the accuracy of the Union Animal Husbandry Ministry's data on lumpy skin disease (LSD) affecting cattle and buffaloes.
- The committee noted a gap/mismatch in the number of cattle affected and dead, raising concerns about the actual situation. Accurate data is crucial for understanding the gravity of the disease and implementing effective control measures.
- The panel recommended that the Centre ensure proper compilation of data related to the spread of LSD and cattle mortality. It emphasised the need for compensation schemes for farmers and cattle owners facing economic hardship due to cattle losses.
- LSD affected 23 states, with Rajasthan, Maharashtra, Gujarat, Punjab, Himachal Pradesh, Haryana, and Karnataka witnessing the highest number of deaths.
- The committee highlighted that several companies had acquired the technology to manufacture an indigenous live attenuated LSD vaccine from the National Research Centre on Equines.

46. States can borrow an extra ₹2 lakh crore this fiscal year

- The Finance Ministry indicated that states in India may have the option to tap approximately ₹2.04 lakh crore as additional borrowings over their net borrowing limits for the year.
- The Centre had earlier allowed 22 states to raise additional borrowings of nearly ₹61,000 crore this year, in addition to their net borrowing ceilings of 3% of Gross State Domestic Product (GSDP) as of October 27, 2023.
- The additional borrowing ceiling was provided to states that met pension liabilities by contributing to the National Pension System (NPS).
- States are also eligible to raise over ₹1.43 lakh crore based on the Ministry of Power's recommendations, linked to the Fifteenth Finance Commission's suggestion for an additional borrowing space as a performance-based incentive for power sector reforms.

47. Volcano in Iceland erupts after being preceded by thousands of earthquakes

- Volcano erupts in southwestern Iceland after weeks of rumbling.
- The eruption occurred 4 km from Grindavik, evacuated in November due to earthquakes.
- Iceland, sitting above a volcanic hotspot, experiences about 20 hours of darkness a day in December.
- Iceland averages eruptions every four to five years; Eyjafjallajokull eruption in 2010 was disruptive.
- The current eruption is not expected to release ash as it doesn't lie under water or ice.
- A volcanic range in Reykjanes Peninsula has erupted thrice since 2021, after being dormant for 800 years.

48. Sahitya Akademi announces awards; Requiem in Raga Janki best English work

- Sahitya Akademi awards for 2023 were announced for various languages.
- Neelum Saran Gour was awarded in English for "Requiem in Raga Janki," and Sanjeev in Hindi for "Mujhe Pahachaano."
- The jury recommended awards in 24 languages.
- Notable awards: Rajasekaran (Devibharathi) awarded for "Neervazhi Padooum," T. Patanjali Sastry for "Rameshwaram Kaakulu Marikonni Kathalu," and E.V. Ramakrishnan for "Malayala Novelinte Deshakalangal."
- Lakshmisha Tolpadi was awarded for the collection of essays "Mahabharatha Anusandhanada Bharathayatre" in Kannada.
- Swapnamay Chakrabarti was honoured for the novel "Jaler Upar Pani" in Bengali.
- Sahitya Akademi, founded on March 12, 1954, promotes literature in Indian languages under the Union Culture Ministry.

49. Bengaluru airport wins award at UNESCO's 2023 Prix Versailles

- Kempegowda International Airport's Terminal 2 (T2) in Bengaluru was recognized at UNESCO's 2023 Prix Versailles.
- T2 was awarded a special prize for interiors and declared one of the world's most beautiful airports.
- The World Judges Panel, chaired by fashion designer Elie Saab, announced the accolade.
- Prix Versailles emphasises intelligent sustainability, innovation, local heritage reflection, ecological efficiency, and social interaction values.

- T2 is named "Terminal in a Garden."
- Recognition highlights the architectural excellence and aesthetic appeal of the airport terminal.

50. India receives price bids for 26 Rafale jets, 3 submarines

- India received price bids from France for 26 Rafale-M carrier-based fighters and three additional Scorpene-class submarines.
- Rafale-M processed through an Inter-Governmental agreement; the submarine deal follows an earlier contract with Naval Group for six submarines manufactured by Mazagon Dockyard Shipbuilders Limited (MDL), Mumbai.
- France submitted a Letter of Acceptance for 26 Rafale-M jets, detailing pricing and other offer aspects.
- MDL submitted a commercial offer for three more Scorpenes to the Indian Navy.
- The Defence Ministry forms a costing committee for internal benchmarking of Scorpene deal value and the commercial offer from MDL would be opened after the internal benchmarking is complete.
- Defence Acquisition Council, chaired by Defence Minister Rajnath Singh, approved the Acceptance of Necessity (AoN) for 26 Rafale-M fighters and three additional Scorpene-class submarines on July 13.
- Procurement aims to fill the gap until the indigenous Twin Engine Deck-Based Fighter is inducted.

51. Centre approves deployment of CISF in Parliament complex

- Union Home Ministry approves deployment of CISF in Parliament complex after December 13 security breach.
- In-principle approval is given for the comprehensive deployment of CISF (Security Wing and Fire Wing) under Government Building Security (GBS) on a regular basis.
- Paramilitary forces are already deployed at other Central government buildings, airports, and Delhi Metro stations.
- Overall security in Parliament is administered by the Lok Sabha Secretariat.
- Parliament Duty Group (PDG), an armed component of CRPF, is deployed for armed intervention if needed.
- Parliament Security Service, under the Lok Sabha Speaker, holds overall responsibility for security.
- Decision aims to strengthen security protocols and prevent future breaches in the Parliament complex.

52. Government aims to set up 17,000 creches across India

Context: The Women and Child Development Ministry has unveiled plans to establish 17,000 creches in anganwadis across India under the 'Palna' scheme.
- This initiative aims to enhance daycare facilities for children of working women, facilitating women's participation in the workforce while ensuring the holistic development of their children.

1. **The 'Palna' Scheme**
   - Objective: Address the need for quality daycare facilities for children of working women.
   - Approach: Establishing safe and secure creches in anganwadis for nutritional, health, and cognitive development.
   - Enabling Employment: Empowering women across socio-economic groups to engage in gainful employment in both organized and unorganized sectors.
2. **Current Status and Approvals**
   - 5,222 creches approved so far.
   - Plans to deploy two additional creche workers in each anganwadi.
   - Consideration for the existing 13.87 lakh anganwadi and mini-anganwadi centres.
3. **Standard Operating Procedure (SOP)**
   - Release of a new SOP for anganwadi-cum-creche centers under the 'Palna' scheme.
   - Comprehensive framework covering administrative hierarchy, worker roles, responsibilities, and monitoring checklist.
4. **Impact on Women Workforce Participation**
   - Increase in women's workforce participation to 37% in 2022.
   - The Palna scheme aims to support women working in various sectors such as agriculture and construction.
5. **Minister's Vision**
   - Union Women and Child Development Minister Smriti Irani emphasizes the priority of reaching out to women in diverse occupations, providing economic opportunities while ensuring a safe environment for their children.

Significance
- **Empowering Working Women:** The initiative addresses the dual challenge of providing childcare support and empowering women to participate in the workforce.
- **Holistic Development:** The focus on nutritional, health, and cognitive aspects ensures the overall well-being of children in the creches.
- **Increased Workforce Participation:** The Palna scheme aligns with the goal of increasing women's workforce participation, contributing to economic growth.

53. China bans export of rare earth technologies

Context: China, the world's top processor of rare earths, banned the export of technology to extract and separate the strategic metals, as it overhauled a list of technologies deemed key to national security.

Details:
- In December 2022, it planned to add the technology to its "Catalogue of Technologies Prohibited and Restricted from Export".
- It also banned the export of production technology for rare earth metals and alloy materials as well as technology to prepare some rare earth magnets.
- The move comes as Europe and the U.S. scramble to wean themselves off rare earths from China, which accounts for 90% of global refined output.
- Rare earths are a group of 17 metals used to make magnets for use in EVs and other electronics.

54. Centre exploring one-stop health sector regulator

Context: The Central government is exploring setting up a health sector regulator that will bring private and government health insurance schemes under its purview to facilitate affordable insurance coverage for all.

Details:
- The Ministries of Finance (MoF) and Health are in "initial discussions" over the need for a sector watchdog.
- The Association of Healthcare Providers India (AHPI), in a letter to the MoF, welcomed this saying "Making healthcare available, accessible, and affordable has been resolved by the present government. Penetration of private insurance is increasing at a fast rate and along with government-run insurance, India should soon be covering 70% of the population".
- Doctors' bodies have urged that private and government insurance be brought under a single regulator. Meaning, regulating government schemes like Pradhan Mantri Jan Arogya Yojana, the Central Government Health Scheme, Employees' State Insurance Corporation, etc.

55. UN approves watered-down resolution on aid to Gaza

Context: The United Nations Security Council approved a modified resolution aimed at expediting aid deliveries to civilians in Gaza. Notably, the resolution omitted the original provision calling for an "urgent suspension of hostilities" between Israel and Hamas, resulting in a revised text.

1. **Voting and Abstentions**
   - The resolution passed with a 13-0 vote, with the United States and Russia abstaining.
   - Earlier, a U.S. veto blocked a Russian amendment seeking to reinstate the call for a suspension of hostilities.
2. **Diplomatic Negotiations**
   - A week and a half of diplomatic efforts involving the United States, the United Arab Emirates, and others led to the revised text.
   - The negotiation process involved addressing concerns and finding common ground among council members.
3. **Stripped Provision**
   - The key provision calling for the "urgent suspension of hostilities" was removed from the resolution.
   - The revised text focuses on "urgent steps" for humanitarian access and creating conditions for a sustainable cessation of hostilities.
4. **Legal Implications**
   - Security Council resolutions are legally binding, but compliance varies among parties.
   - The absence of certain provisions may impact the resolution's effectiveness in influencing actions on the ground.
5. **Shift in Language**
   - The resolution marks a shift by being the council's first reference to stopping fighting, albeit with less assertive language.

56. No extreme curbs for now, will wait for NCR air quality to improve: Central body

Context: The Commission for Air Quality Management (CAQM) has announced its decision to hold off on implementing more stringent measures to combat rising pollution levels in the National Capital Region (NCR).
- This comes amid a deterioration in air quality, leading authorities to impose Stage 3 of the Graded Response Action Plan (GRAP).

1. **Current Measures and Restrictions**
   - Ban on Activities: Non-essential construction and demolition activities are currently prohibited.
   - Vehicle Restrictions: Plying of BS-III petrol and BS-IV diesel four-wheelers banned in Delhi and NCR districts.
   - Stage 3 GRAP: Imposed due to the severe category of air quality index (AQI) readings, which hover around 450.

2. **Factors Contributing to Pollution**
   - Meteorological Factors: Several meteorological factors, including slow wind speed, contribute to the rise in pollution levels.
   - AQI Reading: The current AQI reading falls into the severe category, prompting the imposition of Stage 3 GRAP.
3. **CAQM's Decision and Rationale**
   - Awaiting Impact: CAQM emphasizes the need to await the impact of existing restrictive actions on the average AQI.
   - Forecasts: Forecasts indicate a gradual improvement in air quality, influencing the decision to defer extreme curbs.
4. **Powers of CAQM**
   - The rulings by the Commission on air pollution will override anything contained in any other law.
   - The powers of the Commission will also supersede that of any other body in matters of air pollution.
   - The Commission will have the power to take measures, issue directions and entertain complaints "for the purpose of protecting and improving the quality of air in the National Capital Region".
5. **Seasonal Factors and Previous Restrictions**
   - Winter Impact: During winter, the slowdown in wind speed and temperature drop contribute to increased pollution in Delhi.
   - GRAP Stage 4: Earlier this year, Stage 4 restrictions were imposed due to stubble burning, but they were lifted after air quality improved.

57. Supreme Court rules that tribunals cannot direct government to frame policy

Context: The Supreme Court has issued a clarification asserting that tribunals, governed by their specific legislation, do not have the authority to direct the government to formulate policies. This directive came in response to a case involving the Armed Forces Tribunal (AFT) instructing the government to create a policy for filling the post of the Judge Advocate General (Air).

1. **Judicial Parameters of Tribunals**
   - Quasi-Judicial Nature: Tribunals, including the AFT, operate within the confines set by their governing legislation.
   - Limitation on Directives: Tribunals lack the authority to direct policymakers to create specific policies.
2. **Specific Case of the Armed Forces Tribunal (AFT)**
   - Nature of AFT: The AFT possesses powers akin to a civil court but does not have the extensive powers of the Supreme Court or High Courts.
   - Limitation on Policy Directives: The case in question involved the AFT directing the government to formulate a policy for the Judge Advocate General (Air) position.
3. **Precedents on Government Policy Directives**
   - Court Limitations: Judicial bodies, including High Courts, cannot mandate the government to create legislation or specific policies.
   - Prerogative of the Government: The creation or sanctioning of schemes or policies related to defense personnel services falls under the exclusive prerogative of the government.
4. **Writ Jurisdiction**
   - High Courts' Constraints: Even High Courts, exercising powers under Article 226, cannot compel the government or its departments to formulate particular policies.
   - Sole Government Prerogative: The judgment emphasizes that the government holds the sole authority to decide on schemes or policies concerning defense personnel.
5. **Fundamental Rights and Government Policies**
   - Court's Role: Courts, even with writ jurisdiction, may confront situations seemingly conflicting with fundamental rights but lack the power to direct policy formation.
   - Government's Prerogative: The formation of policies impacting fundamental rights remains within the government's exclusive domain.

58. A strategic choke point

Context: The Bab el-Mandeb, a narrow strait, has become a strategic chokepoint due to Houthi attacks on tankers passing through the Red Sea, escalating the conflict and impacting global shipping. This has prompted concerns about the security of one of the busiest shipping lanes globally.

1. **Background of Houthi Attacks**
   - Origins: Houthis, or Ansar Allah of Yemen, declared war against Israel in solidarity with Palestinians during the Israel-Hamas war in October.
   - Initial Targets: Houthis targeted Israel with drones and ballistic missiles, which were intercepted by U.S. warships or Israeli defense systems.
2. **Shift in Tactics**
   - Change in Strategy: In late November, Houthis, backed by Iran, shifted from targeting Israel to attacking commercial ships in the Red Sea.

- Broadened Targets: Initially focused on Israel-flagged ships, Houthis later expanded their targets to include all vessels passing through the Red Sea.
3. **Threat to Global Shipping**
   - Significance of Bab el-Mandeb: Houthis can target ships passing through the Bab el-Mandeb Strait, a vital link between the Red Sea and the Gulf of Aden.
   - Impact on Shipping: Between November 19 and December 18, there were 37 incidents, leading major shipping companies to suspend trade on Red Sea routes.
   - Economic Consequences: Shipping traffic through the Red Sea has decreased by approximately 35%, raising shipping and insurance costs.
4. **Geopolitical Significance**
   - Strategic Importance: Bab el-Mandeb, at its narrowest point, is 29 km wide and holds critical strategic importance as it separates the Arabian Peninsula from East Africa.
   - Historical Context: Historically, Britain controlled the Strait through its dominance of the island of Perim, ensuring the protection of shipping routes.
5. **Global Economic Impact**
   - Trade Routes: Approximately 12% of global seaborne trade passes through the Bab el-Mandeb, making it a crucial maritime passage.
   - Rerouting Challenges: Security concerns due to Houthi attacks led to rerouting traffic around Africa, significantly increasing shipping distances and times.
   - Inflationary Pressure: Prolonged disruption in Red Sea traffic could elevate inflationary pressures on the global economy.
6. **International Response**
   - U.S. Naval Task Force: The U.S. has formed a naval task force to counter the Houthi threat and protect shipping lanes.
   - Arab World's Stance: Red Sea countries, including Egypt, have chosen to stay out of the conflict, indicating discontent with the U.S.'s support for Israel.

About Bab-el-Mandeb Strait
- Bab-el-Mandeb Strait
- Also known as Gate of Tears in Arabic.
- Connects the Mediterranean Sea and the Indian Ocean via the Red Sea and the Suez Canal. It separates Africa from the Arabian Peninsula.
- A crucial shipping route connecting the Mediterranean Sea to the Indian Ocean.
- Vital for 30% of global container traffic.
- India is heavily reliant on this route for trade and energy (crude oil and LNG) imports.

59. Chum Salmon Migration

- Chum salmon are said to be anadromous, which means they hatch in freshwater streams and rivers and then migrate out to the saltwater environment of the ocean to feed and grow.
- However, scientists have recently discovered that these migrating fish have been spawning in uncharted waters.

60. RTI:CERT-IN exemption

- Computer Emergency Response Team (CERT-In) has been added to the list of organisations that are exempted from the ambit of the Right to Information Act (RTI), 2005.
- The CERT-In is the national nodal agency for responding to computer security incidents as and when they occur
- Exemptions- Section 8, Section 9, Section 24 (Schedule II)

61. Aspirational Block Programme

Overview
- Launched – 7th January'2023
- Focus - improving governance to enhance the quality of life of citizens and service delivery in the remotest and less developed blocks of India.
- Identification of 500 Blocks with Block Officers as 'Leaders of Change'

Major Themes
- Health & Nutrition
- Education
- Agriculture & Allied Services
- Basic Infrastructure
- Social Development

3 Cs of Strategy
- Convergence
- Collaboration
- Competition

62. Revanth govt. plans an onsite 'expose' into Telangana's Kaleshwaram project

Context: The A. Revanth Reddy-led Congress government in Telangana is set to expose alleged shortcomings and corruption in the Kaleshwaram project, previously undertaken by the Bharat Rashtra Samithi government. The exposure will be conducted through a PowerPoint presentation at the Medigadda barrage.

Issues with the Kaleshwaram Project
- Quality of Construction at Medigadda Barrage.
- Pillars caved a few days before elections, raising concerns about construction quality.
- Irrigation experts questioned the utility of the barrage despite massive funding.

Aim of the Presentation
- Share details on the advantages and disadvantages of the Kaleshwaram project.
- Key aspects to be addressed: project cost, additional cultivated acreage, new ayacut, stability of ayacut, construction quality, and power requirements for water pumping.

Participation of Stakeholders
- Instructions issued for the involvement of officials, construction agencies, contractors, and sub-contractors in the Kaleshwaram project for clarification.

Review of Sundilla and Annaram Barrages
- Ministers to review issues related to Sundilla and Annaram barrages, integral components of the Kaleshwaram project.

Transparency Measures
- Government aims for transparency by allowing media visits to the barrage site.

63. Tele communications Act gets Presidential assent

Context: President Droupadi Murmu has signed the Telecommunications Act, 2023, the Centre's long-discussed successor to the Telegraph Act of 1885 that has till now governed telecom services in India.

Details:
- Following the assent, rules to enact different Sections of the Act will be required.
- The Act largely leaves telecommunications law intact, while formalising certain practices such as reserving spectrum bands for different purposes and instituting dispute resolution measures for conflicts between licensed service providers and the government.
- It provides for newer ways for telecom operators to obtain permissions to set up their equipment in different States.

64. India-ASEAN to rejig 15 year trade pact in early 2024

Context: India and the Association of South East Asian Nations (ASEAN) are set to renegotiate their 15-year-old free trade agreement (FTA) in early 2024.
- The trade pact, officially known as the ASEAN India Trade in Goods Agreement (AITGA), will undergo modernization to address the substantial trade deficit currently favouring ASEAN. Despite India's long-standing request for a review, new negotiations are scheduled to commence in February.

Issues with the Current FTA
- **Trade Deficit:**
  - The trade deficit has surged from $7.5 billion annually at the pact's implementation to $43.57 billion in FY23.
  - India's exports to ASEAN in 2022-23 were $44 billion, while imports were $87.57 billion.
- **Disproportionate Benefits:**
  - India argues that the AITGA has disproportionately favoured ASEAN, prompting the need for a rebalancing of the agreement.

Significance of the Negotiations
- **Objective:**
  - The primary goal is to bring down the trade deficit and modernize the FTA to align with the current economic landscape.
  - New elements such as product-specific rules and trade remedies will be introduced.

- **Quarterly Schedule:**
  - ○ Negotiations will follow a quarterly schedule, aiming for completion by 2025.
- **Incorporating Changes:**
  - ○ Modernization includes changes in the Rules of Origin (ROO) to increase market access for India and prevent the re-routing of goods by China through ASEAN countries.
  - ○ Introduction of Product Specific Rules (PSRs) in the ROO chapter to relax rules for certain items and block circumvention by China.
- **Chapter on Trade Remedies:**
  - ○ A new chapter on trade remedies will be incorporated to provide a safety net for domestic industries against unfair trade practices or unforeseen surges in imports.

65. India, Russia ink 'key' pacts related to Kudankulam nuclear power plant

Context: India and Russia have strengthened their enduring partnership by signing crucial agreements related to the Kudankulam nuclear power plant.

Key Agreements and Partnerships
- **Kudankulam Nuclear Power Plant:**
  - ○ India's largest nuclear power plant located in Tamil Nadu.
  - ○ Construction commenced in March 2002 with technical assistance from Russia.
  - ○ The first power unit has been operational since February 2016, operating at a capacity of 1,000 MW.
  - ○ Full operational capacity expected by 2027, according to Russian state media.

Agreements Signed:
- Focus on future units of the Kudankulam nuclear project.
- Addressing crucial aspects of bilateral economic cooperation.
- Emphasis on nuclear power, medicines, pharmaceutical substances, and medical devices.

Russia as a Special Partner:
- India has described Russia as a "special partner" in defense, nuclear power, and space.
- Noted collaborations in areas like defense, space, and nuclear energy, underlining the importance of trust in such partnerships.

66. Ministry sends social media firms advisory to regulate deepfakes

Context: The Ministry of Electronics and Information Technology has issued a fresh advisory to social media firms, urging compliance with the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

Proliferation of Deepfakes:
- Increasing instances of fabricated 'deepfake' content on social media platforms.
- Challenges in identifying and addressing such content due to its deceptive nature.

Need for Regulatory Framework:
- The absence of specific regulations for deepfakes poses a challenge.
- Despite the announcement of future rules by IT Minister Ashwini Vaishnaw, no draft has been presented.

Communication of Prohibited Content:
- Difficulty in effectively communicating prohibited content, as outlined in Rule 3(1)(b) of the IT Rules, to users.
- Lack of clarity on how social media platforms should convey such information to users.

Legal Framework Reinforcement:
- The advisory reinforces the legal framework established by the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- Aims to ensure stricter adherence to the guidelines and rules by social media platforms.

User Awareness and Protection:
- Emphasis on clear and precise communication to users about prohibited content.
- Enhancing user awareness and protection against deceptive and harmful deepfake content.

Solutions
- Formulation of Specific Rules for Deepfakes
- Collaboration with Social Media Platforms
- Enhanced User Education

67. Ammonia leak in TN

Context: In a disconcerting turn of events, the residents of Ennore, north Chennai, faced a grave situation as ammonia gas leaked from an underwater supply pipeline connected to a fertilizer plant. The incident occurred following an oil spill triggered by a recent cyclone, compounding the environmental challenges in the region.

Issues
- **Industrial Accident Impact:**
  - Ammonia leak during the night caused widespread panic.
  - 52 individuals were admitted to the hospital due to health issues.
  - Residents reported burning eyes, facial discomfort, and difficulty breathing.
- **Evacuation and Displacement:**
  - Evacuation efforts were initiated, and hundreds of residents were moved to safer locations.
  - Industrial units' workers returning home faced challenges due to the location of the pipeline.
- **Fertilizer Plant Shutdown:**
  - The Tamil Nadu government ordered the temporary shutdown of Coromandel International Ltd., the fertilizer plant responsible for the ammonia leak.
- **Health and Environmental Impact:**
  - Immediate health implications on residents and workers.
  - Environmental concerns arising from the ammonia leak.

68. Japan's SLIM spacecraft

Context: Japan's Smart Lander for Investigating Moon (SLIM) has entered lunar orbit, poised for a groundbreaking moon-landing attempt on January 19. The significance of SLIM's mission extends beyond its national achievement, impacting India and Japan's joint Lunar Polar Exploration mission and influencing the upcoming Chandrayaan-4.

Factors Contributing to SLIM's Light Weight
- **Fuel Efficiency:**
  - SLIM's notably lower weight (590 kg at launch) is attributed to carrying less fuel compared to Chandrayaan-3.
  - Chandrayaan-3's propulsion module alone weighed 2.1 tonnes, emphasizing SLIM's more fuel-thrifty approach.
- **Longer Orbital Route:**
  - SLIM followed a longer but fuel-efficient route based on weak-stability boundary theory.
  - Orbital swings around the Earth allowed SLIM to accumulate kinetic energy, reducing the need for excessive fuel.
- **"Moon Sniper" Reputation:**
  - SLIM's standout feature is its precision, aiming to soft-land within 100 meters of the chosen site.
  - Contrasting with previous missions, SLIM's tight landing tolerance challenges conventional moon-landing parameters.
- **Lunar Surface Study:**
  - SLIM carries small rovers (Lunar Excursion Vehicles 1 and 2) for surface exploration, temperature and radiation readings, and moon mantle study.
  - SLIM's lower mass (120 kg excluding fuel) enhances manoeuvrability for precise lunar surface examination.

Impact on Chandrayaan-4
- **LUPEX Mission Overview:**
  - Chandrayaan-4, the Lunar Polar Exploration (LUPEX) mission, is a joint venture between India and Japan, set for a potential launch in 2026.
  - LUPEX aims to explore areas closer to the moon's South Pole, focusing on shadowed craters with water-ice deposits.
- **Technological Synergy:**
  - Technologies tested by JAXA with SLIM, including a feature-matching algorithm and navigation systems, are crucial for LUPEX.
  - SLIM's mission will provide valuable insights and innovations applicable to Chandrayaan-4's challenging terrain.

69. Uighurs in Xinjiang

Context: China sanctions U.S. research firm, 2 persons over reports on Xinjiang.

Details:
- China banned U.S. research company Kharon, its director and human rights analyst, who have reported on claims of human rights abuses committed against Uighurs and other Muslim minority groups in Xinjiang.
- Foreign Ministry spokesperson Mao Ning said the two individuals would be barred from travelling to China.

70. Huntington's disease

Context: Understanding the molecular progression of Huntington's disease is crucial for identifying mechanisms that could potentially halt its devastating impact. A recent study, published in Scientific Reports by researchers from the University of Szeged, Hungary, has made significant strides in this direction, employing an unexpected ally the fruit fly.

Huntington's Disease: A Devastating Path
- **Clinical Presentation:**
  ○ Initial symptoms include forgetfulness, loss of balance, and clumsiness.
  ○ Progression leads to mood swings, reasoning difficulties, jerky movements, and challenges in speech, swallowing, and walking.
  ○ The disease is fatal, with a genetic predisposition that puts the patient's offspring at risk.
- **Genetic Underpinning:**
  ○ The mutated HTT gene encodes an abnormal huntingtin (Htt) protein, crucial for normal nerve cell functioning.
  ○ Expansion of a DNA stretch in the HTT gene leads to an abnormal number of glutamine repeats, exacerbating the severity of Huntington's disease.
  ○ Fruit Flies as Molecular Investigators
- **Experimental Design:**
  ○ Researchers genetically engineered fruit flies to express the mutated human HTT gene, focusing on the polyglutamine tract.
  ○ The Gal4/UAS system from baker's yeast enabled precise targeting of the expression of the mutant Htt protein in the fruit fly's neurons.
- **Disease Modeling:**
  ○ Fruit flies expressing Htt proteins with 120 glutamine repeats exhibited neurodegeneration, impaired motor activity, and reduced viability.
  ○ A control group with Htt proteins containing 25 glutamine repeats showed minimal effects.

Key Findings and Yod1 Gene Intervention
- **Yod1 Gene Impact:**
  ○ Overexpression of the Yod1 gene mitigated disease-like effects in fruit flies, including neurodegeneration and motor impairments.
  ○ Yod1 gene overexpression correlated with increased expression of genes involved in specific cellular processes.
- **Potential Therapeutic Avenue:**
  ○ Identifying Yod1 as a suppressor of Huntington's-like pathogenesis in fruit flies suggests a potential avenue for therapeutic intervention.
  ○ The study emphasizes the need for further exploration to ascertain the applicability of these findings to humans.

71. Union Minister fails to break stalemate over SYL canal

Context: The Sutlej-Yamuna Link (SYL) canal has become the epicentre of a prolonged water-sharing dispute between Haryana and Punjab. The recent meeting chaired by Union Jal Shakti Minister Gajendra Singh Shekhawat failed to break the stalemate, indicating the deep-rooted issues surrounding this contentious matter.

Issues:
- Historical Dispute: The issue of the SYL canal has persisted for several years, highlighting a historical discord between Haryana and Punjab.
- Non-Compliance with Supreme Court Mandate: Despite a Supreme Court mandate for the construction of the SYL, Punjab remains resistant, exacerbating the legal and interstate tensions.
- Water Scarcity Claims: Punjab Chief Minister Bhagwant Mann contends that Punjab lacks surplus water to share, challenging the very premise of constructing the SYL canal.

Significance:
- **Legal Implications:** The Supreme Court's directive for the construction of the SYL canal underscores the legal significance of the issue, requiring compliance from all involved parties.
- **Water Security for Haryana:** Haryana emphasizes the vital role of the SYL in providing an alternative channel for water flow, addressing the excess water issue and ensuring water security for the state.

Solutions:
- **Affidavit Commitment:** The Punjab government's commitment to submitting an affidavit detailing the SYL and water situation is a positive step. This commitment aims to present a comprehensive case in the upcoming Supreme Court hearing.
- **Reassessment of Water Availability:** Punjab's call for a reassessment of water availability based on international norms can be explored as a cooperative solution. A transparent evaluation of water resources can provide a factual basis for negotiations

72. 82nd annual Indian History Congress

Context: The 82nd annual Indian History Congress commenced at Kakatiya University in Warangal, emphasizing the need for a scientific approach to interpreting the past. The gathering, hosted by Kakatiya University, underscores the significance of history as a secular discipline that can counter prevailing challenges.

Issues:
- **Challenges to Historical Objectivity:** The opening remarks by S.A.N Rezavi highlight the current threat of reducing history to mythology, emphasizing the pressing need to counter this trend.
- **Distortion of History:** The assertion that attempts are being made to disturb the past, break civilization, and divide people raises concerns about the distortion of historical narratives for ideological purposes.
- **Role of Historians:** The historical significance of the Indian History Congress is highlighted, especially in its role during critical moments such as the Emergency, where historians played a crucial part in opposing unfavorable actions.

Significance:
- **Secular Scientific Approach:** The Indian History Congress is presented as an advocate for a secular scientific approach to studying the past, countering attempts to manipulate history for political or ideological gains.
- **Defender of Values:** The Congress is portrayed as a defender of cherished values such as equity, equality, justice, secularism, humanism, democracy, and civil liberties as enshrined in the Constitution. These values are seen as under threat and questioned by forces antithetical to their essence.

Solutions:
- **Historical Vigilance:** The call for historians to remember and uphold their contribution in times of historical distortion and challenges implies a need for continued vigilance and active engagement in safeguarding the integrity of historical narratives.
- **Educational Initiatives:** Promoting a scientific approach to history within educational institutions is crucial to cultivating a nuanced understanding of the past. Initiatives that encourage critical thinking and objective analysis can contribute to countering historical distortions.

73. Women account for 49% of Ayushman cards, says Ministry

Context: The Ministry of Health has revealed encouraging statistics regarding the Ayushman Bharat Pradhan Mantri-Jan Arogya Yojana (AB PM-JAY), the world's largest publicly funded health assurance scheme. Data indicates that women constitute a significant portion of Ayushman cardholders and authorized hospital admissions, showcasing the scheme's inclusive reach.

Issues:
- **Representation:** Despite positive numbers, there may still be challenges in ensuring equitable representation across gender lines. Ongoing efforts are needed to address any potential gaps and ensure that all segments of the population benefit equally from the scheme.
- **Geographical Disparities:** While the scheme has made significant strides, there might be variations in its implementation across different states and union territories. Ensuring uniform coverage and accessibility remains a critical concern.

Significance:
- **Gender Inclusivity:** The fact that women account for nearly half of the Ayushman cards and authorized hospital admissions underscores the scheme's commitment to gender inclusivity in healthcare access.
- **Scale of the Scheme:** AB PM-JAY's status as the world's largest publicly funded health assurance scheme, covering 55 crore individuals and 12 crore families, highlights its monumental scale and impact on public health.
- **Empowered States and UTs:** The flexibility granted to states and union territories to expand the beneficiary base at their own cost showcases a decentralized approach, allowing regions to tailor the scheme to their specific needs.

Solutions:
- **Gender-Specific Outreach:** Implementing targeted outreach programs to ensure that women, especially in rural areas, are fully aware of and able to benefit from the Ayushman scheme. This could include awareness campaigns, health camps, and community engagement initiatives.
- **Addressing Regional Disparities:** The government should focus on addressing potential disparities in the implementation of AB PM-JAY across states and union territories. Regular monitoring and evaluation mechanisms can identify areas that need improvement, ensuring uniform access to healthcare services.
- **Continued Expansion:** Encouraging states and union territories to continue expanding the beneficiary base at their own cost can contribute to reaching more individuals and families in need.

74. Spectre of civil war in Sudan as civilians search for arms fearing rival militias

Context: The escalating conflict in Sudan, marked by the swift advances of the paramilitary Rapid Support Forces (RSF), is pushing civilians to arm themselves amid fears of a potential civil war. The RSF's aggressive campaign, capturing significant territories and facing accusations of human rights abuses, has triggered calls for armed resistance from civilians, amplifying concerns about the transformation of the conflict between rival generals into a full-blown civil war.

Issues:
- **RSF Advances:** The Rapid Support Forces, aligned with Army Chief Abdel Fattah al-Burhan, have made substantial territorial gains, including the capture of southern Al-Jazira State and the capital Wad Madani. Their continued push southwards into Sennar State has intensified the conflict.
- **Civilian Response:** Faced with the RSF's advances and growing allegations of abuses, civilians are responding by advocating for "armed popular resistance." This highlights the deepening mistrust between the population and paramilitary forces, potentially leading to a broader civil conflict.
- **Volunteer Recruitment:** The RSF's directive to residents in controlled areas to provide volunteers armed to "protect their territory" raises concerns about the militarization of civilian populations and the potential for further violence.

Significance:
- **Risk of Civil War:** The specter of a civil war looms large as rival generals, Abdel Fattah al-Burhan and RSF commander Mohamed Hamdan Daglo, continue to engage in a violent power struggle. The militarization of civilians and the RSF's territorial control heighten the risk of a broader conflict.
- **Humanitarian Crisis:** The ongoing violence, which has claimed over 12,000 lives and displaced at least 7.1 million people, exacerbates an already dire humanitarian crisis. The conflict is straining resources and hindering the delivery of aid to those in need.
- **International Implications:** The RSF commander's visit to Ethiopia and discussions with Prime Minister Abiy Ahmed underscore the international dimensions of the conflict. Efforts to secure peace and stability in Sudan are of regional concern and may have broader implications for neighboring countries.

Solutions:
- **International Mediation:** Urgent diplomatic efforts and international mediation should be employed to bring the conflicting parties to the negotiating table. The involvement of regional actors, including Ethiopia, could contribute to finding a peaceful resolution to the crisis.
- **Humanitarian Intervention:** The international community should prioritize humanitarian intervention to address the immediate needs of the affected population. Efforts should be made to ensure the safe delivery of aid and the protection of civilians caught in the crossfire.
- **Demilitarization Initiatives:** Initiatives aimed at demilitarizing civilian populations and discouraging the arming of civilians must be implemented to reduce the risk of widespread violence. International bodies should work towards the disarmament of non-state actors and the protection of civilian lives.

75. Indian Navy's new insignia

Context: The Indian Navy has unveiled new epaulettes for admirals, a move inspired by Prime Minister Narendra Modi's announcement during Navy Day celebrations in Sindhudurg on December 4.

Issues Addressed:
- **Colonial Legacy:** The use of British nomenclature for naval ranks reflects a colonial legacy, creating a need for a symbolic shift to assert India's identity and heritage.
- **Maritime Heritage:** The new epaulettes, drawing inspiration from Chhatrapati Shivaji Maharaj and the naval ensign, aim to reflect India's rich maritime heritage. This move aligns with the broader goal of embracing Bharatiyata and breaking free from the mentality of servitude.
- **Symbolism of Epaulettes:** The design features an octagon, Indian sword, telescope crossed, and stars indicating ranks, symbolizing a fusion of historical symbolism and modern rank distinctions.
- **Renaming Ranks:** The plan to rename ranks in line with Indian traditions is another step toward establishing a distinct Indian identity within the naval hierarchy.

Significance of the Initiative:
- **Cultural Assertion:** The adoption of new epaulettes and the renaming of ranks reflect a cultural assertion, emphasizing pride in India's heritage and a departure from colonial symbols.
- **Eliminating Servitude Mentality:** The move is framed as a rejection of the "Ghulami ki Maansikta," signifying a commitment to breaking free from the mindset of servitude and asserting independence.
- **Inspiration from Chhatrapati Shivaji Maharaj:** Prime Minister Modi's emphasis on Chhatrapati Shivaji Maharaj as an inspiration signifies a symbolic connection to a historical figure known for his maritime prowess and independent spirit.
- **Alignment with Bharatiyata:** The Navy's commitment to embracing Bharatiyata (Indianness) is highlighted, reinforcing the idea that the armed forces are rooted in Indian culture and values.

Source: The Hindu

76. X-37B

Context: SpaceX launches secretive U.S. spacecraft on a research mission.

Details:
- SpaceX's Falcon Heavy rocket blasted back into space to ferry the U.S. military's secretive X-37B drone for a research mission.
- The Pentagon said its experiments included "operating the reusable spaceplane in new orbital regimes and investigating the radiation effects on materials given by NASA".

Source: The Hindu

The mysterious X-37B
- The United States Department of Defence has disclosed very few details about the X-37B, which is built by Boeing.
- It is around the size of a small bus and has a design language that harkens back to the time of the space shuttle. It is built to deploy many different payloads and conduct technology experiments on years-long orbital flights.
- The craft is designed to come back through the atmosphere and land on a runway like an aeroplane.
- According to Boeing, the X-37B has avionics technology that automates all de-orbit and landing functions. There are no hydraulics on board and all flight controls and brakes are operated using electro-mechanical actuation.
- The plane is also built out of a space grade composite that is lighter than aluminium.

77. Argentina rejects BRICS membership

Context: Argentine President Javier Milei has formally rejected an invitation for Argentina to join the BRICS group, consisting of Brazil, Russia, India, China, and South Africa. The rejection comes amid the bloc's expansion, admitting six new members, including Argentina, with membership scheduled to commence on January 1, 2024. President Milei, known for his libertarian stance, expressed that the current time is not suitable for Argentina's participation in BRICS.

Issues at Hand:
- **BRICS Expansion:** The BRICS bloc, seeking to counter the Western-led global order, announced the admission of six new members, including Argentina. However, President Milei's rejection raises questions about the alignment and priorities of Argentina's foreign policy.
- **Resounding Political Shift:** President Milei's recent electoral victory marked a significant departure from Argentina's traditional political parties. The rejection of BRICS membership underscores a shift in the country's geopolitical stance.

- **Differing Foreign Policy:** President Milei's letters to BRICS leaders emphasize that Argentina's foreign policy under his administration differs significantly from the previous government. This indicates a reassessment of decisions made by the previous administration.
- **Alignment with the U.S. and Israel:** During his election campaign, President Milei asserted that Argentina's geopolitical alignment is with the United States and Israel, expressing a reluctance to ally with communist nations.

Solutions and Future Steps:
- **Clarity in Foreign Policy:** President Milei's administration should provide clarity on the specific aspects of Argentina's foreign policy that differ from the previous government. Clear communication will help manage international expectations.
- **Diplomatic Engagement:** Despite ideological differences, engaging diplomatically with BRICS nations on common interests and concerns can ensure that Argentina maintains cordial relations and explores opportunities for collaboration.
- **Balancing Alliances:** While expressing alignment with the U.S. and Israel, President Milei should carefully balance diplomatic relationships with other nations, acknowledging the importance of diverse partnerships in international affairs.

78. India closing in on lithium deal with Argentina

Context: India, through the Mines Ministry and state-owned Khanij Bidesh India Ltd (KABIL), is advancing towards a lithium deal with Argentina while simultaneously exploring opportunities in Australia and Chile. The draft exploration and development agreement with Argentinian miner CAMYEN and the non-disclosure agreement with Chilean miner ENAMI signal India's strategic move to secure a critical mineral—lithium—for its green energy initiatives.

Issues at Hand:
- **Lithium Acquisition Strategy:** India, driven by its green energy ambitions, is actively pursuing lithium acquisition opportunities globally. The focus on Argentina, Chile, and Australia reflects the critical role of lithium in the transition to renewable energy sources.
- **Import Dependency:** Currently, India relies heavily on imports to meet its lithium requirements, incurring a substantial import bill of approximately ₹24,000 crore. This exposes the country to supply chain vulnerabilities and underscores the need for domestic production.
- **Global Lithium Market Dynamics:** Latin American nations, particularly Chile and Argentina, contribute significantly to global lithium supplies. The exploration and development agreements with CAMYEN and discussions with ENAMI signify India's entry into a market dominated by these nations.
- **Strategic Importance:** Lithium, often referred to as 'white gold,' holds strategic importance for India's green energy transition. Acquiring lithium assets abroad aligns with India's efforts to secure a stable supply chain for critical minerals.

Significance of the Initiative:
- **Diversification of Suppliers:** By engaging with miners in Argentina, Chile, and Australia, India aims to diversify its sources of lithium, reducing dependency on a single region and enhancing supply security.
- **Global Collaboration:** The agreements with CAMYEN and discussions with ENAMI demonstrate India's commitment to global collaboration in securing critical minerals. This approach fosters diplomatic and economic ties with resource-rich nations.
- **Boost to Green Energy Transition:** As a vital component in batteries for electric vehicles and renewable energy storage, securing lithium resources is pivotal for India's green energy transition. Domestic production can significantly contribute to reducing the carbon footprint.

Solutions and Future Steps:
- **Cabinet Approval:** The reported cost of the acquisition in Argentina is substantial, and the proposal is slated for Cabinet approval. Securing necessary approvals ensures the smooth progression of the lithium acquisition strategy.
- **Domestic Auctions:** India should continue promoting domestic auctions for lithium blocks, facilitating private sector participation and ensuring a competitive and transparent process.
- **Investment in Exploration:** Collaborating with consultancy major PwC for the identification of investable projects in Australia indicates a strategic approach. Continued investment in exploration projects enhances India's chances of securing additional lithium sources.

79. Census postponed again

Context: The decennial Census in India, originally scheduled for 2020, faces another delay with the freezing of administrative boundaries extended until June 30, 2024. This postponement, the ninth in a series, raises concerns about the validity of current data influencing policy decisions, especially as the nation approaches the 2024 elections.

Issues:
- **Repetitive Postponements:** The Census, a critical exercise held every decade since 1881, has witnessed recurrent delays. Initially postponed due to the COVID-19 pandemic, subsequent extensions lack clear reasons, impacting the timely availability of essential data.

- **Implications for Policy Formulation:** Government agencies continue to formulate policies and allocate subsidies based on outdated 2011 Census data. The absence of fresh information hampers accurate planning and program evaluation across various sectors, including health, education, and family planning.
- **Constitutional Amendment Implications:** The 128th Constitution Amendment Act, 2023, mandates delimitation and the Census before implementing one-third reservation for women in Lok Sabha and Assemblies. The prolonged postponement risks further delays in implementing constitutional amendments.
- **Election Timing:** The current extension rules out the Census exercise before the 2024 elections, potentially influencing election-related planning and strategies.

Significance:
- **Data Validity Concerns:** The delay in conducting the Census raises concerns about the accuracy and relevance of data used for policy-making. Fresh demographic insights are essential for informed governance and effective allocation of resources.
- **Constitutional Mandate Delay:** The postponement affects the implementation of constitutional amendments, particularly those related to gender representation in legislatures. The postponement jeopardizes the timeline for introducing one-third reservation for women.
- **Policy Paralysis:** With crucial reports on vital statistics and medical certifications delayed, there is a risk of policy paralysis as decision-makers lack real-time information for evidence-based planning and interventions.

Solutions:
- **Streamlined Execution Plan:** The government must outline a comprehensive and streamlined plan for the Census, addressing logistical challenges and ensuring a timely start to the exercise. Transparent communication regarding the reasons for the delays is crucial.
- **Concurrent Data Releases:** To mitigate the impact of Census delays, government agencies should expedite the release of vital statistics reports, ensuring that decision-makers have access to the latest information for effective policy formulation.
- **Public Awareness:** Communicating the importance of Census data to the public can foster understanding and support for the process. Raising awareness about the implications of delayed Census results can generate public demand for timely execution.

80. Babbar Khalsa International

Context: The Union Home Ministry has declared Lakhbir Singh Landa, a Canada-based member of the Babbar Khalsa International (BKI), as an "individual terrorist" under the Unlawful Activities (Prevention) Act (UAPA). This move, citing his involvement in terror activities and cross-border supply of weapons, raises concerns about the international dimensions of terrorism impacting India.

Issues:
- **Cross-Border Terrorism:** Lakhbir Singh Landa, backed by a cross-border agency, is accused of carrying out a terror attack on the Punjab Police's intelligence headquarters and supplying weapons and explosives from across the border. This highlights the persistent challenge of cross-border terrorism affecting India's internal security.
- **Targeted Killings and Extortions:** The Ministry states that Singh and his associates have been conspiring to disrupt peace in Punjab through targeted killings, extortions, and other anti-national activities. The involvement of individuals residing abroad in such activities poses challenges for India's counter-terrorism efforts.
- **International Connections:** Designating Lakhbir Singh Landa as an "individual terrorist" underscores the global nature of terrorist networks. Cooperation with international agencies and effective mechanisms for extradition become crucial in tackling individuals involved in terrorism across borders.

Significance:
- **UAPA Designation:** The designation of Lakhbir Singh Landa as an "individual terrorist" under UAPA provides legal authority to take action against him. It empowers security agencies to track, apprehend, and prosecute individuals involved in terrorist activities.
- **International Cooperation:** The case emphasizes the importance of international cooperation in counter-terrorism efforts. Collaboration with Canada and other countries becomes essential to curb the activities of individuals residing abroad but involved in planning and executing attacks in India.
- **Deterrence:** Declaring individuals involved in terrorism as terrorists under UAPA serves as a deterrent. It sends a strong signal that individuals supporting or participating in terror activities will face legal consequences, even if they operate from foreign territories.

81. Indian Tamils in Sri Lanka

Context: BJP president J.P. Nadda released a commemorative stamp marking the 200 years of the arrival of Indian-origin Tamils in Sri Lanka. This gesture is a recognition of the historical ties between India and Sri Lanka and signifies the commitment to the welfare of the Indian-origin Tamil community.

Issues:
- **Historical Hardships:** The statement by BJP's Tamil Nadu unit chief, K. Annamalai, highlights the historical hardships faced by Indian-origin Tamils in Sri Lanka. These challenges include social, economic, and political struggles that have shaped their experiences over the years.
- **Recognition and Support:** The acknowledgment of the Indian government's commitment to supporting the Indian-origin Tamils in Sri Lanka is crucial. It points to the ongoing efforts to address the concerns and needs of this community, recognizing their unique identity and history.
- **Humanitarian Aid:** The mention of Prime Minister Narendra Modi's support to Sri Lanka during times of distress indicates India's role in providing humanitarian and financial aid. The assistance is not only political but also focuses on improving the lives of the Indian-origin Tamils through various projects and initiatives.

Significance:
- **Symbolic Gesture:** The release of the commemorative stamp is a symbolic gesture that marks the enduring connection between India and Sri Lanka. It signifies shared histories, cultural ties, and the importance of recognizing the contributions of the Indian-origin Tamils.
- **Commitment to Welfare:** The statement emphasizes the commitment of the Indian government, under Prime Minister Modi's leadership, to the welfare and development of the Indian-origin Tamil community. This commitment is reflected in sanctioned housing projects and other facilities aimed at improving their living conditions.
- **Diplomatic Relations:** The acknowledgment by the Governor of Eastern Province of Sri Lanka, Senthil Thondaman, underscores the positive diplomatic relations between India and Sri Lanka. Recognizing the efforts made by the Indian government enhances bilateral ties and fosters goodwill.

82. PM Ujjwala Yojana

Context: Prime Minister Narendra Modi, during his visit to Ayodhya, made a surprise visit to the home of Meera Manjhi, marking the 10th-crore beneficiary of the PM Ujjwala Yojana. This unexpected visit underscored the significance of the Ujjwala scheme, which aims to provide subsidised LPG connections to economically disadvantaged households.

Issues:
- **Household Energy Access:** The Ujjwala Yojana, launched in May 2016, addresses the issue of clean cooking fuel access for poor households. The scheme focuses on providing subsidised liquefied petroleum gas (LPG) connections, aiming to improve health outcomes and reduce deaths associated with unclean cooking fuel.
- **Empowerment of Women:** One of the key objectives of the Ujjwala scheme is to empower women. By facilitating access to clean cooking fuel, the scheme aims to enhance the well-being of women, protect their health, and contribute to a reduction in the drudgery associated with traditional cooking methods.
- **Improved Living Conditions:** Meera Manjhi's testimony highlights the positive impact of the Ujjwala Yojana on living conditions. The provision of free LPG cylinders and improved accommodation reflects the holistic approach of the scheme in addressing multiple aspects of beneficiaries' lives.

Significance:
- **Symbolic Visit:** Prime Minister Modi's surprise visit to Meera Manjhi's home symbolizes the government's commitment to directly connect with beneficiaries of its welfare schemes. It adds a personal touch to the policy implementation process, emphasizing the real impact on individuals and households.
- **Public Awareness:** The enthusiastic chants of 'Modi-Modi' and the subsequent social media post create awareness and publicize the success of the Ujjwala Yojana. Such visibility can encourage more eligible households to avail themselves of the benefits offered by the scheme.
- **Transformational Impact:** Meera Manjhi's transition from a kutcha house to a pucca one exemplifies the transformational impact of the Ujjwala Yojana. Beyond providing clean cooking fuel, the scheme contributes to improving overall living conditions, aligning with the government's broader development goals.

YOJANA DECEMBER 2023

1. India's Moonshot

- In the mid-1960s, the space programme of India was developed for scientific research and applications.
- The Indian Space Research Organisation (ISRO) is one of the top five space agencies of the world with full capabilities in Earth observation, communication, navigation, and planetary exploration.
- ISRO can launch payloads ranging from 500 to 8000 kg to low, medium, or high Earth orbit using its four operational launch vehicles.
- **PSLV (Polar Satellite Launch Vehicle):** Also known as "ISRO's workhorse", it provides a cost-efficient and reliable solution to commercial users for launching '2t class' payloads.
  - It is versatile, with a capability to launch multiple satellites in one flight into versatile geostationary orbits, has the ability to start and stop its **upper stage liquid engine**, and can host research in its PS4 orbital platform.
- **LVM3 (Launch Vehicle Mark-III)** formerly known as, Geosynchronous Satellite Launch Vehicle (GSLV) Mark-III, is a reliable choice for the commercial market to lift LEO and GEO payloads with 4t and 6t capacity, respectively.
  - It has completed complex missions such as Chandrayaan and the OneWeb commercial launches.
- **SSLV (Small Satellite Launch Vehicle)** is the newly inducted launch vehicle of ISRO to satisfy small satellite launch requirements.
- **Geosynchronous Satellite Launch Vehicle (GSLV):** GSLV's primary payloads are INSAT class of communication satellites that operate from Geostationary orbits and hence are placed in Geosynchronous Transfer Orbits by GSLV. GSLV Mk II is the launch vehicle developed by India, to launch communication satellites in geo-transfer orbit using cryogenic third stage.
- **Space Situational Awareness (SSA):** It is the deep understanding and knowledge of the space environment including location and behaviour of space objects such as satellite, debris, and other celestial objects, and their evolution.
  - ISRO is presently going into the area of SSA and the required infrastructure to complete such operations is in the planning stage.
- **Earth observation (EO)** data from various ISRO satellites (maintained for continuous coverage) has been extensively used in and has **benefitted schemes** such as MGNREGA, PMGSY, PMKSY, AMRUT, PMFBY, SVAMITVA, etc.
  - In the early 1980s, the NNRMS laid the foundation for the usage of EO data in GIS applications at the national level, covering potentially all departments and ministries. In the wake of this, the IRS programme was created by ISRO comprising various first generation satellites.
  - ISRO has also made progress in various specialised EO applications such as Cartosat, RISAT, etc.
- **NavIC (Navigation with Indian Constellation)** is the operational name for the Indian Regional Navigation Satellite System (IRNSS).
  - Accurate real-time positioning and timing services over India, and in a region that extends approximately 1500 km around Indian mainland, is provided by the NavIC.
  - The services offered by NavIC aid in traffic management, vehicle tracking, terrestrial navigation for users, disaster management, and more.
  - There are three segments in IRNSS: **space, ground, and user.** The **space segment** consists of a base-layer constellation of seven satellites in the GEO and GSO planes. **NVS-01** satellite is the recent addition to the constellation (first of the 2-G navigation satellite series).
- **Astrosat:** First space observatory of India. It was launched in 2015 in a PSLV-C30 (XL) rocket.
- **Mars Orbiter Mission:** It was launched in November 2013 and was placed in orbit around Mars in September 2014 after 300 days of travelling. It lost contact with Earth in April 2022 because of a protracted eclipse.
- **Chandrayaan-1:** India's first spacecraft. It was launched in 2008 and orbited the Moon at a distance of 100 km from the surface. It launched a Moon Impact Probe known as ChACE. In addition, the Man in the Moon Probe was the first artificial object to reach the Moon's South Pole.
- **Chandrayaan-2:** It was launched in 2019 and consisted of an Orbiter, Lander, and Rover. Multiple first-of-their-kind instruments, including an L-band SAR operating for the first time on the Moon, a large area X-ray spectrometer, etc. are aboard the orbiter.
- **Chandrayaan-3:** It aimed to prove India's soft-landing and roving capabilities on the Moon. It was launched on 14th July 2023 and made a soft-landing near the South Pole of the Moon on 23rd August 2023.
  - **ChaSTE:** Revealed thermal behaviour of the lunar surface up to 10 cm depth.
  - **LIBS** detected sulphur on the lunar surface.
  - The vibrations caused by the movement of the rover was recorded by **ILSA.**
  - **RAMBHA-LP** measured the plasma near the surface.
- **Aditya-L1:** India's first mission focussing solely on the Sun. It will halo orbit around Lagrange point 1 (L1) of the Sun-Earth system to ensure that its Sun observations remain unaffected due to occultation or eclipse.
- ISRO plans to have **Bharat Space Station** in future and for that it is moving towards Gaganyaan and man-on-the-Moon missions.

NVS-01
● Standard I-2K bus structure. More than 2,200 kgs.
● Navigation payload working in L1, L5, and S frequency bands.
● As compared to 1-G (first generation) satellites, the 2-G satellites contain an additional **L1 band** and an **indigenously developed Rubidium atomic clock**.
● Powered by two solar arrays.
● Designed for a mission life of about 12 years.

L1 Navigation band
● Its inclusion improves positioning, navigation, and timing services for civilian users.
● It also facilitates interoperability with other GNSS services.

Indigenously developed space-based Rubidium atomic clock
● Designed by Space Applications Centre, Ahmedabad.
● Only a few countries possess this technology.

2.   Redefining Mobility: Transforming Landscape of Transport Sector

Modes of transport comprise India's transportation system:

Roads
● **The Ministry of Road Transport and Highways (MoRT&H):** It is the apex body, formed in 2009.
● India has the **second largest road network** in the world of about 62.16 lakh km.

Bharatmala Pariyojana
● It envisages development of around 26,000 km of economic corridors, which will supplement Golden Quadrilateral (GQ) and North-South and East-West (NS-EW) Corridors in carrying the majority of freight traffic on roads.
● It envisages development of Ring Roads/bypasses and elevated corridors to decongest the traffic in cities, enhance efficiency of logistics, etc.

Green National Highways Corridor Project
● It was launched in 2016 under the Green Highways Policy (unveiled in 2015) to develop eco-friendly and green national highways.
● Various national highways passing through Rajasthan, Himachal Pradesh, Uttar Pradesh, and Andhra Pradesh (around 781 km) are included under it.
● It is being run with the aid of the World Bank.

National Highways Authority of India
● It was established under the NHAI Act, 1988 and has been entrusted with the National Highways Development Project (NHDP).
● 1,32,499 km is the total length of NH (including expressways) in India while highways/expressways constitute around 1.7% of the length of all roads in India. But, 40% of the road traffic is carried by them.

National Highways Development Project
● It started in 1998 to upgrade, rehabilitate, and widen India's major highways to a higher standard.
● It has been subsumed under the ongoing Bharatmala project.

PM GatiShakti Plan
● It is a digital programme to bring 16 ministries for integrated planning and coordinated infrastructure connectivity projects implementation.
● It provides multi-modal connectivity to ensure last-mile infrastructure connectivity and reduction in people's travel time.

Parvatmala Pariyojana
● National Ropeways Development Programme aims to develop ropeways as alternative mode of transportation in hilly areas as well as congested areas such as Varanasi.
● It envisages enhancing passenger accessibility and promoting tourism.

National Registry of Vehicles and License Records
● Successful automation of RTO operations has been achieved through Mission Mode Project.
● Mission Mode Project comprises two flagship applications - Vahan and Sarathi. Vahan consolidates vehicle registration, taxation, permit, fitness, and associated services across the country. Sarathi is associated with driving licence, learner licence, driving schools, and related activities.

e-Tolling
● In order to ensure traffic's seamless movement through toll plazas and increase transparency in toll collection using FASTag, **National Electronic Toll Collection (NETC) Programme,** a flagship initiative of MoRT&H, has been launched.
● National Payment Corporation of India (NPCI) is the Central Clearing House.

Railways
- The first train from Mumbai to Thane travelling 34 kms started in 1853.
- The network of Indian railways currently includes 7,308 stations spread over 68,043 km route length having a fleet of 13,215 locomotives, 74,744 passenger service vehicles, 10,103 other coaching vehicles and 3,18,896 wagons.
- It is divided into 17 Zones which are basic operating units having their own respective headquarters.

Vande Bharat Express
- It was formerly known as Train 18, is a semi high-speed, electric multiple unit train operated by Indian Railways.
- Renamed in 2019, the first train was flagged off between New Delhi - Kanpur - Prayagraj - Varanasi route.

Shipping
- The Ministry of Shipping was formed in 2009 and renamed as the Ministry of Ports, Shopping, and Waterways (MoPS&W) in 2020.
- The capacity of major ports in terms of their berths and cargo handling equipment presently stands at 1617.39 MMT.

Maritime Development
- Around 95% of India's trade by volume and 68% by value is moved through maritime transport.
- The **major ports** fall in the **Union List** of Schedule VII of the Indian Constitution and are under the direct administrative control of the central government.
- **Ports other than major ones** are under the jurisdiction of respective maritime state governments and fall in the **Concurrent List** of Schedule VII.
- 55% of the total traffic handled by Indian ports is handled by major ports.

Sagarmala Programme
- It aims to generate port-led development in the country.

Inland Water Transport
- India has 14,500 km of navigable inland waterway network but it handles less than 2% of India's total cargo transport.
- Inland Waterways Authority of India (IWAI) was set up in 1986 for the regulation and development of inland transport.
- 111 inland waterways have been declared by the government across 24 states under the National Waterways Act of 2016.
- Jal Marg Vikas Project is being implemented by IWAI for NW-I capacity augmentation.

Civil Aviation
- It is encompassed under the ambit of the Ministry of Civil Aviation.

Regional Connectivity Scheme
- Its objective is to facilitate/stimulate regional air connectivity by making it affordable for the masses.
- It envisages to provide unserved and under-served airports of the country with connectivity through revival of existing airstrips and airports.

International Connectivity
- India has Air Service Agreements with 116 countries.
- India connects directly with 52 countries and indirectly with 100 countries.

Biometric Enabled Seamless Travel
- **DigiYatra** allows hassle free travel at airports without the need to for verification of ticket and ID at multiple touch points. It makes use of Facial Recognition Technology.

Krishi Udan 2.0
- Launched in 2012 to facilitate movement of cargo by air. It aims to ensure seamless, cost-effective, time-bound, air transportation and associated logistics for all agri-produce originating especially from North-East, hilly, and tribal regions of the country.

Sugamya Bharat Abhiyan
- It promotes accessibility and inclusivity in air travel by making sure the requirements of people with special needs such as 'divyang' are understood and met.

3. India's Industry Sector

PM GatiShakti
- It was launched in 2021 to integrate across multiple agencies various planning and infrastructure development efforts. It rests on the 'whole of government approach'. It has **two components:**
  - **National Master Plan:** It is a GIS-based technology platform which links everything from roads to aviation, from railways to agriculture, various ministries and departments.
  - **Three-tier institutional arrangement:** To integrate efforts of various line ministries/departments for synchronised development of multimodal infrastructure and the economic zone.

National Logistics Policy
- It was launched in 2022 and complements the PM GatiShakti National Master Plan. It aims to bring efficiency to logistic services and human resources through process streamlining, bringing logistics in higher education mainstream, and suitable technology adoption.

Foreign Direct Investment Policy
- The process of granting approvals to foreign direct investment (FDI) proposals has been simplified since the abolition of the Foreign Investment Promotion Board (FIPB) in June 2017.
- The work related to processing of FDI applications and government's approval thereon, under the existing FDI Policy and FEMA is now **handled by the concerned ministries/departments**.
- **Foreign Investment Facilitation (FIF) Portal:** DPIIT administers the management and running of the portal. It facilitates the clearance of those applications that are filed through the approval route.
- **FIF Portal** has been integrated with the **National Single Window System (NSWS)** from August 2022 onwards. The proposals of FDI requiring approval of the government are filed through the NSWS portal.

Department for Promotion of Industry and Internal Trade (DPIIT)
- It is the nodal department for FDI policy formulation.
- It maintains and manages data on FDI flowing into India, based on remittances reported by the Reserve Bank of India (RBI).

Make in India
- It was launched in 2014, one of the unique 'Vocal for Local' initiatives, promoting India's manufacturing domain in the world.

Production Linked Incentive (PLI) Scheme
- In line with India's vision of becoming 'Athmanirbhar', it was announced for 14 key sectors with an outlay of 1.97 lakh crore to enhance manufacturing capabilities and exports of India.

Startup India
- It was launched in 2016 and provides impetus to the entrepreneurial setup across **three major pillars**:
  1. Simplification and handholding
  2. Funding support and incentives
  3. Industry-academia partnership and incubation
- As of May 2023, DPIIT has recognised a total of 99,371 startups across 57 sectors in 674 districts with at least one startup from every State and UT of the country having created 10.49 lakh jobs since 2016.
- **Fund of Funds (FFS)** with a corpus of Rs. 10,000 crore has been established by the DPIIT to meet startups' funding needs. FFS does not directly invest in startups, but instead provides capital to SEBI registered Alternative Investment Funds (AIFs).
- **Startup India Seed Fund Scheme (SISFS)** has been created by the DPIIT to provide financial assistance to the startups for proof of concept, prototype development, product trials, market entry, and commercialisation.

Classification of MSMEs (notified in 2020)
- **Micro enterprise:** Investment in plant and machinery or equipment does not exceed Rs. 1 crore and turnover does not exceed Rs. 5 crore.
- **Small enterprise:** Investment in plant and machinery or equipment does not exceed Rs. 10 crore and turnover does not exceed Rs. 50 crore.
- **Medium enterprise:** Investment in plant and machinery or equipment does not exceed Rs. 50 crore and turnover does not exceed Rs. 250 crore.

Micro, Small, and Medium Enterprises (MSMEs)
- The primary responsibility of the promotion and development of MSMEs is of the state governments. But, the government of India supports state government efforts through various initiatives.
- **Udyam Assist Platform** was launched by the Ministry of MSME in January 2023 to formalise informal micro enterprises under the ambit of MSMEs.
- India has more than 6 crore MSMEs contributing around 27% to India's GDP, 44% to India's exports, and employs more than 11 crore people.

Udyam Registration Portal
- It was launched by the Ministry of MSME in July 2020, to facilitate registration of MSMEs as per the new classification.

Khadi and Village Industries Commission (KVIC)
- It is a **statutory** organisation under the Ministry of MSME.

Textiles
- In the textile industry, the mill sector of India with 3,400 textile mills having an installed capacity of more than 50 million spindles and 8,42,000 rotors, is the second largest in the world.
- The textile industry contributes to 7% of industry's output in value terms of 2% of India's GDP and to 15% of India's earnings from exports. It also employs around 4.5 crore people directly.

Steel
- India's **crude steel capacity** has risen to 142 MT at present making India the second largest crude steel producer of the world surpassing Japan and trailing China. The **crude steel production capacity** has risen steadily to 161.3 MT.

Pharmaceutical
- The Indian pharmaceutical industry is third largest in the world by volume.
- It had a total annual turnover of around Rs. 3.79 lakh crore in 2022-23.
- It has had a CAGR of 6.4% (as per total pharma export) in the last 9 years.
- Total pharma exports are around 1.94 lakh crore while total imports are around 0.56 lakh crore for 2022-23 (for bulk drugs, drug intermediaries, drug formulations, and biologicals).

4. Agricultural and Rural Development - Key Initiatives & Achievements

Union Budget 2023
- The Government of India has increased the budget allocation for the Ministry of Agriculture and Farmers by 5 per cent for the financial year 2023-24 compared to FY 2022-23
- The target for Agriculture credit has been increased to Rs 20 lakh crore, and Rs. 6000 crore has been allocated for the launch of the PM Matsya Sampada Yojana.

Millets
- The United Nations General Assembly has declared **the year 2023 as the International Year of Millets**, based on a proposal from India.
- **Indian Institute of Millets Research** in Hyderabad was established to transform millet cultivation from subsistence farming to a globally competitive industry through cost-effective and environmentally friendly production, processing, and value-addition technologies, along with establishing efficient supply chain networks.
- The **at-home consumption of millet in India has increased to 14 kilograms per person per month**, compared to the previous consumption of not more than 3 kilograms.
- **One District, One Product Scheme:** Millets have been selected in 129 districts for further expansion and promotion.

Food Production
- India has achieved record-high levels of both food grain and horticulture production in 2022-23, witnessing an increase of 4 per cent and 1 per cent, respectively, compared to the previous year.

Minimum Support Price
- The Minimum Support Price (MSP) is determined by the government at a rate of at least 1.5 times the all-India weighted average cost of production.
- The **government is actively promoting crop diversification to enhance food security with a maximum increase in MSP given to oilseeds and pulses.**
- The Commission of Agricultural Costs and Prices (CACP) has recommended that the government review its open purchase policy on rice and wheat.

Grain Storage Plan
- India launched the **world's largest grain storage plan in the cooperative sector to reduce food waste, strengthen food security and boost farmers' income.**

Fertilisers
- **PM-PRANAM (PM Programme for Restoration, Awareness Generation, Nourishment, and Amelioration of Mother Earth)** aims to protect the earth by promoting sustainable and balanced use of fertilizers, adopting alternate fertilizers, and implementing resource conservation techniques.
- **GOBARdhan initiative:** The government has approved market development assistance to promote the application of organic fertilizers under the scheme.
- **Nano-DAP and Nano-Urea:** India has launched nano-Urea and the world's first Nano-DAP (Di-Ammonium Phosphate), aiming to reduce the quantum of fertilizer imports by improving the efficiency of fertilizer applications.

Information Technology initiatives
- **Kisan Rin Portal:** It has been established to facilitate access to credit services under the Kisan Credit Card (KCC) and Modified Intrest Subvention Scheme (MISS).
- **WINDS (Weather Information Network Data Systems)** has been launched to establish a network of automatic weather stations and rain gauges at the taluk/block and gram panchayat levels. This initiative aims to improve crop management, resource allocation, and risk mitigation.

G20 Agriculture Ministers Meeting:
- The G20 Agriculture Ministers Meeting has approved the Deccan High Principles of Food Security and Nutrition 2023 and the International Millets and Other Ancient Grains Research Initiative (MAHARSHI).

Rural Development

- **Sangathan se Samridhhi: Leaving no rural women behind,** a national campaign under the initiative Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) was launched to mobilize 1 crore women from vulnerable and marginalized rural households with the help of Self-Help Groups.
- **Rashtriya Gram Swaraj Abhiyan:** It aims to revamp Panchayati Raj Institutions as vibrant centres of local governance and economic growth. Its nine themes include poverty-free, healthy, child-friendly, water-sufficient, clean and green, self-sufficient infrastructure, socially secured, good governance, and women-friendly villages.
- **Jal Jeevan Mission:** It achieved the milestone of providing tap connections to 13 crore households.
- **PM Ujjwala Yojana:** The government has approved the extension of PM Ujjwala Yojana for the release of 75 lakh LPG connections.
- Mission Amrit Sarovar**: It aims at the rejuvenation and development of 75 water bodies in** each district of the country.
- **Swachh Bharat Mission (SBM):** 75 per cent of the villages have achieved the milestone of 75 per cent ODF (Open Defecation Free) plus status.

KURUKSHETRA DECEMBER 2023

1. Aspirational Districts and Block Programme- A Model for Socio-economic Transformation through Grassroots Empowerment

- **NITI Aayog launched the Aspirational District Programme (ADP) in 2018** with an emphasis on improving governance at the grassroots level.
- The initiative focuses on **112 Aspirational Districts (AD) across 27 states**, chosen based on the incremental progress made across 49 Key Performance Indicators (KPIs) under 5 broad socio-economic themes:
  - Health and nutrition,
  - Education,
  - Agriculture and Water Resources,
  - Financial Inclusion & Skill Development, and
  - Basic Infrastructure.

Innovative and collaborative approach:
- The Aspirational District Programme (ADP) is **built on a competitive and cooperative federalism model, striving for improved governance to accelerate and ensure inclusive human development.** It relies on evidence-based policy interventions through data-driven governance.
- Three key interventions of ADP:
  - **Grassroots-level participation in designing integrated local action plans** to address specific development gaps.
  - **Outcome-based evaluation of programmes**.
  - **Leveraging technology** for continuous monitoring and healthy competition.
- The program prioritises basic services like pucca houses, all-weather roads, electricity, tap water connections, and financial inclusion to improve living standards, health, and overall well-being.

Success factors of the Aspirational District Programme (ADP)
- **Positive nomenclature:** The selected districts are termed "aspirational" to instil a sense of positivity within the district administration and among the people.
- **Prioritisation:** Aspirational districts were selected based on priority socio-economic indicators.
- **Innovation in governance to tackle traditional challenges:** The program encourages innovative governance approaches to address long-standing challenges.
- **Competitive and Cooperative Federalism:** Robust monitoring and data-driven governance are employed, with Aspirational Districts ranked according to improvements in socio-economic indicators, fostering healthy competition.
- **Horizontal convergence and collaboration:** Various departments and civil society organisations collaborate horizontally to ensure effective implementation.
- **Vertical collaboration:** Prahari officers have been appointed for each Aspirational District, acting as a bridge between central, and state departments, and district administration.
- **Peer learning and behavioural change**: The initiative promotes peer learning and behavioural change through the sharing and benchmarking of best practices

Case studies:
- **Chamba district, Himachal Pradesh,** has seen antenatal care for pregnant women improve from 70% to 90%, and institutional deliveries have doubled from 40% to 80%.
- **Sukma district, Chhattisgarh,** has consistently maintained an immunization rate above 90% for the past five years.
- **Aspirational Districts in Uttar Pradesh** and Bihar have shown significant progress, with antenatal care rising from 36% to a new high of 56%..

Aspirational Block Programme
- **The Aspirational Block Programme (ABP) was launched in January 2023** to enhance the focus on localised planning, aiming for 100 per cent saturation of schemes in the most underdeveloped blocks of India.
- An inter-ministerial committee has selected **500 ABs across 31 states and Union territories.**
- The main strategy of ABP is to **strengthen basic service delivery through improved governance and implementation at the grassroots level,** ensuring both social and regional development.
- ABP is designed to ensure that the benefits of development reach marginalised and vulnerable sections of the population.
- It adopts customised approaches instead of a one-size-fits-all approach, accommodating the specific needs of each region
- **Approaches of ABP**
  - **Capacity building:** ABP focuses on enhancing the capacity of block-level officials, ensuring effective and accelerated implementation of schemes.
  - **Block development strategy:** The program employs a block development strategy that involves conducting a SWOT analysis. This helps in identifying and maximising strengths and opportunities, while simultaneously addressing weaknesses and threats.

- ○ **Knowledge portal:** A dedicated knowledge portal is established for the documentation and dissemination of best practices. This facilitates the sharing of successful approaches and lessons learned.
- ○ **Institutional support:** ABP provides institutional support to assist both block and district administrations in the seamless implementation of the program.

Conclusion: The United Nations Development Programme (UNDP) has lauded the Aspirational District Programme (ADP) as a successful model of local area development aligned with the principle of "leave no one behind." The combined efforts of ADP and ABP will set the groundwork for socio-economically self-reliant villages and contribute significantly to the realisation of an "Atma Nirbhar Bharat" (self-reliant India).

2. Lab to Land - Empowering Farmers Technically

- The '**Lab to Land' program, initiated by the Indian Council of Agricultural Research (ICAR), focuses on leveraging modern information and communication technologies to enhance efficiency and cost-effectiveness in agriculture**. This initiative is actively implemented through the Krishi Vigyan Kendras (KVK) across the country.
- The **primary objective of the program is to facilitate the swift transfer and diffusion of new technologies**, ensuring sustainable food production, improved farming practices, and increased profitability for farmers.

Sub-Mission on Agricultural Extension (SMAE)
- The Sub-Mission on Agricultural Extension (SMAE) is implemented by the Extension Division of the Union Ministry of Agriculture and Farmers.
- It focuses on creating awareness and enhancing the use of appropriate technologies in agriculture and allied sectors.
- **Support to State Extension Programmes for Extension Reforms:** The Scheme aims to make extension systems farmer-driven and farmer-responsible by transferring technology to farmers through the Agricultural Technology Management Agency (ATMA) at the district level.
- **Mass Media Support to Agricultural Extension:** It utilises the nationwide infrastructure and networks of All India Radio and Doordarshan to disseminate the latest farm practices among rural masses.
  - ○ The **Kisan Call Centers, launched in 2004**, provide a platform to address farmers' queries through telephone calls.
- **Scheme for the establishment of Agri-clinics and Agribusiness**: It aims to harness the expertise of a large pool of agricultural graduates by offering them gainful opportunities for self-employment

Krishi Vigyan Kendras
- **ICAR initiated Krishi Vigyan Kendras in 1974** for the transfer of agricultural technologies and knowledge to farmers.
- KVKs are the **sole institutions at the district level that function as knowledge and resource centres,** facilitating a two-way link between farmers and researchers.
- **The primary mandates of KVKs include:**
  - ○ Conducting on-farm testing to assess the location specificity of agricultural technologies.
  - ○ Carrying out frontline demonstrations to establish the production potential of technologies in fields.
  - ○ Capacity building of farmers and officials.
  - ○ Serving as knowledge and resource centres.
  - ○ Providing farm advisories to farmers.
- Common Service Centers (CSCs) in rural areas have been connected with KVKs to offer technological solutions to farmers seeking assistance with agriculture-related issues.
- KVKs are actively engaged in awareness campaigns against stubble burning.

Other initiatives:
- **Agricultural Technology Information Centers (ATICs)** serve as single-window delivery systems, offering technology, information, advisory services, and technological inputs to farmers. They provide essential services such as soil health cards, mobile agro advisories, and extension programs.
- **KSHAMTA (Knowledge Systems and Homestead Agricultural Management in Tribal Areas)** was launched to enhance agricultural production in tribal areas, with the support of Krishi Vigyan Kendras (KVKs).
- **'Mera Gaon Mera Gaurav' (My Village, My Pride)** is an initiative by ICAR, where groups of scientists identify or adopt villages for the dissemination of technologies and information to farmers.
- **Farmer FIRST (Farm, Innovations, Resources, Science, and Technology)** organises participatory demonstrations on farmers' fields to showcase different technologies.
- **ARYA (Attracting and Retaining Youth in Agriculture)** aims to create job opportunities in rural areas by skilling and training youth in various agro-enterprises.
- **NICRA (National Innovations on Climate Resilient Agriculture)** aims to adopt climate-smart agricultural practices.
- **Student READY (Rural and Entrepreneurship Awareness Development Yojana)** exposes undergraduate students in agriculture to farm realities, helping them understand specific problems and enabling them to tackle them independently.
- **Atal Tinkering Labs is connected with KVKs and ATMAs** to promote innovations in the agriculture sector among school students.
- **mKISAN portal** aims for the quick transfer of knowledge to farmers. Farm advisories are shared with farmers in the form of text or voice messages in their preferred language.

- **Kisan Suvidha app** focuses on disseminating information on critical parameters such as weather, market prices, plant protection, and farm machinery. It is a multilingual app that helps farmers make informed decisions for better productivity and profitability.

3.   Sustainable Industries: The Backbone of Self-reliant Villages

- Sustainable industries not only provide economic opportunities, but also help in safeguarding the environment while empowering the local community.
- The endurance and thriving capacity without depletion of the resources on which they are based define the sustainable industries. These industries prioritise long-term economic as well as environmental well being.
- The economic landscape of a region is shaped significantly by the contribution of sustainable industries. These industries create jobs, attract investments, and generate income for local communities. Some examples of such industries are eco-friendly tourism, agro-based businesses, renewable energy initiatives, and more.
- *Atmanirbhar villages* or self-reliant villages is a visionary approach towards community development. **Self-sustaining local economies** is the objective of such communities.
  - In addition to economic self-sufficiency, several other areas such as sustainable development, resource utilisation efficiency, skill development and entrepreneurship, infrastructure development, preservation of culture, social cohesion, and environmental sustainability are also prioritised.
  - Such villages (or communities) that are heavily reliant on traditional sectors such as agriculture and tourism need to diversify economically because it offers stability and growth.
  - For such villages, sustainable villages can provide alternative income sources, provide job opportunities, foster economic growth and development, along with environmental stability, social stability and well-being.
- Practical applications of sustainable industries can be understood in the context of Jammu and Kashmir. Some of the growing sectors are discussed below.
  - **Homestays:** They provide visitors with opportunities of having a closer look at the local culture, traditions, and daily life of the people. At the same time, they are cost-effective and have a small ecological footprint.
    - Several initiatives of the J&K government such as financial incentives, cheaper loans, training programs on hospitality and skill development on cultural sensitivity, regulatory simplification, infrastructure development, and collaborations with local stakeholders is providing impetus to this industry.
    - Use of technology such as social media and word of mouth has also played a key role in popularising.
  - **Pencil industry:** Exquisitely crafted pencils known for their top-notch quality, exquisite designs, cultural significance, created from fragrant cedarwood are the hallmark of Kashmiri pencil industry.
    - **Pencil village of India** is a village with 17 units and 4,000 employees has contributed to India's self-reliance in pencils reducing the need for importing pencil wood. It has found mention in 'Mann Ki Baat' of the Prime Minister of India.
  - **Saffron cultivation:** For centuries saffron has been cultivated in the valley in an environmentally friendly, low-impact, traditional manner. It is well-suited to the region's climate and requires minimal pesticide and fertiliser use. It is a valuable cash crop due to its high value in domestic as well as international markets.
    - The **National Saffron Mission** was launched by the government in 2011 to promote cultivation of the product.
  - **Handicraft and Handloom industry:** At present, there are around 3.5 lakh artisans working on various crafts across J&K.
    - **'Wool Processing, Handloom, and Handicrafts Policy-2020'** has been launched by the Government of J&K in recognition of the importance and potential of the handicraft and the handloom sector.
    - **Srinagar** has also been recognized as a **UNESCO Creative City Network for arts and craft**. It provided J&K's handicrafts global recognition and a global stage to showcase them.
  - **Cricket Bat industry:** Mainly located in the southern parts of Pulwama and Anantnag where the lush, wet highlands provide necessary environment for a specific willow tree whose wood is sought after for making high quality cricket bats. This region has around 200 bat manufacturing units employing around 50,000 individuals.
    - The **female cultivar of white willow tree** is preferred for cricket bat production due to its characteristics such as lightweight and ability to absorb shock.
  - **Agro-processing:** It adds shelf life to perishable agricultural goods such as Apples, Saffron, and Walnuts, some of the major products of Kashmir. It also adds value to these products, additionally.
    - This sustainable industry holds the potential to become the cornerstone of self-reliance for J&K.
- Development of sustainable industries in J&K provides challenges such as skill development, infrastructure development, financial resources, marketing, development of regulatory frameworks, and more which need to be overcome to unlock its full potential.

4.   Accelerating Economic Growth in Villages

- The idea of self-sufficiency in Indian villages was first propounded by Sir Charles Metcalfe in 1830. Mahatma Gandhi later conceptualised Gram Swaraj, envisioning a self-sufficient village in a realistic manner.
- Villages constitute the lifeline of India, hosting 65% of the country's population and contributing 25-30% to the Gross Domestic Product (GDP). Additionally, 47% of the population depends on agriculture for their livelihoods.
- According to the International Fund for Agricultural Development (IFAD), developing countries with rapid agricultural growth experience the most significant reduction in poverty rates and the incidence of undernourishment. A 1 per cent increase in agricultural growth, on average, leads to a 2.7% increase in the income of people in developing countries.

Financial Support in Rural Areas
- According to the IFPRI study on the prioritisation of investment opportunities, investments in education and health in rural areas significantly contribute to reducing poverty and increasing agricultural growth.
- The government has increased the allocation of funds to the Ministry of Rural Development in the Financial Year 2023-24. This ministry implements various schemes, including the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Mantri Gram Sadak Yojana, and Pradhan Mantri Awas Yojana (PMAY-Gramin).

Skill Building in Rural Areas
- The government is implementing three schemes for employment generation:
  - **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):** Provides employment opportunities to unskilled workers.
  - **Deen Dayal Upadhyaya Grameen Kaushalaya Yojana (DDU-GKY):** Targets rural youth between the ages of 15 and 35 years from poor families aiming to provide skill development opportunities.
  - **Rural Self Employment and Training Institutes (RSETIs):** Focuses on promoting self-employment among unemployed rural youth living below the poverty line. It also includes periodic skill upgradation to keep them abreast of the latest technologies.
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** is designed to provide skill-based training to rural youth.
- **Prime Minister's Employment Generation Programme (PMEGP)** aims to generate self-employment opportunities by establishing micro-enterprises in the non-farm sector.
- **Vibrant Villages Programme** aims towards boosting infrastructure development and livelihood opportunities in villages along the northern borders

Need for Micro, Small and medium Scale industries for Non-Farm Sector Jobs:
- Growth in rural areas should be driven by agriculture-based industrialisation, gradually shifting to the non-farm sector.
- Out of the **63.4 million MSMEs across India, 51.25 per cent are in rural areas, and 48.75 per cent are in urban areas**.
- MSMEs can absorb surplus labour and alleviate the problem of disguised unemployment in rural areas.
- MSMEs also play a significant role in the development of the secondary and tertiary sectors in rural areas.

Special Focus on Forest Fringe Villages:
- **As per the Forest Survey of India (2019), 26 per cent of the total villages in India, which are home to 22 per cent of the population, are forest fringe villages**. Between 60-70 per cent of the income of these villages depends on the collection and sale of Minor Forest Produce.
- The **Panchayat (Extension of the Scheduled Areas) Act 1996 (PESA 1996)** empowers the Gram Panchayats and Gram Sabhas with the ownership of minor forest produce.
- The **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**, has vested the right of ownership, and access to collect, use, and dispose of minor forest produce with forest dwellers.
- The **Van Dhan Yojana** was launched in 2018 with the Tribal Cooperative Marketing Development Federation of India (TRIFED) as the nodal agency at the national level for the socio-economic development of the tribal population.

Promote villages as Tourism hubs
- **The travel and tourism industry presently employs 14 million people and is expected to grow at a rate of 2.5 per cent per annum until 2027.**
- Rural tourism has the potential to transform villages into independent micro-economic units, providing farmers with direct access to markets.
- **Chitukal village in Himachal Pradesh** has been awarded as the best tourism village in India, in accordance with the criteria set by the United Nations World Tourism Organization (UNWTO).
- With a vast and diverse geographic region, India must create basic infrastructure to develop its villages into tourism hubs.

Smart Villages
- Agriculture in rural areas needs a total revamp with the infusion of smart technologies like Artificial Intelligence, ICT applications, and Big Data Analytics to strengthen a self-sufficient village economy.
- Agritech startups are developing innovative solutions, including precision farming and supply chain management, to improve productivity, reduce costs, and increase the income of farmers.
- "**Villages of Tomorrow**' is an initiative co-developed by the United Nations Development Programme (UNDP) with Trendyol (an e-commerce platform) to reduce inequalities and promote gender-sensitive digitalization in rural areas.
- The **Agricultural Accelerator Fund** was established in the Budget of 2023 to encourage agri-startups founded by young entrepreneurs in rural areas.
- The **YONO Krishi app** by the State Bank of India is developed to meet the financial, input, and advisory needs of farmers.
- **ITC MAARS (Meta Market for Advanced Agricultural Rural Service)** was developed by the Indian Tobacco Company for the efficient procurement of Agri products by providing agricultural and related services to farmers digitally.
- The **Provision of Urban Amenities in Rural Areas (PURA)** initiative calls for developing urban infrastructure and services in rural areas to create economic opportunities outside of urban areas.

5.   Need of Making Villages Aatmanirbhar

In India, more than 70% of the workforce and nearly two thirds of the population live in rural regions, and hence strengthening the rural economy to achieve self sufficiency at the village level is crucial.

The concept of Aatmanirbhar villages embodies the potential to create opportunities for livelihood and income generation in rural communities.

Making villages self-reliant can enhance food security through higher agricultural production and productivity, ensuring a consistent supply of food grains and thus reducing dependence on external sources for essential commodities.

Employment Opportunities
● Agriculture also serves as the source of livelihood for a significant portion of the rural population. **70 percent of rural households still depend on agriculture for their livelihood in the country.**
● Agricultural development in rural India has the potential to generate a plethora of employment opportunities, extending far beyond the farming sector. **It boosts job creation in associated fields like agribusiness, food processing, and allied sectors**.
    ○ In addition to having the potential to strengthen rural communities locally, **diversification of the rural labour market is essential in restricting the flow of people from rural to urban areas, which in turn helps to mitigate urban overcrowding** and unemployment and promotes a more stable and sustainable socioeconomic environment.

Sustainable Development
● The promotion of self-reliance in villages serves as a catalyst for eco-friendly practices. Villages can adopt eco-friendly and regionally appropriate solutions for water, energy, and waste management, thus making a significant contribution to environmental conservation.

Role of Women

The empowerment of women is essential for attaining self-sufficiency at the village level and fostering comprehensive socio-economic national development. Agricultural development initiatives should encompass measures promoting gender equality and provisions for women's access to education, health, land, and credit, enabling them to actively participate in farming and decision-making.

Present Status
● **Currently, India has emerged as a prominent producer and a prominent net exporter of agricultural products, occupying seventh position in the world.**
● The import portfolio of agricultural goods in India encompasses a wide variety of agricultural and allied products, such as cereals & cereal preparations, edible oils, unprocessed cashew nuts, raw wool, raw cotton, raw jute and fertilisers.
● **The major export destinations of India's agriculture and allied products are Bangladesh, China, Iran, Indonesia, Japan, Malaysia, Nepal, Netherland, Pakistan, Saudi Arabia, Thailand, the UK, the USA, the United Arab Emirates**, etc.

Government Initiatives
Realising the significance of achieving the goals of Aatmanirbhar Villages the Government of India has launched many schemes and programmes. The focus has been on raising productivity, cutting costs, and diversifying towards high-value agriculture crops by introducing supply chain reforms, a streamlined and rational tax system, etc.
● In 2020, the Aatmanirbhar Bharat Abhiyan, (Self-Reliant India Movement) was announced by the Government of India primarily focusing on promoting local products.
● The **Government of India's flagship scheme, the National Agriculture Market (e-NAM), a pan-India electronic trading platform for agricultural products** was launched in 2016, **completely funded by the Central Government and implemented by the Small Farmers Agribusiness Consortium (SFAC).** It provides better marketing opportunities for the farmers to sell their produce through an online competitive and transparent price discovery system and ensuring fair prices based on the quality of their produce.
● **The Union Government, in 2021, launched a new central sector scheme to form and promote 10,000 new Farmers Producers Organisations (FPOs)** in the country by 2027-28. FPOs are specialised organisations created by primary producers, including small and marginal farmers, milk producers, fishermen, weavers, rural artisans, craftsmen, etc. Under the scheme, the formation and promotion of FPO are based on the produce cluster area approach and a specialised commodity-based approach.

Way Forward
● An appropriate policy coupled with a strong strategy to strengthen the rural non-farm sector deserves to be at the top priority.
● It is imperative to adopt a comprehensive strategy for strengthening rural infrastructure, supporting local entrepreneurs, establishing agro-based and cottage industries, and ensuring easy access to finance.
● Expanding digital literacy, encouraging community participation, facilitating financial inclusion, and improving access to markets are crucial.

SCIENCE REPORTER DECEMBER 2023

1. Science Reporter - Petrified wood

Petrified wood, a captivating geological phenomenon, undergoes a process of petrification **where wood is transformed into stone**, creating 3-D entities that serve as perfect replicas of the original material. **In India, petrified woods are a rarity, found only in four distinct locations.**

Details:
- The petrification process involves woody stems getting buried in fine-grained wet sediments, such as flooded water bodies, deltas, and volcanic ash beds.
- **Due to the scarcity of oxygen, insects, and microorganisms, the decomposition of the wood is impeded.**
- The rate of decay depends on the moisture content in the woods and ambient temperature.
- Over time, cellulose and lignin in the woods are gradually replaced by minerals present in the water.
- Silica minerals, including quartz, opal, and chalcedony, are the most common replacements, known as 'silification.' Other minerals like calcite and pyrite are less common in this process.
- Nature's patient transformation over thousands and millions of years turns once-living woods into petrified ones.
- **Petrification faithfully retains the cellular features of the original plants, although petrified woods are considerably heavier than usual woods**.
- These geological wonders are not only collectors' delights and valuable for researchers but are also fashioned into jewellery, artefacts, table tops, bookends, and clock faces. Given their rarity and age, petrified wood objects can be expensive and challenging to obtain.
- Globally, petrified woods are limited in occurrence, **found in sedimentary rocks and volcanic deposits consisting of pyroclasts, ash, and mudflows.**
- The conversion of petrified wood to coal leads to their proximity to coal seams. Some petrified woods date back as far as 390 million years, attesting to the time when woody plants first appeared on dry land.
- **"Petrified forests" represent entire ecosystems buried by volcanic eruptions**, with Amethyst Ridge at Yellowstone National Park showcasing 27 successive forest ecosystems.
- The renowned Petrified Forest National Park in Arizona, approximately 225 million years old, was once a low-lying forested area with coniferous trees of impressive dimensions. Volcanic ash cover, groundwater dissolution, and the release of silica excellently preserved the woods, adorned with hues from manganese, iron, chromium, and other trace elements.

In India, four geosites host petrified wood: the two National Fossil Wood Parks in **Tamil Nadu**, the Akal Wood Fossil Park in **Rajasthan**, and Khadir Island in **Gujarat**. **The National Fossil Wood Park in Tiruvakkarai**, a National Geo-heritage Monument, is maintained by the Geological Survey of India. The petrified woods in this park, dating back around 20 million years, are scattered or partially buried in the Cuddalore Sandstone formation. **The National Fossil Wood Park in Sathanur**, discovered in 1940, features a petrified conifer tree trunk over 18 meters long, dating to 120-100 million years, bearing witness to the presence of a paleo-sea.

The Akal Fossil Wood Park, located 18 km from Jaisalmer, spans 21 hectares and indicates a warm and humid climate 180 million years ago in the Thar Desert. The petrified woods on **Khadir Island in Kutch**, aged 187-176 million years, lie on sandstone-shale-limestone rocks and are part of the Harappan civilization site of Dholavira. The ages of these sites suggest the existence of dinosaurs between the Triassic and Cretaceous periods.

Except for the Tiruvakkarai site, which is approximately 20 million years old, the other three sites indicate the presence of dinosaurs during the Mesozoic Era. The luxuriant vegetation in these areas provided fodder to these huge creatures, some of which were vegetarians. Marine conditions prevailed in or near the three areas, supported by evidence such as expansive deposits of miliolite in Saurashtra and Kachchh.

2. Science Reporter -Artificial Intelligence

Empowering communication for disabilities

In the contemporary landscape, Artificial Intelligence (AI) is not only thriving but also becoming increasingly accessible, ushering in a new era of technological empowerment. One notable application is the fusion of AI and facial recognition technology to convert facial muscle movements into spoken words, offering a means of communication for individuals facing speech-related challenges. This innovation is underpinned by machine learning, leveraging mathematical algorithms to comprehend and execute encoded programs.

Scientists from around the world are actively involved in creating user-friendly models, some of which are listed below:

- **Google Project Euphonia:** Utilizes AI for speech recognition in individuals with speech difficulties, adapting to unique speech patterns for accurate transcription and voice commands.
- **Microsoft's Seeing AI app:** The AI-powered app aids the blind or visually impaired by describing objects, reading text, and recognizing people, enhancing communication and independence.
- **EyeSpeak:** Eye-tracking communication technology enables paralyzed individuals to communicate by moving their eyes on a screen, with AI algorithms predicting intended choices for faster communication.
- **SwiftKey Symbols:** AI-powered symbol-based communication software for nonverbal individuals, using predictive text and symbol suggestions to facilitate conversation.
- **Proloquo2Go:** AAC app utilizing AI to predict words and model language, helping people with speech impairments communicate through text-to-speech technology.
- **Communication with Brain-Computer Interfaces (BCIs):** Companies like BrainCo develop BCIs allowing communication through brain impulses, interpreting brain activity using AI algorithms.
- **Emotion Recognition in AAC Devices:** Some AAC devices use emotion recognition technology to enhance emotional expression, improving communication of feelings and needs.
- **Customizable Voice Assistants:** Amazon Alexa and Google Assistant can be customized with user-specific voice profiles, enabling natural communication for individuals with different speech patterns.
- **Accessibility features in smart home gadgets:** Smart home gadgets offer accessibility features like voice control and compatibility with AAC apps to enhance the quality of life for people with impairments.
- **Symbol-dependent Communication Apps:** AI-powered apps like TouchChat and Proloquo4Text suggest symbols and sentences based on user input, facilitating communication for nonverbal individuals.
- **Text-to-Speech (TTS):** AI-powered voices in TTS technology have become more natural and expressive, with companies like Nuance providing TTS solutions for assistive technology applications.
- **Real-time Language Translation:** AI-powered translation programs like Google Translate enable real-time communication across different languages, breaking down language barriers.

Artificial Intelligence in Agriculture

In the agricultural sector, **AI and gene editing technologies** are being harnessed to address impending food insecurity. Gene editing has led to the creation of transgenic crops with enhanced tolerance to adverse conditions and improved nutritional profiles. AI's role in agriculture spans various tasks, from robotic applications and surveillance for weather prediction to soil and crop monitoring, data collection, and precision farming.

AI-driven meteorological studies aid farmers in making informed decisions by **providing accurate insights into weather conditions, sunlight hours, and wind speed.** Drones equipped with **AI can assess soil health, including nutrient content, moisture levels, and texture, enabling timely interventions such as precise fertilizer application.**

Image recognition systems with AI models **detect diseases, pests, and weeds** with high accuracy, **offering cost-effective and efficient alternatives** to traditional methods. Smart sprayers, employing computer vision, deliver precise amounts of herbicides, minimizing environmental impact. AI extends its influence to animal monitoring in agriculture, as seen in systems like **Cattle Eye,** which utilizes overhead cameras and computer vision algorithms to monitor cattle health and behaviour.

Initiatives such as the **World Economic Forum's AI for Agriculture Innovation (AI4AI)** underscore the transformative potential of AI in agriculture. Collaboration between governments, academia, and businesses aims to develop and implement AI technologies to enhance productivity, efficiency, and sustainability in the agriculture sector. Various Indian states, including Telangana, Karnataka, Uttar Pradesh, Maharashtra, and Punjab, have embraced AI in agriculture.

3.   PRINCE RUPERT DROPS- Unravelling the Phenomenal Strength of Glass Tears!

The Prince Rupert Drops are unique glass teardrops known for their extraordinary combination of strength and fragility. Named after a 17th-century prince, these drops are crafted by heating glass to a molten state and quickly cooling the outer surface while keeping the inner core hot. This process results in teardrop-shaped glass beads featuring a robust bulbous head and a delicate tail.

Details:
- The mystery behind the drops' strength lies in the internal stresses created during the rapid cooling process.
- The outer surface experiences high compressive stresses, while the interior undergoes high tension forces. This delicate balance between strength and fragility makes the drops resistant to external forces but susceptible to shattering if the tail is touched.
- Scientific exploration of Prince Rupert Drops spanned nearly four centuries, with the breakthrough coming in 1994 when scientists used high-speed framing photography to observe the shattering process. The drops' behaviour was attributed to the intense internal stresses, molecular arrangements, and the specific cooling process.
- The study revealed that the heads of the drops have significantly higher surface compressive stress than previously believed, reaching up to 700 megapascals.

- This stress, combined with the tension within the glass, creates an exceptionally high fracture strength in the droplet heads. Breaking a droplet requires entering the interior tension zone, and disrupting the tail allows cracks to penetrate, leading to the drops' explosive shattering.
- Scientists explored the impact of different contaminants on the drops' toughness and collaborated to understand the stress distribution within a Prince Rupert drop. The findings indicated that drops made in certain solutions exhibited greater strength.
- The practical applications of Prince Rupert Drops extend beyond scientific curiosity. Engineers draw inspiration from their internal stress patterns to develop impact-resistant glass, composite materials, and innovative designs for engineering and safety equipment. The drops serve as prototypes for bulletproof shields, impact-resistant eyewear, precision tools, pressure release valves, and special effects in filmmaking.
- The drops have also influenced scientific research, serving as tools to study material science, fracture mechanics, and the behaviour of glass under extreme conditions. Their properties have sparked advancements in ultra-strong fibres and have become captivating educational tools, helping teachers explain complex scientific concepts.
- Artists and craftsmen have been inspired by Prince Rupert Drops, creating unique glass sculptures, jewellery pieces, and decorative items. The drops symbolize the intersection of science and art.
- While crafted by human hands, the magic of Rupert Drops finds echoes in the wonders of nature. Volcanic Pele's Tears, with their teardrop shapes and rapid cooling, share a familial resemblance. Obsidian's conchoidal fracture, where a strong core harbours fragile edges, mirrors the delicate balance of a Drop's head and tail. Even deep within the ocean, glass sponge spicules exhibit a similar strength-to-fragility interplay. These natural echoes remind us that the mysteries unlocked in a laboratory can resonate with the grand symphony of the natural world.

In conclusion, the acknowledgement of the significance of pushing scientific exploration boundaries is evident. Prince Rupert Drops, with their enigmatic behaviour, serve as a reminder that seemingly ordinary materials can conceal hidden treasures of knowledge. These drops persist in shaping our perception of the world, inspiring discoveries, and offering valuable lessons about the properties of materials and the laws of physics.

Prince Rupert Drops, with their mesmerising combination of strength and fragility, have captivated scientists, engineers, artists, and educators alike. From enhancing our understanding of material science to inspiring innovative applications, these glassy wonders continue to leave an indelible mark on various fields of study and creative endeavours.

4.   Understanding protein conversations inside human cells

The Laboratory of Cell Death and Cell Survival at the Centre for DNA Fingerprinting and Diagnostics (CDFD) in Hyderabad is dedicated **to unravelling the intricacies of cellular behaviour from birth to death.** Understanding these processes is crucial for deciphering biological operations and their implications for health and disease.

Details:
- Comprising approximately **37 trillion cells,** the human body relies on a complex network of molecules, particularly proteins, to maintain cellular homeostasis. In this dynamic realm, the lab focuses on decoding how proteins communicate, transmit signals, and contribute to overall cellular health.
- Proteins, synthesised individually within cells, carry out their functions by forming complexes and "talking" to other proteins. Similar to the notion that one's associates shape their future, identifying interaction partners reveals the functions of different proteins, shedding light on cellular processes. Alterations in these **protein interactions are implicated in various human diseases,** emphasising the importance of understanding protein complexes.
- The lab's primary focus is on two systems: **the phosphatase and ubiquitin systems.** The ubiquitin system, crucial for protein degradation, involves attaching ubiquitin to proteins as a signal for recognition by the cellular degradation machinery. Investigating how ubiquitin links to proteins is vital for understanding the delicate balance of protein function in cells.
- The phosphatase system, on the other hand, **plays a key role in modifying proteins to mediate their functions**. Enzymes known as kinases add phosphate groups to proteins, while phosphatases remove them, maintaining the balance of active and inactive proteins. Disturbances in this balance contribute to diseases such as cancers, neurological disorders, and cardiovascular diseases. The lab delves into understanding how different phosphatases function to preserve this delicate equilibrium.
- A significant discovery involves the identification of a new partner for the phosphatase PTEN, a crucial tumour suppressor. This partner influences the trafficking of proteins within cells, revealing a previously unknown aspect of PTEN's role in controlling the movement of oncogenic growth factors. Additionally, PTEN regulates cellular glucose uptake, inhibiting the recycling process of glucose transporters on the cell surface and impacting tumour development.
- Notably, the lab addresses the question of how a limited number of phosphatases, around 200, regulate the diverse array of proteins in cells. The answer lies in these phosphatases interacting with different partners in various cellular compartments, enhancing substrate diversity and functions.
- The research also extends to the ubiquitin system, challenging the belief that it solely mediates protein degradation. Over 14 years, the lab has uncovered non-degradative functions of the ubiquitin system, including roles in protein secretion, liquid-liquid protein phase separation, and maintaining chromosome cohesion during the cell cycle.
- Proteins exhibit dynamic promiscuity, with enzymes acting on multiple substrates and multiple enzymes forming complexes to diversify functions. The lab has explored various interplays, such as between phosphatases and ubiquitin ligases, highlighting the complexity of protein interactions.

● Innovative studies challenge conventional norms, revealing additional roles of proteins and providing avenues for exploring their functions. For instance, the lab reported a study where the removal of a phosphate group from histones facilitated ubiquitination during transcription.

Currently, the lab is delving into the role of phosphatases as molecular bridges in protein trafficking, influencing organ development. Expanding their scope, they explore protein modifications like methylation and neddylation, relevant to neurodevelopmental disorders.

The team at CDFD is dedicated to answering the fundamental question of how cells behave. Their tireless efforts aim to comprehend the intricate wiring that binds cells together and the conversations occurring between proteins. The generated knowledge holds the promise of identifying therapeutic targets for various human diseases, contributing to the ever-accelerating pace of research in biology and medicine.

DOWN TO EARTH DECEMBER 2023

1.   Saved by sponge

In response to the warming oceans, women in Zanzibar and Tanzania have shifted from seaweed farming to sponge farming, a more climate-resilient practice.

About sponges:
● Sponges are fascinating creatures with a fibrous skeleton and **specialised cells that act as microscopic pumps, which help sponges extract nutrition and oxygen, purifying ocean water.**
● They are also valued for bathing and hygiene due to their **natural antibacterial and antifungal properties**.
● Women in Jambiani village (Zanzibar) earn approximately $100 per month from selling these farmed sponges.
● The sponge farms consist of parallel ropes with sponges at different development stages, harvested once a week. Women dive deep into the ocean to collect healthy wild sponges, which are the foundation for their farms near the seashore.
● These sponge colonies undergo cultivation and fragmentation to encourage new growth, with **harvesting requiring six months to a year—a notable drawback.** The harvested sponges are then sold to hotels and tourists.
● Previously dependent on seaweed income, climate change rendered seaweed unsustainable due to increased temperatures.
● The seaweed industry faced setbacks, leading to a decline in income. Since receiving training on sponge farming in 2009, the women's income has nearly quadrupled. **Sponge farming proves resilient to climate change**, requires minimal maintenance, and commands premium prices.

> **Seaweed** is a group of macroscopic, multicellular marine algae that is used in medicines to treat a variety of ailments, including cancer, diabetes and gastric disorders.

Sponges, being hermaphrodites (harbouring both male and female reproductive organs), can self-propagate effortlessly, and damaged or fragmented sponges can regenerate into new individuals, making commercial sponge farming feasible.
● Unlike synthetic sponges, sea **sponges are free from harmful substances like chemicals and microplastics.**
● The global sea sponge market thrives in eco-conscious regions, offering a sustainable and natural alternative to synthetic counterparts widely used in households worldwide.
● Regions like the Federated States of Micronesia and Tunisia value sea sponges for their beauty, softness, and sustainability.

2.   Forecasting attacks

Pest attacks and Crop Loss
Pest attacks pose a significant threat to agricultural productivity in India, leading to substantial crop losses and posing serious challenges to food security and farmer livelihoods.

Statistics:
● On a global basis, about 33% of crops are lost annually due to diseases, insect pests and weeds.
● In India, farmers lose about one-third of their crops due to pests and other diseases.

How thermal imaging technology is used to detect pest attacks?
Addressing the issue of pests and farmer suicides is crucial, and new agri-technologies are key to this solution. One such technology is the use of thermal imaging to detect microbial pest attacks.
● Initially, a device-based solution provided farmers with a miniature thermal camera and microprocessor.
● They would capture data twice daily, and send it to a server for analysis using image recognition and deep learning to detect abnormalities.
● The focus was on changes in maximum plant leaf temperature, signalling microbial pests.
● Odisha Institute of Agriculture and Technology researchers validated the data, enabling farmers to receive warnings within 12 hours of an impending attack. Farmers have always known how to mitigate pest attacks, but predicting them has been a challenge. This technology fills that gap.
● While the initial system was effective in quickly warning farmers of potential pest attacks, it was not affordable. To address this, a software-based solution using satellite imagery was developed.
● This solution collects information on the farmer's land area, coordinates, the crops they sow, and their irrigation patterns, among other things. The land is then monitored using satellite images, along with bi-daily updates from farmers on crop health to detect early signs of pest or disease emergence.
● This version of the technology is more affordable for farmers, costing Rs. 82 per month per acre (1 acre is 0.4 hectares).
● Efforts are also underway to deploy high-altitude balloons to measure wind, rising temperature, and heat direction, which play a role in disease spread6. However, this solution is still under development.
● The aim is to use technology to solve real-world problems and empower people, particularly farmers, by providing them with the tools they need to protect their crops and livelihoods.

3. Soil matters

Soil health plays a critical role in human nutrition, particularly among children and women in India. It suggests that improving soil micronutrients is not just crucial for increasing crop productivity, but also for achieving nutrition security.

Details:
- A study published in Scientific Reports in August 2023 conducted a large-scale evaluation of the relationship between soil micronutrients and the nutritional status of people in India.
- The researchers analyzed over 27 million soil tests from the Soil Health Card, a nationwide government program on soil health, and health data of 0.3 million children and 1 million women from the National Family Health Survey (NFHS).
- The study focused on two key minerals - zinc and iron. Zinc plays a vital role in cell growth, protein building, and supporting a healthy immune system. Iron is used by the body to make haemoglobin that carries oxygen from the lungs to all parts of the body.
- The researchers found that districts with low soil zinc availability had significantly higher rates of stunting and underweight conditions among children. This relationship between zinc and stunting was even stronger in wealthier households. They also found a clear association between soil iron availability and anaemia.
- In areas where soil nutrients were satisfactory, there was a positive correlation with the height and haemoglobin levels of children and women.
- These findings suggest that improving soil health can be a strategic approach to address the long-standing challenge of malnutrition in India.
- For instance, a study in Nepal's Terai region found that a 1 ppm increase in soil zinc availability could increase child height and decrease stunting.
- In another experiment, rats were fed zinc-biofortified wheat produced on zinc-deficient soil. The results showed that rats fed low-zinc wheat had lower zinc levels in their blood serum compared to those fed high-zinc wheat.
- Another study in Madhya Pradesh revealed a strong correlation and interdependence among the soil-plant-animal-human continuum. The study analysed the zinc content in soil, grain, straw feed, animal, and human blood serum.
- Another research analysed the impact of selenium concentrations in soil on human health. It found that villages with higher selenium concentrations in soil, grain, and human hair had lower rates of Keshan disease. These findings underscore the potential of improving soil micronutrients to enhance human health and nutrition.

Suggestions:
- It suggests that improving soil health could be an economical and effective solution. For instance, the Union government approved the fortification of rice, a staple food, in all government food schemes in August 2021.
- However, concerns have been raised about the indiscriminate distribution of fortified rice, especially to those suffering from thalassemia and sickle cell disease.
- A study published in Scientific Reports in August 2023 states that applying minerals like zinc, iron, boron, and sulphur to wheat and rice can increase crop yields. In India, applying zinc to crops on zinc-deficient soils increases yields of rice, wheat, maize, and oats by over 75% more than applying only nitrogen, phosphorus, and potassium fertiliser.
- Zinc-enriched fertilisers can enhance soil zinc for three to four years after application, suggesting it could be an effective long-term intervention.
- However, the study calls for more research to consider the costs of such an intervention and the impacts on human nutrition.
- Doctors often prescribe zinc tablets or multivitamins for different health issues, and the costs of these should be compared with the costs of improving soil health.

4. Sitting Duck- India agrees to lower tariffs on US poultry imports

India has recently decided to lower import duties on frozen turkey and duck from the United States from 30% to 5%, marking the end of a 17-year trade dispute at the World Trade Organization (WTO).

Details:
- This agreement also includes tariff reductions on other products such as chickpeas, lentils, nuts, fruits, boric acid, and diagnostic reagents.
- However, this decision has raised concerns within the Indian poultry industry.
- They fear that the agreement will allow the US to flood the Indian market with cheap and low-quality meat, which could potentially harm the domestic market and the health of consumers.
- The trade dispute dates back to 2007 when India banned poultry imports from the US due to concerns over avian influenza, commonly known as bird flu.
- The US challenged this ban at the WTO and won the case in 2014. Consequently, India opened up its markets to US poultry imports in 2017 but imposed high import duties to protect domestic players.
- The US poultry industry primarily consumes fillets, made from the breast meat of birds, and exports the remaining bird parts to developing countries at low prices.
- This practice could affect the demand and price of chicken in India, where most consumers prefer whole birds or leg pieces.
- Moreover, the agreement raises concerns over the quality and safety of US poultry. The US poultry is often fed with genetically modified (GM) grains, antibiotics, and hormones. India currently lacks adequate testing facilities or standards to check for these substances in imported meat.

- This agreement seems to contradict India's policy of promoting self-reliance and doubling farmers' income in the poultry sector, which is one of the fastest-growing segments of the agricultural sector in India. Poultry farming provides livelihoods to millions of small and marginal farmers, especially in rural areas.
- Furthermore, India was one of the major countries that led an alliance of developing countries to fight US subsidies at the WTO. If India allows easy import of subsidised US agricultural products, it is not only giving up on its long-held stand at the WTO, but also letting down other developing countries that fought with India on US subsidies.
- Lastly, the agreement also undermines India's commitment to the Paris Agreement on climate change.
- The US poultry industry is a significant source of greenhouse gas emissions and environmental pollution.
- Instead of promoting such practices, India should focus on promoting sustainable and organic poultry production, which is better for the environment and human health.

5.   Conquest of lantana

Recently, the first crop was sown on the land in more than two decades in Manikpur Raiyat village in the tribal district of Mandla, Madhya Pradesh. The land was taken over by lantana (Lantana camara), one of the worst invasive species in the world, and was lying fallow all these years.

Spread of Lantana Camara in India
- Lantana is **not** native to India. It was **introduced in the country as an ornamental plant by the British in the 1800s**. According to a recent study in the Journal of Applied Ecology, **it has spread around 50 percent of the country's "natural areas".**
- A 2020 estimate by researchers, published in the journal **Global Ecology and Conservation, shows that Lantana camara occupies 40 percent of forests,** including tiger reserves. A 2019 review paper published in Botanical Review states that lantana has also invaded most pasture lands in the country.

Issues with eradication of Lantana Camara
- It is **difficult to eradicate lantana because of its rapid spread**, intensity of infestation, allelopathy (chemicals released to discourage growth of native plants), opportunistic growth behaviour, reproductivity biology traits, and tenacious resistance to cutting and burning. **If the roots are not extracted properly, the shrub can start growing again**. Its seeds are also so light that they can be easily dispersed by the wind.

Boon for farmers
The removal of Lantana Camara from the Manikpur village in M.P has provided following benefits to the farmers:
- As per the reports 50 percent of the **farmers are now cultivating in the cleared lands**, while 94 per cent of them are using this l**and for open grazing or fodder collection.** Fodder availability from managed land has also increased
- According to the report, 46 percent of the **farmers have started getting forest produce like mahua and leaves of Coromandel ebony or tendu** (Diospyros melanoxylon) from restored land.
- Gond tribal families have been able to use land for grazing animals. There is a boost to biodiversity with trees like palash or Flame of forest (Butea monosperma) and jamun or Java plum (Syzygium cuminii) flourishing.

Way forward
- Curbing the spread of lantana requires consistent management. **Management of lantana must be included in works taken up under MGNREGA and the gram panchayat.**
- **Alternative use of lantana needs to be promoted, for example some tribal people across Madhya Pradesh are using lantana to make furniture**. Promoting more such commercial use will help boost efforts to curb the invasive shrub.

6.   Poor Substitutes

- The World Health Organization (WHO) recently classified the **artificial sweetener aspartame as "possibly carcinogenic to humans,"** casting a shadow over its safety and raising concerns about the role of sugar substitutes in managing blood sugar levels.
- Recent studies also suggest that sugar substitutes contribute to factors that lead to cardiovascular diseases, cancer and type-2 diabetes.

What are Sugar substitutes?
- Sugar substitutes, also known as non-sugar sweeteners (NSS) or non-nutritive sweeteners (NNS), are used in place of sugar or sugar alcohol. **They have minimal to zero calories as they don't break down into energy products like sugar**. Two main types include artificial (e.g., aspartame) and natural (e.g., stevia).

Aspartame's
- Aspartame is an artificial sweetener made up of compounds of carbon, hydrogen, nitrogen and oxygen ($C_{14}H_{18}N_2O_5$) and is approved by both the US Food and Drug Administration (USFDA) and the Food Safety and Standards Authority of India (FSSAI).
- It ranks second among all sugar substitutes globally, and in 2021, **India emerged as the largest market for aspartame, contributing nearly three-fifths of its sales.**

PRIME CULPRITS

The World Health Organization has placed aspartame in Group 2B that lists substances/activities/phenomenons that are possibly carcinogenic to humans

GROUP 1 (127 AGENTS)	GROUP 2A (95 AGENTS)	GROUP 2B (323 AGENTS)	GROUP 3 (500 AGENTS)
CARCINOGENIC: sufficient evidence in humans and animals to implicate role as a carcinogen	**PROBABLY CARCINOGENIC:** limited evidence in humans but sufficient evidence in animals	**POSSIBLY CARCINOGENIC:** limited evidence in humans or sufficient evidence in animals	**NOT CLASSIFIABLE AS CARCINOGEN:** inadequate evidence in humans and in animals
• Tobacco smoking • Alcohol consumption • Solar radiation • Ionising radiation	• Insecticide DDT* • Red meat • Night shift work • Emissions from high temperature frying	• **Aspartame** • Gasoline engine exhaust • Heavy metal lead	• Coffee • Mercury • Paracetamol • Crude oil

Figure: WHO classification of possible carcinogenic substance
Source: Down to earth

- The **International Agency for Research on Cancer (IARC),** the cancer research arm of the **World Health Organization (WHO),** decided to **place aspartame in Group 2B after reviewing various studies**. This group includes agents that demonstrate limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in animals.
- The Food Safety and Standards Authority of India (FSSAI) has appointed a scientific group to review evidence on sugar substitutes.

Food Safety and Standards Authority of India (FSSAI)
- The F**ood Safety and Standards Authority of India (FSSAI), operating under the Union Ministry of Health and Family Welfare,** serves as the **nodal agency responsible for formulating standards** to regulate the manufacture, storage, distribution, sale, and import of foods, including sugar substitutes.
- **FSSAI has approved the use of nine sugar substitutes in India,** which include saccharine, neotame, aspartame, sucralose, acesulfame-potassium, aspartame-acesulfame salt, erythritol, steviol glycoside, and thaumatin.

Issues with Sugar Substitutes
- **Type 2 diabetes:** Higher intake of non-nutritive sweeteners (NNS) is associated with an **increased risk of developing type 2 diabetes**. According to WHO, consuming NNS in beverages raises the risk by 23%, and tabletop sweeteners cause a 34% increase. **There is little evidence supporting the role of sugar substitutes in managing blood sugar or weight.**
- **Fat accumulation:** Animal studies indicate that artificial sweeteners like aspartame and saccharin may promote body fat accumulation. These sweeteners potentially increase appetite or intestinal enzyme activity.
- **Cancer:** Intake of Aspartame and acesulfame-potassium has shown a 1.15 and 1.13 times increased cancer risk, respectively.
- **Cardiovascular threat:** Overall artificial sweetener intake is linked to a 1.09 times increased risk of cardiovascular diseases. **Aspartame, acesulfame-potassium, and sucralose show 1.03, 1.18, and 1.11 times increased cardiovascular disease risk,** respectively.
- **Risk to children:** Obesity and type 2 diabetes rates are becoming higher among children. Pregnant women with high non-nutritive sweetener (NNS) intake face an increased risk of preterm birth, according to the UN health agency.
- **Regulation:** According to data from Statista, India is the world's second-largest market for sugar substitutes in terms of revenue. However, Artificial sweeteners in India are marketed directly without requiring health professionals' authorisation.
- **Diabetes Increase in India:** The Lancet Diabetes & Endocrinology paper in June 2023 reported a 23.7% rise in three years in cases related to diabetics in India.
- **Compliance and Labelling:** According to the Food Safety And Standards (Labelling And Display) Regulations, 2020, the purity of sugar substitutes should be mentioned on the package. However, these rules are frequently flouted by the manufacturers.

The World Health Organization (WHO) advises against relying on non-nutritive sweeteners (NSS) for weight control or health benefits. Their research suggests that replacing sugar with NSS doesn't offer long-term weight management advantages. Instead, the focus should be on reducing free sugars overall, by opting for unsweetened alternatives or naturally sweet foods like fruits.

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