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MOYAR VALLEY

Recent surveys show an increase in vulture numbers, highlighting the Moyar Valley's importance as a nesting site for critically endangered Gyps vultures

CURRENT AFFAIRS 30

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GENERAL STUDIES – 1

Topics: Modern Indian history from about the middle of the eighteenth century until the present- significant events, personalities, issues.

1. BHAGAT SINGH'S ENDURING REVOLUTIONARY VISION

Context:

Bhagat Singh's revolutionary career, though brief, left an indelible mark on the struggle for freedom and remains relevant in today's world

About Bhagat Singh:

Aspect	Description
Who was Shaheed Bhagat Singh?	Shaheed Bhagat Singh was an Indian nationalist and revolutionary who sacrificed his life for India's independence from British rule.
Early Life and Influences	Born on 27 September 1907 in Banga, Pakistan Punjab . He studied at Dayanand Anglo-Vedic School and later at Lala Lajpat Rai's National College . Influenced by family's involvement in progressive politics and British atrocities like the Jallianwala Bagh massacre.
Role in India's Freedom Struggle	He defied British rule by burning their textbooks and supported Gandhi's Non-Cooperation Movement
	Member of Hindustan Socialist Republican Association (HSRA) in 1924
	Founded Naujawan Bharat Sabha (1925) to rally peasants and workers against British rule. He was also associated with the Kirti Kisan Party
	Involved in protests, assassination of police officer Saunders , and bombing of Central Legislative Assembly (1929)
	Held hunger strike in jail for better conditions
	Advocated socialism, and secularism , and opposed capitalism and imperialism.
Ideology	Political Ideology: Bhagat Singh embraced Bolshevism and anarchism to advocate for militant nationalism in the 1930s.
	Social Ideology: He endorsed Gadar Party members' ideas and opposed Capitalism and Imperialism . He envisioned an anarchist society devoid of state control , religion, and private property, advocating for socialism and communism .
	Religion: He identified as an atheist , viewing religion as an impediment to the revolutionaries' fight for independence
Controversial Trial and Execution	Convicted in Lahore Conspiracy case , given a death sentence (along with Sukhdev and Rajguru). He was executed on 23 March 1931 , criticized for a one-sided trial and secret execution .
Literary Work	Wrote "Why I Am an Atheist" in Lahore jail.
Famous Quotes	<i>"Revolution is an inalienable right of mankind. Freedom is an imperishable birthright of all. Labour is the real sustainer of society"</i>
	<i>"Bombs and pistols do not make a revolution. The sword of revolution is sharpened on the whetting stone of ideas"</i>
	<i>"Force, when used violently, is 'violence' and is, thus, morally indefensible, but when it is used in support of a righteous cause, it has its moral legitimacy"</i>
	Last line of Bhagat Singh: In his last letter, Bhagat Singh wrote, " I have been arrested while waging a war. For me, there can be no gallows"
Legacy	Every year, the 23rd of March is observed as 'Martyrs' Day' or 'Shaheed Diwas' or 'Sarvodaya Day' to honour Shaheed Bhagat Singh, Rajguru and Sukhdev
	National Martyrs Memorial was built on the cremation spot of Shaheed Bhagat Singh in 1968. It also contains memorials of Rajguru and Sukhdev.
	Shaheedi Mela is held annually on 23 March when people pay homage at the National Martyrs Memorial

Relevance of his ideas in today's World:

Aspect	Relevance
Role in anti-colonial struggle	Bhagat Singh's dedication to India's freedom and socialism inspires those advocating peace and justice today
Advocacy for socialism	His belief in socialism and mass movements aligns with modern calls for social justice and equality.
Non-violent mass movements	Singh's shift towards non-violent mass movements as the core for change resonates with the need of today's world for non-violent peace settlements esp. in the current Russian-Ukraine conflict, the Gaza War, the ongoing conflict in Yemen and parts of Africa
Rejection of individual action	Bhagat Singh's rejection of individual heroic actions in favour of broader movements mirrors contemporary strategies for social change.
Criticism of religious exploitation	His critique of religion's misuse in politics reflects current concerns about religious polarization
Promotion of critical thinking	Bhagat Singh advocated for critical thinking , urging people to challenge established norms
Vision for an egalitarian society	His vision for an egalitarian, pluralist India resonates with modern aspirations for social equality and inclusion. He favoured a World Federation , which could be compared to the Indian idea of Vasudhaiva Kutumbukam
Support for student participation	Bhagat Singh's support for student political involvement aligns with contemporary calls for youth empowerment and political engagement.
Embrace of diversity	His commitment to inclusivity and unity serves as a guiding principle in today's diverse societies.

Conclusion:

Bhagat Singh's legacy endures as a beacon of courage, social justice, and ideological clarity. His revolutionary spirit continues to inspire generations, reminding us of the enduring pursuit of freedom and equality.

Mains Link:

Q. Since the decade of the 1920s, the national movement acquired various ideological strands and thereby expanded its social base. Discuss.

Prelims Link:

Q. The Ghadr (Ghadar) was a (UPSC 2014)

- (a) revolutionary association of Indians with headquarters at San Francisco
- (b) nationalist organization operating from Singapore
- (c) militant organization with headquarters at Berlin
- (d) communist movement for India's freedom with headquarters at Tashkent

GENERAL STUDIES – 2

Topics: Indian Constitution- historical underpinnings, evolution, features, amendments, significant provisions and basic structure; Comparison of the Indian constitutional scheme with that of other countries.

1. CITIZENSHIP AMENDMENT ACT RULES NOTIFIED

Context:

The government announced the **implementation of the Citizenship Amendment Act rules, four years after the bill was passed** in Parliament.

Rules:

1. **Eligibility:** Applicants must belong to persecuted minority communities from Afghanistan, Pakistan, and Bangladesh

and have entered India before **December 31, 2014**.

2. **Application Process:** Apply through the online portal provided by the Ministry of Home Affairs, providing the necessary documents and information.
3. **Documentation:** Submit required documents such as proof of identity, residence, and eligibility for the specified minority communities.
4. **Oath of Allegiance:** All cleared applicants must take an oath affirming allegiance to the Indian Constitution.
5. **Empowered Committee Review:** Applications will be reviewed by an empowered committee to determine eligibility.
6. **Digital Certificate:** Successful applicants will receive a digital certificate of citizenship or naturalization.
7. **Physical Certificate:** Applicants can request a physical certificate, which must be collected from the office of the Empowered Committee.

What is CAA?

The Citizenship Amendment Act (CAA) offers citizenship based on religion to **six non-Muslim communities (Hindus, Sikhs, Buddhists, Jains, Parsis and Christians) from Pakistan, Afghanistan, and Bangladesh** who entered India on or **before December 31, 2014**. It exempts these communities from criminal cases under the **Foreigners Act, 1946, and the Passport Act, 1920**, which penalize illegal entry and overstaying on expired visas and permits.

Background of the Act:

Citizenship in India **is governed by the Citizenship Act, 1955**, offering acquisition through **birth, descent, registration, naturalization, or incorporation of territory**. Illegal migrants, entering without valid documents or overstaying, cannot become citizens and may face jail or deportation under the Foreigners Act, 1946, and Passport Act, 1920.

In 2015-2016, **specific groups of illegal migrants (Hindus, Sikhs, Buddhists, Jains, Parsis, Christians from Afghanistan, Bangladesh, and Pakistan)** arriving **before December 31, 2014**, were exempted from deportation. **The Citizenship (Amendment) Act, 2016** aimed to grant citizenship to these migrants, lapsed with the dissolution of the **16th Lok Sabha**.

Key Features of the Act:

Key Features	Details
Citizenship on the basis of religion	The Act grants citizenship based on religion for the first time , specifically to non-Muslim communities from Afghanistan, Bangladesh, and Pakistan who entered India on or before December 31, 2014 .
	Hindu, Sikh, Buddhist, Jain, Parsi, and Christian communities from the mentioned countries are eligible for citizenship. Other communities are not covered under this provision.
Exceptions	The citizenship provisions for illegal migrants do not apply to regions protected by the 'Inner Line' permit system and areas under the Sixth Schedule of the Constitution .
Citizenship by Naturalization	The Citizenship Act, 1955, requires residency in India during the last 12 months and for 11 of the previous 14 years for naturalization. The amendment reduces the residency requirement from 11 years to 5 years for applicants belonging to the specified six religions from the three mentioned countries.
Cancelling Overseas Citizen of India (OCI) Registration	The act grants the government authority to cancel Overseas Citizen of India registration for violations of the Citizenship Act or other laws.
	The Supreme Court has noted the necessity of guiding the nature of laws subject to OCI registration cancellation , to ensure the limitation of authority's powers and prevent arbitrariness.

Qualifications:

1. **Applicants must submit documents** such as birth certificates, rental agreements, and educational certificates issued by authorities in Afghanistan, Pakistan, or Bangladesh.
2. Documents **proving entry into India before December 31, 2014**
3. The applicant must provide an **"eligibility certificate" from a local community** institution, confirming their membership in the Hindu, Sikh, Buddhist, Jain, Parsi, or Christian community.
4. **The person has to** present affidavits **verifying the application's accuracy** and the character of the applicant by an Indian citizen.
5. Applicants must have **adequate knowledge of a language listed in the 8th Schedule** of the Indian Constitution.
6. If the person is a citizen of another country, **renouncing the citizenship of another country is mandatory**, with

an irrevocable declaration upon approval of Indian citizenship.

Applications are **submitted electronically to the Empowered Committee through the District Level Committee** notified by the Central Government, which scrutinizes and grants citizenship based on the fulfilment of criteria.

The citizenship application process will be **conducted online**, overseen by an empowered committee, which will scrutinize all applications through district-level committees.

Each state's empowered committee, chaired by the **Director of Census Operations**, will include officers from various government departments and invitees (Intelligence Bureau, Post Master General, State or National Informatics Centre, along with a representative each from the Department of Home and Divisional Railway Manager as invitees).

District-level committees, led by the Senior Superintendent or Superintendent of Post, will also play a crucial role.

Need of the Act:

Citizenship Amendment Act 2019

Why India Needs Citizenship Amendment Act?

India aims to grant quicker citizenship to those refugees who have faced religious persecution in neighbouring countries.

Migrants stock by origin (2013)

Origin	Population
Bangladesh	32,30,025
Pakistan	11,28,796
Nepal	55,30,550
Sri Lanka	15,80,883
Myanmar	51,52,9

International migrants in India (in thousands)

Year	Population
2000	6,411.30
2019	5,154.70

Refugees as a share of international migrants 2019 (percentage) in India: 4.0

Know More about CAA History

- 1955: Citizenship Act was first enacted in 1955.
- 2016: The Citizenship (Amendment) Bill was introduced in Lok Sabha on 19th July 2016.
- 2019: Lok Sabha passed the bill on 9th Dec 2019.
- 2019: Rajya Sabha passed the bill on 18th Dec 2019.
- 2019: President approved the Act, Notified in Gazette on 12th Dec 2019.

Some Fact & Myths on CAA

Amendments to the existing Act

- Migrants will be provided with Indian citizenship if:
 - They are from Afghanistan, Bangladesh or Pakistan.
 - They belong to the following religions: Hindu, Sikh, Buddhist, Jain, Parsi or Christian.
 - They are currently staying in India.
 - They have migrated to India before December 31st, 2014.
- OCI registration: provision to opt for OCI registration in case the citizen violates any law in force specified by the Central government.
- Who are excluded?
 - Irred origins of Assam, Meghalaya, Mizoram or Tripura as included in the sixth schedule to the Constitution and the areas ther notified under the Bengali (Eastern Frontier) Regulation, 1873.

Myth Busters!

- Existing Indian citizens will not be affected by the amendment.
- CAA is not against Muslims. Its only purpose is to ensure the wellbeing of the migrants who faced religious persecution.
- CAA provisions are applicable for refugees who have migrated before Dec. 31, 2014 and who have experienced religious persecution.

Arguments in favour of the Citizenship Amendment Act (CAA):

1. **Discrimination faced by Minorities:** Pakistan, Afghanistan, and Bangladesh are Islamic republics, and minorities such as Hindus, Sikhs, Buddhists, Jains,

Parsis, and Christians face discrimination and persecution.

- a. **The CAA aims to provide refuge to those who fled to India seeking safety** due to religious persecution.
2. **Historical precedents:** India's historical commitment to protecting minorities facing persecution in neighbouring countries is **underscored by significant events such as the Partition of British India in 1947** and the signing of the **Indira-Mujib Pact in 1972** (the pact facilitated the return and absorption of **over 1.2 million refugees**, primarily Hindus, who sought shelter in India during the Bangladesh Liberation War)
3. **Easing of procedure:** The act **reduces the residency requirement for citizenship** by naturalization from **12 to 7 years**

Concerns with the Citizenship Amendment Act (CAA):

1. **Targeting a particular community:** Critics fear that the CAA, coupled with the **National Register of Citizens (NRC)**, may favour **non-Muslims** while requiring excluded Muslims to prove their citizenship, potentially discriminating against Muslims.
2. **Issues in the Northeast:** The Act contradicts the Assam Accord of 1985 (the accord opposed illegal immigrants from all the regions), raising concerns about the impact on the demographic balance and resources of Assam, where illegal Bangladeshi migrants have settled.
3. **Violation of fundamental rights:** Opponents argue that the Act **violates Article 14** of the Constitution, which guarantees equality, by discriminating on the basis of religion.
4. **Discriminatory nature:** Critics highlight that the Act excludes refugees like **Tamil Sri Lankans and Hindu Rohingyas**, leading to accusations of discrimination based on religion.
5. **Exclusion of certain minorities:** Critics suggest that if the law aims to protect minorities, it should include persecuted Muslim groups like **Ahmadis in Pakistan and Rohingyas in Myanmar**.
6. **Administration challenges:** Differentiating between illegal migrants and persecuted individuals poses administrative difficulties.
7. **Impact on bilateral ties:** The Act may strain relations with Pakistan, Afghanistan, and Bangladesh, as it highlights religious oppression in these countries.
8. **Linkage with NRC:** The Citizenship Amendment Bill (CAB) is closely linked to the **Citizens' register (NRC)** because it aims to protect non-Muslims excluded from the register, allowing them to gain citizenship.
 - a. This means **Bengali Hindu migrants left out of the NRC** in Assam can still obtain citizenship. If the nationwide NRC is implemented, those excluded would be divided into **Muslims deemed illegal migrants and others**

protected by the CAB if they are from Afghanistan, Bangladesh, or Pakistan. Together, the NRC and CAB could reshape citizenship rights in India.

Way Forward:

India's initiative to protect persecuted minorities in its neighborhood is commendable, but it must align with constitutional principles. Transparency in notifying CAA rules is crucial to address concerns. The Supreme Court must ensure fair procedures and examine whether the religious test for citizenship is arbitrary or discriminatory. It should assess if excluding long-term refugees violates their constitutional rights and impacts India's secular identity.

Insta links:

- [Citizenship \(Amendment\) Act Rules](#)

Topics: Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.

2. FISCAL FEDERALISM: KERALA'S GOVERNMENT CASE AGAINST CENTRE

Context:

The Supreme Court advised Kerala to meet with the Centre's team again and accept the ₹13,608 crore offered to address the immediate financial crisis in the state.

What is the case about?

The issue revolves around the Centre's imposition of a Net Borrowing Ceiling (NBC) on Kerala, restricting the state's borrowing capacity. Kerala challenges the legality of NBC in the Supreme Court, arguing that it hampers the state's ability to finance essential services and welfare schemes.

What is Net Borrowing Ceiling (NBC)?

The Net Borrowing Ceiling (NBC) is a restriction imposed by the central government on the borrowing capacity of states in India. It limits the amount of funds that states can borrow from various sources, including open market borrowings.

As of December 2023, the normal net borrowing ceiling for states in India is ₹8,59,988 crore, or 3% of the state's gross domestic product (GDP). However, the government has approved an additional borrowing ceiling of ₹60,880 crore for 22 states to participate in the National Pension Scheme (NPS).

Aim of NBC: It aims to regulate state finances and prevent excessive borrowing, ensuring fiscal discipline.

Extra-budgetary borrowing included under NBC:

Centre has included the debt taken by state-owned enterprises in the NBC. As such, many states' statutory bodies (such as the KERALA INFRASTRUCTURE INVESTMENT FUND BOARD) cannot raise extra loans exceeding the 3% limit of NBC. This move has raised constitutional concerns regarding the central government's authority to regulate state finances.

Kerala's Arguments Against NBC:

1. Kerala argues against the imposition of the Net Borrowing Ceiling (NBC) on several grounds.
2. Kerala contends that including debts of state-owned enterprises, such as the Kerala Infrastructure Investment Fund Board (KIIFB), within the NBC framework raises constitutional concerns.
3. Kerala notes that the 15th Finance Commission Report does not explicitly recommend the inclusion of state enterprise debts in NBC calculations, further questioning the validity of this approach.
4. Kerala highlights Article 266(2) of the Constitution, asserting that transactions related to the public account fall within the jurisdiction of the state, thus challenging their incorporation into NBC calculations.
5. Kerala cites the Kerala Fiscal Responsibility Act, 2003, as a mechanism ensuring fiscal discipline within the state, thereby questioning the necessity for central intervention through the imposition of NBC.
6. Kerala references Article 202 of the Constitution and Entry 43 of the State List to assert the state's authority over its public debt and financial matters, challenging the central government's imposition of NBC as an infringement upon state autonomy.

What did SC say?

1. The Supreme Court urged Kerala to meet with the Centre's team and consider accepting the ₹13,608 crore offered (only half of what the Kerala government demanded) to address the immediate financial emergency in the state.
2. SC reasserted that Kerala Government has the right to reach court and the Centre cannot put conditions (that Kerala withdraws its suit) for releasing funds.
3. The case is ongoing in the SC

What is Fiscal Federalism?

Fiscal federalism deals with the division of financial powers as well as the functions between multiple levels of the government in a country. It has within its ambit the imposition of taxes as well as the division of different taxes between the Centre and the constituent units.

Constitutional Provision:

1. **Article 293 of the Constitution:** The executive power of a State extends to borrowing within the territory of India upon the security of the Consolidated

Fund of the State.

2. **Article 293(3)** restricts states from borrowing without the Government of India's consent if previous loans or guarantees exist.
3. **Parliament's authority over "Public Debt of the State"** conflicts with states' exclusive jurisdiction over public debt matters, as per **Entry 43 of the State List**.
4. Kerala argues that balances in the state's public account should be exempt from the NBC, citing Article 266(2) of the Constitution, which falls under the purview of the State Legislature.
5. **Article 131 of the Constitution**: The Supreme Court has exclusive and original jurisdiction in matters of law between states or between states and the Union.

For basics of Fiscal Federalism, Tools for Fiscal Federalism, Issues in Fiscal Federalism in India, Key principles that guided 15th Finance Commission recommendations, and Suggested measures for improving centre-state fiscal relations: [Click Here: Fiscal Federalism: Distribution of funds from Centre to States](#)

Insta Links:

- [Rethink the dynamics of India's fiscal federalism](#)
- [The poor state of India's fiscal federalism](#)

Prelims Links:

Q. Which of the following is/are included in the capital budget of the Government of India? (UPSC 2016)

1. Expenditure on acquisition of assets like roads, buildings, machinery, etc.
2. Loans received from foreign governments
3. Loans and advances granted to the States and Union Territories

Select the correct answer using the code given below:

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

Ans: D

[Topics: Parliament and State Legislatures – structure, functioning, conduct of business, powers & privileges and issues arising out of these.](#)

3. SC REVOKES IMMUNITY FOR MPS AND MLAS IN THE BRIBERY CASE

Context:

The Supreme Court ruled that **MPs and MLAs can't claim immunity for bribery**. [Article 105\(2\) and 194\(2\)](#) protections have been overturned.

- The case involved **Sita Soren** (daughter-in-law of

JMM chief Shibu Soren) accused of taking bribes for the vote.

What is a Bribe-for-vote?

Bribe-for-vote refers to the act of offering or **accepting a bribe in exchange for casting a vote in a specific manner**, typically during elections or legislative proceedings. It undermines the integrity of the electoral process and is considered a form of corruption.

Examples of Bribe-for-vote:

1. **Cash-for-vote Scandal (2008)**: During a trust vote in the Indian Parliament in 2008, several Members of Parliament (MPs) were allegedly offered bribes to vote in favour of the ruling coalition
2. **Jharkhand Mukti Morcha (JMM) Bribery Case (1993)** (also known as **P V Narasimha Rao case**): In this case, JMM chief and former Union Minister Shibu Soren and some of his party members were accused of accepting bribes to **vote against a no-confidence motion against the then Prime Minister P.V. Narasimha Rao's government**.
 - a. The Supreme Court had **quashed the case against the JMM MPs**, citing immunity under **Article 105(2) of the Constitution**

What does Article 105(2) and 194(2) say?

Articles 105(2) and 194(2) **grant immunity to members of Parliament and state legislatures** from prosecution in courts for **anything said or any vote given in the respective legislative bodies**. This immunity ensures that legislators can perform their duties without fear of legal consequences.

What is the present case about?

Sita Soren Bribery Case (2012): Sita Soren, a member of the Jharkhand Mukti Morcha (JMM), was accused of accepting a bribe to cast her vote in favour of a certain candidate in the Rajya Sabha elections of 2012. She claimed immunity under **Article 194(2), citing the SC 1998 Ruling in the P.V. Narasimha Rao Case**

Key takeaways from the 7-bench SC ruling:

1. **No violation of the doctrine of stare decisis**: The Court can change prior rulings, such as in the P.V. Narasimha Rao case if it has wide ramifications on public interest, probity in public life, and parliamentary democracy.
 - a. **The principle of stare decisis** requires courts to follow **precedent**.
2. **Legislative privileges must conform with constitutional parameters**: Unlike the UK's historic rights, India's parliamentary privileges derive from statute and constitutional privilege, **subject to judicial review**.
3. **Constitutional immunity from bribery charges lacks a "two-fold test"**: Immunity from prosecution for

bribery contradicts the purpose of fostering debate and deliberation in the legislature, failing to meet the test of necessity for a legislator’s essential duties.

- a. **The “two-fold test” is used to determine the validity of claims to legislative privileges:** It involves (i) assessing **whether the privilege claimed is essential** to the collective functioning of the legislative body and (ii) whether the privilege claimed is **necessary for the discharge of the essential duties** of a legislator.
4. **Bribery not immune:** Bribery doesn’t enjoy immunity under **Article 105(2)** if it’s not intrinsic to the voting process, challenging the interpretation that any act related to parliamentary duties is immune from prosecution.
 - a. Accepting a bribe constitutes a **criminal offence**
5. **Courts and the House can exercise parallel jurisdictions:** The Court’s jurisdiction to prosecute bribery charges doesn’t interfere with the House’s authority to address breaches of discipline, as judicial proceedings and House actions operate independently.
6. **Corruption by legislators erodes the foundation of democracy:** Legislative corruption undermines democratic values and citizens’ representation, eroding probity in public life and creating a polity that deprives citizens of a responsible democracy.
7. **Legislative privileges apply equally to Rajya Sabha elections:** The principles regarding legislative privileges extend to Rajya Sabha elections and appointments of the President and Vice-President, ensuring consistency and adherence to constitutional principles.

Impacts of the Supreme Court’s judgment:

Positive Impacts	Negative Impacts
Upholds Judicial Review: Allows for reconsideration of past rulings, ensuring alignment with constitutional principles.	Potential Legal Uncertainty: Overturning established precedent may lead to legal uncertainty and interpretation challenges.
Combating Corruption: Strengthens the fight against corruption by removing immunity for legislators facing bribery charges.	Impact on Legislative Independence: Some argue that subjecting legislators to criminal prosecution may impede their independence and effectiveness in fulfilling their duties.
Preservation of Democratic Principles: Reinforces the integrity of democratic institutions by holding legislators accountable for their actions.	Political Ramifications: The judgment may have political ramifications, potentially affecting the candidates who had been elected through bribery.
Clarity on Bribery Offenses: Clarifies that bribery offences are not immune from prosecution, ensuring accountability and transparency in governance.	Challenges in Implementation: Implementing the judgment effectively may pose logistical and procedural challenges for law enforcement agencies and the judiciary.
Equal Application of Law: Ensures equal treatment under the law by removing special privileges for legislators accused of bribery.	

What are Parliamentary Privileges?

Parliamentary privileges are **special rights, immunities, and exemptions** enjoyed by MPs and MLAs, defined in **Articles 105 and 192** of the Indian Constitution. Members of Parliament and state assemblies are **exempted from civil liability (not criminal) for statements** or acts during their duties. These privileges are only applicable while they are serving as members; they cease once their membership ends.

Parliamentary Privilege	Description
Freedom of Speech in Parliament	Members of Parliament have the freedom of speech and expression , distinct from the general freedom guaranteed under Article 19(2) of the Constitution.
	Limitations: The freedom of speech is subject to constitutional provisions and parliamentary rules (Article 118). Members cannot discuss the conduct of judges under Article 121 , except in certain cases.
Freedom from Arrest	Members are immune from arrest in civil cases 40 days before and after a session . Within Parliament’s limits, arrest requires the house’s permission.
	Limitations: Members can be arrested outside Parliament’s limits for criminal charges under specific acts like the Preventive Detention Act, Essential Services Maintenance Act (ESMA), etc.

Right to Prohibit Publication	Article 105(2) grants immunity from liability for publishing reports or discussions under a member's authority . The public's awareness of parliamentary proceedings is crucial.
Right to Exclude Strangers	Members have the authority to exclude non-members from parliamentary proceedings to ensure free and fair discussion.

Parliamentary privileges

Collective for Parliament

Individual to Members

- 44th Amend. 1978 restored freedom of press to publish reports of parliament without prior. **But not of secret sitting**
- Exclude strangers from secret
- Make rules to regulate its own procedure
- Punish members/outside for breach of privileges / contempt (suspension or expulsion).
- Right to receive info. of the arrest, detention etc. of a member.
- Institute inquiries + order attendance of witnesses etc.
- Courts can not inquire into proceedings
- No member from proceedings can be arrested, without the permission of the presiding officer.

- Can't be arrested during session of Parliament & 40 days before/after. (privilege NOT available in CRIMINAL cases)
- Freedom of speech in Parliament. (Not liable to anything said or vote given in Parliament + committees.
- **Exempted from jury service.** CAN refuse to give evidence and appear as a witness in pending case (if session going on)

About the Privileges Committee:

It comprises **15 members in the Lok Sabha and 10 in the Rajya Sabha** and safeguards the freedom, authority, and dignity of Parliament. It examines breaches of privilege, determines facts, and makes recommendations. If a matter is referred, it **investigates and presents a report to the House for consideration**, followed by a debate and action based on the House's decision. Typically, it handles cases where MPs allege breach of privilege by outsiders or other MPs, with powers to recommend admonitions, reprimands, suspension, or expulsion, often resolved with an apology.

Insta Links:

- [Parliamentary privileges](#)

Mains Links:

Q. Individual parliamentarian's role as the national lawmaker is on a decline, which in turn, has adversely impacted the quality of debates and their outcome. Discuss. (UPSC 2019)

4. NEED FOR REFORMS IN ANTI-DEFECTION LAW

Context:

Six Himachal Pradesh MLAs, disqualified for cross-voting in the Rajya Sabha polls, have moved the Supreme Court against the Speaker's decision.

What is Anti-defection law (ADL)?

ADL in India, enshrined in the **Tenth Schedule of the Constitution**, aims to curb political instability by preventing elected representatives from switching parties. While it has achieved some success in its stated goal, there are concerns that it might also have unintended consequences, such as individual MP actions and opinions. The Parliament of India added it to the Constitution as the **Tenth Schedule in 1985 (52nd Amendment)**.

Aspect	Description
Anti-defection law	Aims to penalize individual MPs/MLAs for switching parties to ensure government stability.
	However, it allows a group (at least 2/3rd) of MP/MLAs to join/merge with another political party without inviting the penalty for defection.
What leads to defection?	Voluntarily leaving one's party. Voting against the party's directives
	When an independent MP/MLA joins a party later. A nominated legislator can join a political party within six months of being appointed to the House and not after such time
Deciding authority	Presiding Officers of the Legislature: Speaker, Chairman
	No specific time frame was provided for deciding defection cases
	Supreme Court suggests a decision within 3 months
	Legislators can appeal decisions to the higher judiciary

The SC's views on the 10th schedule:

- Manipur Judgment (2020):** The Supreme Court sets a three-month deadline for Speakers to decide on disqualification petitions, stressing prompt resolutions.
 - Kihoto Hollohan Case (1992):** Affirmed that the 10th Schedule isn't an unreasonable restriction on free speech and allows judicial review of the Speaker's order.
 - Ravi Naik and Balasaheb Patil Cases:** Defined 'voluntary giving up of membership' broadly, beyond resignation, including conduct like absenteeism or acting against party interests.
 - Vishwanathan Case:** Established that expelled members remain part of their original party unless joining a new one, averting instant disqualification.
 - Shiv Sena Case (2023):** Directed the Election Commission to assess a party's real representation using the organizational test, not just the legislative majority.
- merger without disqualification,** undermining representative democracy.
 - Recognition of Split:** The Law only recognizes party mergers, not splits, allowing wholesale defections.
 - Impact on Debate:** Shifts focus from debate to party loyalty, weakening parliamentary deliberations and democratic discourse.
 - Echo Chambers:** The law discourages open dissent within parties, which **stifles diverse perspectives** and limits constructive debate on policy issues.
 - Limited Accountability:** MPs are less likely to vote against their party line even if it goes against the wishes of their constituents. This reduces their **accountability** to the electorate and undermines the responsiveness of the political system.
 - Suppression of Conscience:** The law restricts MPs' freedom to vote according to their conscience on **moral, social or religious** issues.
 - Erosion of Trust:** The anti-defection law has been used by party leaders to punish dissent and silence criticism. This can erode **public trust** and **discourage participation** in democratic processes.

Defection Manipulation:

- Pre-Defection Tactics:** Defectors often submit no-confidence letters against the Speaker before defecting, citing loose interpretations of legal cases.
- Speaker's Bias:** Speakers, usually from the ruling party, show bias in deciding disqualification cases, affecting opposition and ruling party defectors differently.
- Election Commission and Party Symbols:** Defectors may seek recognition as the real party from the Election Commission, benefiting from a legislative majority test.
- Fast-Tracked EC Hearings:** While Speakers delay disqualification disputes, EC hearings are expedited, further legitimizing defections.
- Engineered Resignations:** Opposition parties engineer resignations in the ruling party, promising positions to defectors in a new government.

Challenges with Anti-Defection Law:

- Paragraph 4 Provision:** Allows two-thirds party

Reform Suggestions:

- Abolish the 10th Schedule:** Replace with a law mandating resignations and re-elections for party defectors.
- Prohibit Ministerial Posts sans Re-Election:** Bar defectors from holding ministerial positions without re-election to deter opportunistic defections.
- Remove Speaker's Adjudication Role:** Simplify the process to eliminate Speaker's involvement, mitigating bias and partiality.
- Select Neutral Speakers:** Establish a convention where parties agree on neutral Speaker's pre-elections to ensure fairness and impartiality.

International Experience:

Freedoms enjoyed by MPs in the United Kingdom and lessons for India:

- Conscience Votes:** UK MPs are free to vote against their party line on **matters of conscience**. This allows them to represent the views of their constituents

and uphold their personal beliefs.

2. **Whip conventions:** Defying a “three-line whip” in UK parliament is very serious, and the member is effectively **expelled from their party**, however, the member still keeps their seat and sits as an independent. This is contrary to ADL in **India** where the member is **expelled from the house**.
3. **Stronger Internal Party Democracy:** UK political parties have well-established internal democratic processes that encourage open debate and participation. This allows diverse perspectives to be heard and considered in policy decisions.
4. **Focus on Constituent Service:** UK MPs are more focused on serving their constituents and addressing their local concerns. This fosters a stronger connection between voters and their elected representatives.
 - **Eg:** In 2021, **55 MPs** from Prime Minister **Boris Johnson’s party** voted against their own government’s proposal for stricter lockdown restrictions.

Conclusion:

Thus, India might consider re-evaluating the balance between party discipline and individual freedom of MPs, learning from the UK’s system to enable more informed and independent decision-making. Finding this equilibrium could enhance the vibrancy of India’s parliamentary democracy while ensuring effective governance and accountability.

Insta Links: [Anti-defection law](#)

Mains Links:

Q. The role of individual MPs (Members of Parliament) has diminished over the years and as a result, healthy constructive debates on policy issues are not usually witnessed. How far can this be attributed to the anti-defection law, which was legislated but with a different intention? (UPSC 2013)

Prelims Links: (UPSC 2014)

Q. Which one of the following Schedules of the Constitution of India contains provisions regarding anti-defection?

1. Second Schedule
2. Fifth Schedule
3. Eighth Schedule
4. Tenth Schedule

Ans: 4

5. POWER OF WITHHOLDING BILLS PASSED BY STATE ASSEMBLY

Context:

Kerala will **challenge President Droupadi Murmu’s withholding of assent for Bills passed by the Kerala Legislature**, opening a constitutional debate on the scope of judicial review of the President’s decisions.

What is the case about?

The Kerala Assembly passed (in 2022) **University Laws (Amendment) Bills** to amend laws governing State universities. The Bills **aimed to end the Governor’s oversight and appointment role in state universities** and **empower the government to appoint Vice Chancellors** (instead of the Governor).

Critics feared that it would lead to the **erosion of university autonomy** and political influence in appointments.

Subsequently, the **governor referred the bill to the President in 2023**. The President has since then withheld assent to Kerala University Laws (Amendment No. 2) Bill 2022, University Law Amendment Bill, 2022, and the University Law Amendment Bill, 2021.

Governor’s and President’s powers related to universities:

1. **State Universities:** While as Governor he functions with the aid and advice of the Council of Ministers, as **Chancellor he acts independently of the Council of Ministers** and makes his own decisions on all University matters.
2. **Central Universities: The** President of India serves as the **Visitor**. President appoints Chancellors who preside over convocations.

The procedure for appointing a Vice-Chancellor under UGC rules involves the following steps:

1. **Recommendation by Search cum Selection Committee:** A panel of three to five names is recommended by the Search cum Selection Committee.
2. **Approval by Visitor/Chancellor:** The VC is appointed by the Visitor/Chancellor from the recommended panel.
3. **Option for Fresh Names:** The Visitor/Chancellor has the authority to request a new set of names if dissatisfied with the provided panel.
4. **Differences Across Universities:** While the President of India serves as the ex-officio Visitor for Central Universities and Governors serve as Chancellors for state universities, procedures can vary among universities across India.

Governor’s Power Regarding Bills:

Article 200 of the Constitution provides the Governor with four options when presented with a Bill passed by a State Legislature:

1. Give assent to the Bill.
2. Withhold assent, leading to the Bill’s failure to become law.
3. **Return the Bill** (if not a Money Bill) for reconsideration by the State Legislature. If passed again, with or without amendments, the Governor must give assent.
4. **Reserve the Bill** for the President’s consideration.

When can the Governor Reserve the bill for the President's consideration?

The Governor can reserve a bill for the President's consideration if:

1. It endangers the **position of the state high court**.
2. It is **ultra vires** (against the Constitution).
3. It opposes the **Directive Principles of State Policy**.
4. It goes **against the larger interest** of the country.
5. It pertains to **matters of grave national importance**.
6. It involves the **compulsory acquisition of property** under Article 31A of the Constitution.

Options for President on Bills reserved by Governor

When a bill passed by a state legislature is reserved by the governor for consideration by the President, the President can:

1. **Give his assent** to the bill, or
2. **Withhold** his assent to the bill, or
3. **Direct the governor to return the bill** (if it is not a money bill) for reconsideration by the state legislature.
4. **It is not obligatory for the President to give his assent** even if the bill is again passed by the state legislature and sent again to him for his consideration.

The President's power to withhold assent to a state bill is **derived from the Constitution of India, particularly Article 201**, which outlines the process. According to Article 200, when a bill is passed by the state legislature, it is presented to the Governor for assent, who then forwards it to the President for consideration. The President **has discretionary authority** to either approve or withhold assent to the bill, based on factors such as:

1. Constitutional violations
2. Conflicts with central legislation
3. Public interest

Conclusion:

The Constitution empowers governors to reserve bills for the President's consideration, a crucial discretionary power to ensure state laws align with the Constitution. However, allowing governors to act against the advice of the Council of Ministers creates a parallel administration. There is a need to clearly define the roles of the governor, president and the state government related to State bills.

Mains Links:

Q. Whether the Supreme Court Judgment (July 2018) can settle the political tussle between the Lt. Governor and the elected government of Delhi? Examine. (UPSC 2018)

Q. Discuss the essential conditions for the exercise of the legislative powers by the Governor. Discuss the legality of the re-promulgation of ordinances by the Governor without placing them before the Legislature. (UPSC 2022)

Prelims Links:

State Government's Arguments in this case:

1. **Bills' subject matters were confined to the State List** of the Constitution, where the State has powers to legislate.
2. None of the Bills **conflicted with any Central legislation**.
3. **Bills did not belong to special categories** requiring prior Presidential assent.
4. **Bills followed Ordinances cleared by the Governor** and should not have been sent for Presidential assent.
5. The reasons for the President's withholding assent were unknown, and **judicial review is necessary**.

Implications of President Withholding Assent to a State Bill:

Implications	Description
1. Legislative Stalemate	Withholding assent effectively prevents the bill from becoming law, leading to a legislative stalemate.
2. Impact on State Governance	The inability to enact the bill hinders governance and delays policy implementation, affecting the state's administration and residents.
3. Constitutional Conflict	The action may spark conflicts over the division of powers between the Centre and states, raising questions about the President's authority.
4. Political Implications	It may strain relations between the state and central governments, especially amid political tensions or differing ideologies.

Sarkaria Commission Recommendations:

1. The Sarkaria Commission recommended that the **Governor's discretionary power to reserve bills for the President's consideration** should be **limited to rare cases** of unconstitutionality.
2. It suggested that the **President should dispose of such bills within six months** and **communicate reasons** for withholding assent to the State Government where possible.

Q. Which of the following are the discretionary powers given to the Governor of a State? (UPSC 2014)

1. Sending a report to the President of India for imposing the President’s rule
2. Appointing the Ministers
3. Reserving certain bills passed by the State Legislature for consideration of the President of India
4. Making the rules to conduct the business of the State Government

Select the correct answer using the code given below:

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

Ans: B

[Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.](#)

6. ELECTION COMMISSIONER SELECTION: ENSURING INDEPENDENCE

Context:

The recent swift appointment of **two new Election Commissioners** (after the resignation of **resignation of Arun Goel**) has sparked criticism due to concerns about the independence of the ECI and its selection process.

- The two officials are the first to be appointed under the new Chief Election Commissioner and other [Election Commissioners \(Appointment, Conditions of Service and Term of Office\) Act, 2023](#)

About ECI:

Aspect	Information
Election Commission of India	The Election Commission of India (ECI) is an autonomous constitutional authority responsible for administering Union and State election processes in India. Established on January 25, 1950, in New Delhi.
Constitutional Provisions	Part XV of the Constitution (Articles 324-329) deals with elections and establishes the commission. Articles 324-329 outline its powers, including superintendence, direction, and control of elections.
Functions	Article 324 of the Constitution grants the Election Commission the authority over elections. It also says that the EC shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may fix from time to time.
	The Election Commission administers elections to the Lok Sabha, Rajya Sabha, and State Legislative Assemblies in India, and the offices of the President and Vice President in the country.
Structure of ECI	Originally single-membered , now multi-membered. Consists of the Chief Election Commissioner (CEC) and two Election Commissioners (ECs).
	Present Chief Election Commissioner: Rajiv Kumar
Qualification	No specific qualifications are mandated by the Constitution for Election Commissioners. Typically, senior civil servants, like Cabinet Secretaries, are appointed . This tradition ensures leaders with extensive administrative expertise and electoral process understanding lead the ECI.
Appointment & Tenure	Appointed by the President under the CEC and Other ECs (Appointment, Conditions of Service and Term of Office) Act, 2023. Serve a fixed six-year term or until age 65.
Removal	Can resign or be removed before term expiry. CEC’s removal requires Parliament’s process akin to a Supreme Court judge . ECs can only be removed upon CEC’s recommendation.

For the major feature of the [Election Commissioners \(Appointment, Conditions of Service and Term of Office\) Act, 2023:](#) [Click Here](#)

For Issues with the New Act: [Click Here](#)

The Election Commission of India (ECI) has achieved significant milestones:

1. **Conducting Free and Fair Elections:** ECI ensures fair elections, overseeing over 17 national and over 370 state elections since 1947.
2. **Inclusive Participation Initiatives:** E.g., ECI implemented **reserved constituencies** for Scheduled Castes and Scheduled Tribes

3. **Introduction of Voter ID Cards:** The ECI introduced the **Elector’s Photo Identity Card (EPIC) in 1993**, enhancing electoral integrity and reducing impersonation.
4. **Adoption of Electronic Voting Machines (EVMs) and VVPAT:** EVMs streamline voting, ensuring accuracy and reducing fraud.
5. **Implementation of Model Code of Conduct (MCC):** ECI enforces MCC, promoting fair campaigning and ethical practices.
6. **Innovative Use of Technology:** E.g., ECI developed the **cVIGIL mobile application**, allowing citizens to report election code violations directly,
7. **Voter Education Programs:** E.g., **SVEEP (Systematic Voters’ Education and Electoral Participation)**, to raise awareness about voting rights, the importance of participation, and making informed choices during elections

Issues Associated with the Election Commission of India:

1. **Constitutional Limitations:** No prescribed qualifications or terms for members.
2. **Post-retirement favours:** No prohibition on post-retirement appointments.
3. **Selection Committee Dominance:** The selection committee is dominated by government members in the new act. Potential compromise of ECI independence.
4. **Security of Tenure:** Election Commissioners lack guaranteed tenure.
5. **Lack of Financial Independence:** Reliance on Union Government for finances. Expenses not drawn from Consolidated Fund, limiting independence.
6. **Electoral Malpractices:** Irregularities in voter rolls and instances of fraud. A recent issue of electoral bond.
7. **Political Bias Allegations:** Allegations of bias and favoritism.
8. **Lack of Deregistration Authority:** ECI lacks the power to deregister parties for violations. **Unable to enforce inner-party democracy** or regulate finances.
9. **Accessibility and Inclusivity:** Challenges in ensuring universal voter access.

Way forward:

To strengthen the Election Commission of India, several key steps are essential.

- **Establishing an independent selection committee** comprising diverse stakeholders, as highlighted in the Anoop Baranwal vs Union of India Case, 2023, is crucial for ensuring fair appointments.
- **Enacting legislation with statutory safeguards** is necessary to define conditions for the removal of Election Commissioners, incorporating stringent criteria and procedural safeguards to prevent arbitrary dismissals.

- **Transparent funding mechanisms**, implemented through parliamentary processes or independent oversight, would enhance accountability and impartiality in fund allocation.
- **Empowering the ECI** to impose proportional punishments on guilty parties, from fines to deregistration, would ensure accountability and deterrence against electoral violations.

Additionally, **promoting inclusive participation** by addressing voter suppression, and discrimination, and ensuring accessibility for all voters, including those with disabilities, is essential. Finally, **fostering international collaboration** with electoral management bodies can facilitate knowledge exchange and adoption of best practices, enhancing the ECI’s credibility and effectiveness globally.

Conclusion:

India’s electoral system is globally acclaimed, with independent-minded election commissioners. However, establishing robust institutional mechanisms is crucial for credibility. Democracy hinges on strong institutions, necessitating efforts to enhance independence, autonomy, and transparency.

Insta Links:

- [How are the CEC and ECs appointed?](#)

Prelims Links:

Q.1 Consider the following statements: (UPSC 2017)

1. The Election Commission of India is a five-member body.
2. Union Ministry of Home Affairs decides the election schedule for the conduct of both general elections and bye-elections.
3. Election Commission resolves the disputes relating to splits/mergers of recognised political parties.

Which of the statements given above is/are correct?

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

Ans: D

Mains Links:

Q.1 In light of the recent controversy regarding the use of Electronic Voting Machines(EVM), what are the challenges before the Election Commission of India to ensure the trustworthiness of elections in India? (UPSC 2018)

Q.2 To enhance the quality of democracy in India the Election Commission of India has proposed electoral reforms in 2016. What are the suggested reforms and how far are they significant to make democracy successful? (UPSC 2017)

Topics: [Government policies and interventions for development in various sectors and issues arising out of their design and implementation.](#)

7. BHARATIYA SAKSHYA ADHINIYAM 2023

Context:

The Bharatiya Sakshya Adhiniyam introduces changes in electronic evidence provisions, addressing definitions and admissibility concerns.

What is Bharatiya Sakshya Adhiniyam?

The Bharatiya Sakshya Adhiniyam is **a new criminal law in India that replaces the Indian Evidence Act.** It introduces changes in provisions relating to electronic evidence, including definitions and admissibility procedures.

It is part of the **three new criminal laws, the Bharatiya Nyay Sanhita (replacing IPC), Bharatiya Nagarik Suraksha Sanhita (replacing CrPC), and Bharatiya Sakshya Adhiniyam (replacing IEA),** will be enforced from **July 1, 2024.** The Bharatiya Sakshya Adhiniyam **retains much of the Indian Evidence Act’s content,** with minor changes in secondary evidence scope and electronic evidence provisions.

Reforms in Indian Criminal Law



Provisions	Bhartiya Nyaya Sanhita Bill 2023	Bharatiya Nagarik Suraksha Sanhita Bill 2023	Bharatiya Sakshya Bill 2023
Replaces	Indian Penal Code, 1860	Criminal Procedure Code, 1898	Indian Evidence Act, 1872
Focus	Reflects Indian ethos, justice-oriented	Enhances citizens’ protection	Modernizes evidence presentation
Sections	356 sections (replacing 511)	533 sections (160 changed)	170 sections (23 changed)
Women and Children	A separate chapter dedicated to them; New offence: false promise of marriage, Employment etc.; Initiating children into crime made punishable.	Sexual intercourse on false promise of marriage, employment, etc., is a new offence.	
Digital Integration	Expanded definition of documents; Address newer crimes, cyber offences	Digitization of processes	Accepted documents include electronic and digital records, video recordings, emails, etc.
Speedy Trials	Summary trials, time limits	Trial expedited; 90-day window for investigation after chargesheet filing; Witness protection scheme to be made by states; Bail after serving 1/3rd of the maximum sentence for first-time offenders.	Video recording of search and seizure operations by the police
Victim Support	Compulsory status updates of victim support	Protection, timely information	Video recording of search and seizure operations by the police
Terrorism and Organized Crime	New definitions of Terrorism for 1 st time; Armed rebellion, separatist activities, organized crimes, etc.; Mob lynching made an offence explicitly	Harsher provisions against gangs	Define and address organized crimes
Fugitive		Trials for fugitives in absentia	
FIR	Zero FIR, e-FIR introduced	Zero FIR, e-FIR introduced; community service as punishment	Mandatory digitization of FIR, chargesheets; Mandatory use of Forensic services for offences punishable with 7 or more years
Sedition Law	Repealed		

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Major provisions of BSA 2023 (more detailed)

Provisions	Details
Provisions retained from Indian Evidence Acts	Admissible Evidence: Parties can present admissible evidence, classified as ‘facts in issue’ or ‘relevant facts’
	A Proven Fact: A fact is proven when the Court believes it to exist based on presented evidence.
	Police Confessions: Confessions made to police officers or in police custody, unless recorded by a Magistrate
Key Changes Incorporated in BSA, 2023	Documentary evidence includes electronic records
	Oral evidence can be given electronically
	Admissibility of electronic or digital records as evidence
	The precise definition of “document” includes electronic records
	Clarity on primary (electronic) evidence , allowing multiple stored recordings to be primary evidence
	Synchronization with IT Act, 2000 terms like ‘semiconductor memory’ and ‘any communication device’ for better visibility.

Concerns with BSA, 2023

- Tampering of Electronic Records:** The Supreme Court acknowledges susceptibility to tampering without safeguards, potentially leading to miscarriage of justice.
- Ambiguity in Admissibility of e-Records:** BSA includes electronic records but lacks clarity on admissibility criteria, potentially affecting trial fairness.
- BSA does little to reduce the discrimination faced by Accused** Within or Outside Police Custody
- Potential for Coercion in Obtaining Information:** Concerns regarding the circumstances under which information is obtained from individuals in police custody, with implications for the voluntariness and reliability of such evidence.
- Overreliance on Expert Opinions:** The requirement for expert opinions to validate electronic evidence may lead to an increased workload for forensic laboratories and potential delays in legal proceedings.

Steps for Enhancing BSA Effectiveness:

- Standing Committee Recommendations:** Mandate secure handling of electronic evidence, and ensure proper chain of custody.
- Guidelines by Karnataka High Court:** Introduce safeguards during search and seizure, including forensic examiner presence and Faraday bag usage.
- Law Commission Recommendations:** Address coercion-related evidence, and revise custody-related provisions for fairness.
- Malimath Committee Recommendations:**
 - Introduction of the ‘social welfare offences’** category for minor violations, allowing fines or community service as penalties.
 - Adoption of a ‘mixed system’ blending adversarial** and inquisitorial elements, empowering judges to actively participate in evidence collection.
 - Lowering the standard of proof for conviction** from **‘beyond reasonable doubt’** to **‘clear and convincing evidence’**.

International Experience:

The EU is reforming its approach to evidence by proposing a directive for mutual admissibility of electronic evidence in criminal proceedings. This reform aims to establish **uniform standards for electronic evidence** usage across member states. Key aspects include:

- Mandating the use of electronic evidence** only if its integrity can be verified
- Ensuring secure handling** from production to custody
- Involving IT experts** at the accused’s request for fair evaluation.

Insta Links:

- [Bill introduced: Reforms in Indian Criminal Law](#)
- [India’s Criminal Justice System](#)

Mains Links:

Q. Mob violence is emerging as a serious law and order problem in India. By giving suitable examples, analyze the causes and consequences of such violence. (USPC 2015)

Q. Comprehensive reforms are needed in the criminal justice system to ensure effective enforcement of the law, uphold accountability, have a well-trained workforce and speedy disposal of the cases. Comment. (250 words)

8. HIGH-LEVEL COMMITTEE REPORT ON ONE NATION, ONE ELECTION

Context:

The High-Level Committee on One Nation, One Election, led by **former President Ram Nath Kovind**, has proposed significant changes to **enable synchronized elections across India**.

What is One Nation One Election (ONOE)?

One Nation One Election is a proposal to **synchronize the timing of all elections in India, including those for the Lok Sabha, state legislative assemblies, and local bodies**. The aim is to streamline the electoral process, reduce campaign expenditures, minimize disruptions to governance, and enhance political stability by holding all elections simultaneously at regular intervals, **typically once every five years**. ONOE was the norm **until 1967** but after that cycle was broken. **Earlier Law Commission** also recommended the idea of ONOE in its report.

Key Recommendations of the High-Level Committee:

1. **Two-step approach for Simultaneous Elections (SE):** Synchronize Lok Sabha and State Legislative Assemblies (SLA) elections first, followed by Municipalities and Panchayats elections (M&PE).
 - i. **Amendments in Article 324A** are required for this synchronization, but states’ ratification is not necessary.
 - ii. The amendments needed for simultaneous elections are **outside the scope of Article 368(2)** and thus don’t require ratification by the states.
 - iii. Municipal and Panchayat elections should be held **within 100 days** of Lok Sabha and State elections.
2. **Dealing with hung House, adoption of no-confidence motion, and defection:**
 - i. For Lok Sabha, fresh elections should be held with tenure limited to the unexpired term of the previous Lok Sabha.
 - ii. For States, fresh elections should be held, continuing until the end of the full term of Lok Sabha.
 - iii. Amendments in **Article 83 and Article 172** are needed, but state ratification is not required.
3. **Single electoral roll and electoral identity cards:** An amendment to **Article 325 is recommended**, which will require states’ ratification.
4. **Presidential Notification:** A Presidential notification would set an “appointed date” for simultaneous elections.
5. **Constitutional Authority of Parliament for ONOE:** The Constitution mainly **entrusts Parliament, not states**, with the power to conduct Assembly elections.
 - i. **Under Article 328 of the Constitution** States have only residual powers on conducting Assembly elections; the power is mainly entrusted to Parliament through Article 327.

Constitutional Articles involved:

Article	Description	Amendment Required
Article 324A	Article 324 of the Constitution vests the Election Commission with the authority to supervise, direct, and control elections for Parliament, state legislatures, the President of India, and the Vice-President of India. The committee has suggested the inclusion of a new Article 324A in the Constitution.	This new article would empower Parliament to make laws to ensure that municipality and panchayat elections are held simultaneously with the General Elections (to Lok Sabha and state Assemblies) without requiring state ratification.
Article 83 and Article 172	Article 83(2) and Article 172(1) stipulate a five-year term for the Lok Sabha and state legislative Assemblies , respectively, commencing from their first sitting unless dissolved earlier.	The committee recommended an amendment for synchronizing Assembly elections with Lok Sabha polls, suggesting no need for state ratification.

Article 325	Article 325 prohibits the exclusion of any person from a special electoral roll based on religion, race, caste, or sex.	The committee suggested amendment for a single electoral roll and electoral identity cards, requiring state ratification.
Articles 328 and 327	Article 328: Power of Legislature of a State to make provision with respect to elections to such Legislature.	As per the committee, the Constitution empowers Parliament, not states , to conduct Assembly elections, implying that simultaneous poll amendments do not mandate state ratification.

Benefits of “one nation, one election”:

Benefits	Description
Reducing Election Expenditure	Conducting all elections simultaneously minimizes expenses on logistics, security, and campaigning. The Election Commission of India had pegged the expenditure for simultaneous elections at Rs 4,500 crore . In comparison, the 2014 Lok Sabha polls cost Rs 3,870 crore to the exchequer while the 2015 Bihar elections alone cost the government Rs 300 crore.
Better Governance	Simultaneous elections reduce distractions to governance and allow elected governments to focus on developmental and welfare activities.
Voter Convenience	Voters are spared from multiple rounds of voting throughout the year, ensuring better turnout and convenience.
Reduced Security Concerns	Simultaneous elections decrease security concerns by requiring a unified security setup across the country.
Level Playing Field	All parties and candidates have equal opportunities, promoting fairness and transparency in the electoral process.
Reduced Impact on Education	Simultaneous elections lessen the impact on the education sector by minimizing the involvement of teachers in the electoral process.

Limitations of “one nation, one election”

Challenges	Description
Ratification by States	The committee proposal that Ratification by states is not needed for most of the amendments may increase tension between the centre and states and also be struck down by Judicial Review In Kihoto Hollohan v Zachillhu (1992) , the Supreme Court invalidated a law related to lawmaker disqualification because it lacked ratification by the states.
Constitutional Challenges	Implementing “one nation, one election” requires lengthy and complicated constitutional amendments , necessitating consensus among political parties and states.
Anti-federalism	Combining assembly elections with general elections risks submerging regional issues under the national narrative , potentially undermining local representation.
Complexity of Logistics	Managing simultaneous elections entails significant logistical arrangements, including security deployment , electoral roll preparation, and polling booth management. It would require greater numbers of electronic voting machines (EVMs) and voter-verifiable paper audit trail (VVPAT) machines
Dominance by National Parties	Simultaneous elections may favour national parties with more resources, potentially disadvantaging regional parties and diminishing the representation of regional issues.
Impact on Democracy	Conducting simultaneous elections might limit voters’ engagement with all issues , possibly compromising informed decision-making and the overall democratic process.
Voter’s choice and interests	Simultaneous elections may shift voter focus to national issues, potentially favouring larger national parties over regional ones . This could marginalize regional parties and diminish voter interests. Additionally, separate elections enhance accountability by subjecting politicians to more frequent electoral scrutiny .

International Experience:

- i. **South Africa:** National and provincial legislature elections are simultaneous for five years, with municipal elections held two years later.
- ii. **Sweden:** Elections for the national legislature (Riksdag), provincial legislature/county council (Landsting), and municipal assemblies (Kommunfullmäktige) are held every fourth year on the second Sunday in September.
- iii. **Britain:** The Fixed-term Parliaments Act, 2011 ensures stability by holding elections on the first Thursday of May every fifth year, starting from May 7, 2015.

Way forward

- **Parliamentary standing committee on Law and Justice** recommended a **two-phase election schedule**, according to which elections to **some legislative assemblies whose term end within six months to one year before or after the election date could be held during the midterm of Lok Sabha**. For the rest of the states, elections could be held along with the general elections to Lok Sabha.
- Cost can be brought under control by ensuring that **the legal cap on the expenditure of candidates is followed by all parties**.
- **Concept of One year, One election** will be easier than ONOE, and will have the same benefits.

Conclusion:

While the **objectives** for simultaneous polls offer **considerable opportunities**, the **challenges involved and practical limitations** highlight the need for **wider political support and legislative amendments**. Going forward toward this goal, **elaborate deliberations and a consensus-based mechanism** for implementation are essential.

Insta Links:

- [Sansad TV: One Nation One Election](#)

Mains Link:

Q.'Simultaneous election to the Lok Sabha and the State Assemblies will limit the amount of time and money spent in electioneering but it will reduce the government's accountability to the people' Discuss. (UPSC 2017)

Prelims Links:

Q1. Consider the following statements: (UPSC 2020)

1. According to the Constitution of India, a person who is eligible to vote can be made a minister in a State for six months even if he/she is not a member of the Legislature of that State.
2. According to the Representation of People Act, 1951, a person convicted of a criminal offense and sentenced to imprisonment for five years is permanently disqualified from contesting an election even after his release from prison.

Which of the statements given above is/are correct?

- (a) 1 only

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

Answer: D

Q. Consider the following statements: (UPSC 2017)

1. The Election Commission of India is a five-member body.
2. The Union Ministry of Home Affairs decides the election schedule for the conduct of both general elections and bye-elections.
3. Election Commission resolves the disputes relating to splits/mergers of recognised political parties.

Which of the statements given above is/are correct?

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

Answer: D

9. DRAFT KARNATAKA GIG WORKERS (CONDITIONS OF SERVICE AND WELFARE) BILL, 2024

Context:

Following the footsteps of Rajasthan, Karnataka has introduced the **Draft Karnataka Gig Workers (Conditions of Service and Welfare) Bill, 2024** aiming to become the **second state** to enact legislation specifically catering to the welfare of gig economy workers.

What is a gig economy?

It is a labour market that **relies heavily on temporary and part-time positions** filled by **independent contractors and freelancers** rather than full-time permanent employees.

Who are Gig workers?

Gig workers refer to workers **outside of the traditional employer-employee relationship**. **There are two groups of gig workers.**

1. **Platform workers:** When gig workers use online algorithmic matching platforms or apps to connect with customers, they are called platform workers. E.g. Zomato Food Delivery
2. **Non-platform workers:** Those who work outside of these platforms are non-platform workers, including construction workers and non-technology-based temporary workers.

Status: According to the NITI Aayog estimates, **nearly 23 million** workers will be engaged in the gig economy by 2029 (currently the number is around **7.5** million)

Gig workers face significant challenges due to the nature of their employment:

1. They often **lack basic rights** such as minimum wag-

es, overtime pay, and medical leave.

2. **Resolution of employer-employee disputes** is not **statutorily bound**.
3. **Their status as both employees and independent contractors** excludes them from statutory benefits under various labour acts, including the [Minimum Wages Act](#), EPF Act, Payment of Bonus Act (for employees), and the Contract Labour Act (for contract labourers).
4. Gig workers are **excluded from the category of ‘unorganised workers’ or ‘wage workers’**.
5. They also **do not have the right to collective bargaining** – a fundamental principle of modern labour law.
6. All the above leads to the violation of their **fundamental rights under Articles 14 and 21** and comes within the meaning of forced labour under [Article 23](#).

Key Provisions of the Karnataka Gig Workers Bill include:

1. **Ensuring income security** for gig workers.
2. **Guaranteeing occupational safety** standards.
3. Imposing **penalties on aggregators** for violations.
4. Setting up a **state-level welfare board** for gig workers.
5. Implementing a **central transaction monitoring system**.
6. Charging **aggregators gig workers’ welfare fees**.
7. **Mandating fair terms of contract** between aggregators and gig workers.
8. **Strict norms for termination of work** and ensuring income security.
9. **Registration of gig workers** with the welfare board.
10. Providing gig workers with a **‘human point of contact’** for grievance resolution.
11. **Mandating aggregators to provide details** of all registered gig workers to the board.
12. Establishing a robust **grievance redressal mechanism**.

Previously, in 2023 Rajasthan government had made a similar bill.

Key provisions of the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill, 2023

Features	Details
About	The Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill aims to extend social security and welfare benefits to gig workers operating in the state.

Registration of Gig Workers	The bill mandates the registration of all gig workers with the state government to bring them under the ambit of labour regulations. Each gig worker will be assigned a unique ID , which will facilitate tracking their employment history and entitlements.
Access to Social Security Schemes	Gig workers will be granted access to a range of social security schemes . These schemes may include health insurance, accident coverage, and other welfare measures to provide financial support during emergencies.
Grievance Redressal Mechanism	The bill ensures that gig workers have the right to be heard and address any grievances they may have.
Establishment of Platform-Based Gig Workers Welfare Board	This board will be responsible for overseeing the welfare and rights of gig workers in the state . The Welfare Board comprises State officials, five representatives each from gig workers and aggregators, and two others (“one from Civil Society and another who evince interest in any other field”). At least one-third of the nominated members should be women.
Platform-Based Gig Workers Fund and Welfare Fee	The bill introduces a “Platform-Based Gig Workers Fund and Welfare Fee” to finance the social security measures for gig workers. The fund will be utilized to provide financial support and welfare benefits to gig workers during challenging times.
Fee Levied on Aggregators	Aggregators will be required to pay a fee for each transaction involving a platform-based gig worker. The specific percentage of the fee will be determined by the state government to contribute to the welfare fund .
Penalties for Non-Compliance	Aggregators failing to pay the welfare fee on time will be charged an interest rate of 12% per annum from the due date . The state government can impose fines of up to Rs 5 lakh for the first contravention and up to Rs 50 lakh for subsequent violations of the Act by aggregators.

Statutory Framework for Gig Economy in India:

1. **Code on Social Security, 2020:** Provides for extension of social security benefits to gig workers as well.
2. **Occupational Safety, Health and Working Conditions Code, 2020:** To promote a safe and healthy work environment and it also regulates contract labour.

Other best practices:

1. **Germany's Temporary Employment Act** provides for equal pay and equal treatment of gig workers.
2. **Singapore** has also proposed legislative changes to extend work injury insurance and pension coverage to such workers.

Insta Links:

1. [Issues faced by gig workers in India](#)
2. [Gig economy](#)

Mains Links:

Q. Examine the role of 'Gig Economy' in the process of empowerment of women in India. (UPSC 2021)

Q. How globalization has led to the reduction of employment in the formal sector of the Indian economy? Is increased informalization detrimental to the development of the country? (UPSC 2016)

Topics: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes.

10. SUB-CLASSIFICATION WITHIN SCs AND STs

Context:

The forthcoming judgment in **the State of Punjab vs Davinder Singh case** by a seven-judge Bench of the Supreme Court of India holds significant implications for affirmative action and reservations under the Constitution.

At the heart of the matter is the question of **whether State governments can sub-classify within Scheduled Castes (SC) and Scheduled Tribes (ST)** for public employment recruitment.

What is Sub-categorization within castes?

It involves **creating sub-groups** within Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs) for reservation and affirmative action purposes.

Aim: This process aims to **address intra-category inequalities** and ensure a fairer distribution of benefits and opportunities among marginalized communities.

Sub-classification will affect communities nationwide, such as **Balmikis and Mazhabi Sikhs in Punjab**, Madiga in Andhra Pradesh, Paswans in Bihar, Jatavs in UP, and Arundhatiyars in Tamil Nadu.

Background of the present case:

In the Past attempts at sub-categorization, States like Punjab, Bihar, and Tamil Nadu have faced legal challenges, reaching the Supreme Court. The Court, in the **2004 E.V. Chinnaiah vs**

State Of Andhra Pradesh case, emphasized that **only Parliament has the authority to create and notify SC and ST lists**. It was also cited that, **B.R. Ambedkar**, in his speech, had **cautioned against allowing State governments to amend the list** due to potential political motivations was highlighted.

However, in the 2020 State of **Punjab and Others vs Davinder Singh and Others case**, a five-judge Bench ruled that states could determine the extent of benefits within the existing lists without altering them significantly. This ruling contradicts the 2004 decision and has led to the 2020 judgment being **referred to a larger Bench for further clarification**.

Competence of States for Creating Sub-Classification

States have the authority to provide reservation benefits to SCs and STs under **Articles 15(4) and 16(4), and Articles 341(1) and 342(1)**.

1. **Article 15(4)** empowers states to create special arrangements for socially and educationally backward classes like SCs and STs.
2. **Article 16(4)** allows States to make provisions for reservation in promotion if SCs and STs are under-represented in state services.
3. **Articles 341(1) and 342(1)** permit the President, with consultation, to specify SCs and STs, including parts of these groups.

However, the **Chinnaiah judgement (2004) invalidated the Andhra Pradesh Scheduled Castes (Rationalisation of Reservations) Act, 2000**, for contravening Article 341. The Court emphasized that **only Parliament has the authority to modify the SC and ST lists** specified under Article 341.

Sub-categorize Scheduled Castes and Scheduled Tribes are needed:

1. **Addressing Intra-Group Inequalities:** E.g., In **Telangana, the Madiga Reservation Porata Samiti (MRPS)** is advocating for the internal reclassification of Scheduled Caste reservations. Despite constituting around 50% of the SC population in the state, Madigas feel their representation is being overshadowed by the dominance of another SC community, the Malas.
2. **Equitable Distribution of Benefits:** It prevents the concentration of benefits in the hands of a few dominant groups and promotes broader social inclusion.
3. **Constitutional Mandate:** Articles 15(4), 16(4), 341(1), and 342(1) of the Constitution empower states to create special arrangements and provisions for the welfare of socially and educationally backward classes, including SCs and STs
4. **Empowerment of State Governments:** Sub-categorization grants autonomy to state governments to tailor reservation policies according to the specific socio-economic conditions and needs of different sub-groups within SCs and STs, promoting localized

and targeted affirmative action measures.

5. **Enhancing Social Mobility:** Sub-categorization enables targeted measures to empower disadvantaged groups, fostering social mobility through education, employment, and political representation.

Challenges with Sub-Categorization of Caste:

1. **Inequality within Scheduled Castes:** Sub-categorization may not effectively address disparities, as the most backward communities may still remain marginalized despite a separate quota.
2. **Federalism Issue:** There's a constitutional dilemma regarding the authority of states to sub-categorize SCs and STs, with conflicting judgments from the Supreme Court on whether states have this power.
3. **Identification and Criteria:** Determining criteria for sub-categorization, such as socio-economic status or educational attainment, poses challenges due to the lack of consensus.
4. **Data Accuracy:** Obtaining accurate socio-economic data for different communities is difficult, hindering the decision-making process.
5. **Intra-group Disputes:** Sub-categorization may lead to internal conflicts and tensions among SC communities, potentially marginalizing certain groups from benefits.
6. **Possibility of Fragmentation:** There's a risk that sub-categorization could weaken the collective identity and strength of the community, leading to political and social fragmentation.

Suggestions for Sub-Classifying Caste Groups:

1. **Need for Wider Reading of Article 341:** Article 341 does not prohibit sub-classification, allowing states to provide special measures within the SC list.
2. **Following Reasonable Classification:** Reasonable classifications, such as sub-categorization for inter-se backwardness, are permissible under the Constitution.
3. **Judging Sub-Classification on Its Own Merits:** Sub-classification should be judged based on its merits, ensuring fair treatment for different caste groups.
4. **Exploring Alternatives:** Legal options, such as constitutional amendments, can facilitate sub-categorization, as suggested by the Attorney General of India and expert committees.
5. **Data Collection and Analysis:** Comprehensive data collection on the socio-economic conditions of caste communities is crucial for formulating effective policies.
6. **Concept of Creamy-Layer:** The concept of creamy layer, applied to SC and ST promotions since 2018, ensures reservation benefits reach those most in need.
7. **Criteria Development:** Transparent criteria consid-

ering socio-economic status, education, and regional disparities are essential for sub-categorization.

8. **Following the Middle Path:** Balancing recognition of diversity within SCs and STs with maintaining community unity is crucial for effective policies without causing fragmentation.

Committee Recommendations:

1. **Justice P. Ramachandra Raju Commission (1996):** Recommended sub-categorization of Scheduled Castes in Andhra Pradesh
2. **National Commission for Scheduled Castes (NCSC):** Advocated for measures to address intra-group disparities and
3. **National Commission for Scheduled Tribes (NCST):** Highlighted the need to prioritize existing schemes and government benefits to reach the most backward sections of Scheduled Tribes before considering sub-categorization.
4. **Usha Mehra Committee (2008):** Proposed the inclusion of **Clause (3) in Article 341** through a constitutional amendment, empowering state legislatures to enact reclassification of the Scheduled Caste category, subject to Presidential confirmation.
5. **Justice G. Rohini headed the Commission** for the Sub-categorisation of Other Backward Classes (OBC): Report submitted in August 2023

Conclusion:

Sub-categorizing Scheduled Castes is **crucial for addressing internal disparities and ensuring targeted social justice**. However, it requires careful consideration of constitutional provisions, data accuracy, and potential challenges to uplift marginalized communities effectively

Insta Links

- [Sub-categorization of Other Backward Classes](#)

Mains Links

Q. What are the two major legal initiatives by the State since Independence addressing discrimination against Scheduled Tribes (STs)? (UPSC 2017)

Prelims Links:

Q. Consider the following organizations/bodies in India: (UPSC 2023)

1. The National Commission for Backward Classes
 2. The National Human Rights Commission
 3. The National Law Commission
 4. The National Consumer Disputes Redressal Commission
- How many of the above constitutional bodies?

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

Ans: A

Q. With reference to the 'Changpa' community of India, consider the following statements: (UPSC 2014)

1. They live mainly in the State of Uttarakhand.
2. They rear the Pashmina goats that yield a fine wool.
3. They are kept in the category of Scheduled Tribes.

Which of the statements given above is/are correct?

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

Ans: B

Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

11. UNIVERSAL HEALTH COVERAGE IN INDIA

Context: Expanding Universal Health Coverage is a complex endeavour, but leveraging data and digital technology can streamline the process.

What is UHC? Universal Health Coverage (UHC) refers to a healthcare system where **all individuals and communities** have **access to the quality health services**, they need without facing financial hardship. Access to quality healthcare is a **fundamental right** for all individuals, rather than a privilege reserved for a few.

- Status:**
1. **The Indian Constitutional provisions (Art. 39E, 42, 47) mandate** the State to secure workers' health, improve living standards, and enhance public health.
 2. The United Nations designated **December 12th as International Universal Health Coverage Day (UHC Day)** in 2017
 3. **Sustainable Development Goal 3.8** aims to achieve universal health coverage
 4. **India aims to achieve Universal Health Coverage (UHC)** by expanding the Ayushman Bharat-[Pradhan Mantri Jan Arogya Yojana](#) (AB-PMJAY), its flagship publicly financed health insurance (PFHI) scheme

Challenges in Implementing UHC in India:

Challenges	Description
Inequitable Access to Health Insurance	Lowest health insurance coverage among households under the underprivileged sections. NFHS-5 results show only about 36% coverage among lowest lowest-wealth households.
Poor Finance	India's current health expenditure stands at approximately 3.2% of its GDP , significantly lower than the average of around 5.2% observed among Lower- and Middle-Income Countries (LMIC).
Lack of Financial Protection	Despite schemes like Janani Shishu Suraksha Karyakram, high out-of-pocket expenditure for deliveries , particularly in urban areas
Inclusion and Exclusion Errors	Government Schemes are prone to inclusion and exclusion errors , potentially including ineligible households and excluding eligible ones.
Inadequate Availability of Services	56% of PMJAY empanelled hospitals in the public sector, and 40% in the private for-profit sector, indicating unequal service availability
Inadequate Infrastructure	Lack of proper infrastructure, including health facilities, equipment, and medical supplies, hinders UHC The shortfall of over 79% specialists at Community Health Centers compared to the requirement. Lower bed density: (number of hospital beds per 1000 population) in India is 1.0 while in low-income countries it is 1.2, in middle-income countries it is 2.4 while in the world it is 2.7. 72 per cent of hospital beds in India are available in urban areas, while 28 per cent are in rural areas.
Poor Health Education	Lack of education and awareness about healthy lifestyles and preventive measures contributes to preventable illnesses and conditions.

In line with the objectives of UHC, the government has taken the following measures:

1. **Ayushman Bharat:** Launched in 2018. It consists of two components: Health and Wellness Centers (HWCs) and the Pradhan Mantri Jan Arogya Yojana (PMJAY). PMJAY provides health insurance coverage.
 - a. A study in 2021 found the scheme is **associated with a 21% decline in out-of-pocket health expenditure.**
2. **National Health Mission (NHM):** aims to provide accessible, affordable, and quality healthcare to rural and underprivileged populations.
 - a. Utilization of public health facilities for institutional deliveries **increased from 56% to 69%** in rural areas by 2019.
3. **National Ambulance Service-102:** Setup as part of the National Health Mission, operates 20,990 Emergency Response Service Vehicles. The '108' service aims at responding within the 'golden hour'.
4. **The National List of Essential Medicines (NLEM)** and the Essential Diagnostics Lists have been notified and are periodically updated to ensure the availability of more essential. The National Pharma Pricing Authority (NPPA) is set up to monitor the availability of drugs, identify shortages, if any, and to take remedial steps.
5. **The National Nutrition Mission** has set an objective of reducing the undernutrition, problems of stunting by 2%.
6. **Under India's G20 presidency, WHO launched the Global Initiative on Digital Health** to boost investments and facilitate international health exchange.
7. **Increasing doctor population ratio:** 1:854 is better than the World Health Organisation's standard of 1:1000. The number of UG (undergraduate) seats has increased from 51,348 before 2014 to 91,927 in 2022, which is an increase of 79 per cent.
 - a. Under the Central Sector Scheme for setting up new AIIMS, 22 AIIMS have been approved and undergraduate courses have started in 19 AIIMS.

Technology can be leveraged in the following ways to further augment it:

1. **Telemedicine:** allows remote consultation and diagnosis, enabling patients in rural and remote areas to access healthcare services.
 - a. **National telemedicine service of India, eSanjeevani** achieved 8 crore teleconsultations in 2022.
2. **Electronic Health Records (EHR):** can enhance the efficiency and accuracy of healthcare delivery. The health ID provided for each patient will be a repository of his health-related information.
 - a. **Ayushman Bharat Digital Mission (ABDM)** aims to develop the backbone necessary to support the integrated digital health infrastructure.
3. **Mobile Health (mHealth):** mHealth is an emerging concept involving the utilization of mobile devices and technology for health services, such as appointment scheduling, remote monitoring, and medica-

tion reminders.

4. **Artificial Intelligence (AI):** analyses large amounts of health data, identifies patterns and trends, and provides insights for developing new treatments and therapies thus reducing the workload of healthcare professionals and enhancing diagnostic accuracy.
5. **IoT: The Internet of Things** connects vital monitoring equipment giving a composite picture of the health of patients

Conclusion:

Ensuring healthcare as a right for all citizens is not only a moral imperative but also a key driver for social development and economic progress. WHO recommends reorienting health systems using the **primary healthcare (PHC) approach**, which can deliver 90% of essential UHC interventions. India should build on existing systems, implementing reforms and best practices incrementally for a healthier, more prosperous future.

Insta Links:

[Moving forward with a newer concept of Universal Health-care](#)

Prelims Link:

Q. With reference to the National Rural Health Mission, which of the following are the jobs of 'ASHA', a trained community health worker? (UPSC 2012)

1. Accompanying women to the health facility for antenatal care check-up
2. Using pregnancy test kits for early detection of pregnancy
3. Providing information on nutrition and immunisation.
4. Conducting the delivery of the baby

Select the correct answer using the codes given below:

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

Ans: (a)

Topics: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.

12. ASSESSING INDIA'S SOCIAL SECURITY PROGRAMS: PROGRESS AND CHALLENGES

Context:

The [article](#) evaluates welfare and social protection programs in India, noting progress but also highlighting shortcomings

What is Social Security?

Social security is a system implemented by societies/governments to provide individuals and households with **financial assistance and support during times of need or vulnerability**

ty. It ensures **access to healthcare and guarantees income security**, especially in situations such as old age, unemployment, sickness, disability, maternity, or loss of a breadwinner.

Status of Social Security:

1. **Global:** Almost **53% of the population in the world** has no social protection (56% in the Asia-Pacific) (as per [ILO: World Social Protection Report 2020-22](#))
2. **India:** In India over 76% have no social protection (Bangladesh has a higher % of people under social protection than India)
3. **Spending on social protection:** The world average is about **13%**, while that in India is **just 8.6% (eight points six)** (Economic Survey 2021-22)
4. **India's social security spending:** Lower than 5% of GDP per capita
5. **Around 53% of all of the salaried workforce** does not have any social security benefits in India, according to the **Periodic Labour Force Survey Annual Report 2021-22**
6. Only about **2% of the poorest 20% of India's workforce** have access to social security benefits

Issues with the Social Security in India:

Issues	Description
Lack of adequate budgetary allocation	The National Social Security Fund and other schemes suffer from insufficient initial allocations, leading to a lack of resources to meet the needs of vulnerable populations.
Policy Issues	E.g., The Social Security Code 2020 remains unimplemented even today
Lack of Competition	Monopolies like EPFO and ESI in work-related social security payments breed issues like high costs for employers, mistreatment of employees, and incentivize informality over formality.
Poor Fund Utilization and Management	E.g., The CAG audit found that ₹1,927 crore in the National Social Security Fund remained unused, while about 94% of the cess collected for construction workers' social security in Delhi went unspent.
Corruption and Leakage	E.g., In Haryana, the CAG found about ₹99 crore transferred to accounts of deceased beneficiaries , indicating loopholes in beneficiary identification and delivery mechanisms for social security benefits.
Inadequate Coverage and Benefits	E.g., The Centre's contribution to old-age pension schemes has remained stagnant at ₹200 per month since 2006, falling below the daily minimum wage. Restrictive eligibility criteria exclude many deserving beneficiaries, leaving out elderly individuals facing economic hardship
Budgetary Cuts	E.g., Reductions in budget allocations for programs like MGNREGA
Digital Divide	As of recent data, around 50% of India's population still does not have access to the internet
Informal Labour Sector	Over 90% of India's workforce works in the informal sector

Steps taken by India

Schemes/ Policies	Details
Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYM)	Voluntary and contributory pension schemes ; 50% monthly contribution by beneficiary, equal matching contribution by Central Government
Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)	Coverage of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization
Pradhan Mantri Awaas Yojana – Gramin (PMAY-G)	Aim to construct about 3 crore pucca houses with basic amenities by March 2024; Assistance of 1.2 Lakhs in plain areas, 1.3 Lakhs in Hilly Areas
Public Distribution System (PDS)	Provides 35 kg of rice or wheat monthly for households below the poverty line; Entitlements adjusted under ONORC for migrant workers
Atal Pension Yojana	Pension scheme offering Rs. 1000-5000 or accumulated sum after death
Pradhan Mantri Suraksha Bima Yojana (PMSBY)	Rs. 2 lakh coverage for accidental death and full disability; Premium at Rs. 20 per year

Pradhan Mantri Jeevan Jyoti Yojana (PMJJBY)	Rs. 2 lakh coverage on death due to any cause; Premium at Rs. 436 per year
Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	Allocation of Rs. 60,000 crores in Budget Estimate 2023-24; Recently notified new wage rates for unskilled manual workers for FY 2024-2025
Code on Social Security, 2020	Consolidates and simplifies nine previous laws related to social security; Covers employees in both organized and unorganized sectors
Employees' Provident Fund Organisation (EPFO)	Administers Employees' Provident Fund Scheme, Employees' Pension Scheme, Employees' Deposit Linked Insurance Scheme ; Provides retirement pension, provident fund, and life and disability insurance
Employees' State Insurance (ESI)	Self-financing social security scheme providing medical care and cash benefits; Covers employees in organized sector earning below a certain threshold
National Pension System (NPS)	Voluntary, defined contribution pension scheme for retirement savings; Open to all citizens of India , including those in the unorganized sector
National Social Assistance Programme (NSAP)	Provides support to aged persons, widows, disabled persons , and bereaved families; Belonging to below-poverty-line households

Steps for Social Security in India:

- Universal Coverage:** Implement **universal social security to cover** the entire labour force, consolidating existing schemes and ad hoc measures.
- Linking EPFO contributions to Aadhaar numbers** enhances effectiveness by enabling traceability, portability, and accessibility.
- Expand EPFO Contributions:** Increase contributions to the Employees' Provident Fund Organisation (EPFO) for formal workers, involving both employers and employees.
- Offering EPFO products to self-employed and gig workers**, addressing challenges of contractual employment.
- Government Support:** Provide **subsidies or social assistance** to vulnerable workers unable to contribute due to unemployment, underemployment, or low earnings.
- Digitization and e-Shram Platform:** Invest in digital platforms for streamlined registration, verification, and delivery of social security services, extending coverage and efficiency.
- Mandatory Social Security for Employers:** Enforce mandatory social security entitlements for employees by their employers to foster formalization esp. for Gig Workers.
- Pan-India Labour Force Card:** Introduce a nationwide labour force card for simplified registration and expanded coverage beyond specific sectors.
- Administrative Simplification:** Simplify the administrative framework of social security programs to reduce complexity and ensure better implementation.
- Raising Awareness:** Conduct awareness campaigns to inform more workers about available social security benefits, leveraging organizations like the Self-Employed Women's Association (SEWA) for outreach.

States Experience: The Madhya Pradesh Unorganised Workers Welfare Act offers a model for raising resources while strengthening existing schemes like EPF, ESI, and NSAP is vital.

International Experience:

- Brazil:** Brazil's extensive social security system, covering over 90% of the population, offers valuable lessons for India. **Brazil's General Social Security Scheme** is contribution-based, providing income replacement for workers and their families in partial or full loss situations. It includes **unemployment insurance funded by worker support funds and health care** through the Unified Health System.
- Germany:** Germany's robust social security system, founded on social insurance principles with contributions from both workers and employers, offers pensions, healthcare, unemployment benefits, long-term care, and family allowances. India can benefit from emulating Germany's social insurance model.
- Singapore:** Singapore's unique social security system promotes personal savings through a central provident fund for retirement, housing, healthcare, and education. India could adopt this approach to foster personal responsibility and flexibility for workers.

Conclusion:

To accelerate the **formalization of social security in India**, reforms are essential. Advocacy for competition, **championed by former finance minister Arun Jaitley**, suggests allowing employee choice in contributing to either EPFO or NPS. **Migrant data collection** and the proposed **Social Security Fund** under the Social Security Code, 2020, would further bolster efforts towards universal social security.

Insta Links:

- [ILO-UNICEF joint report on social protection for chil-](#)

[dren](#)

- [Programmes for Social Security Cover](#)

Prelims Links:

Q. What is/are the facility/facilities the beneficiaries can get from the services of Business Correspondent (Bank Saathi) in branchless areas? (UPSC 2014)

1. It enables the beneficiaries to draw their subsidies and social security benefits in their villages.
2. It enables the beneficiaries in rural areas to make deposits and withdrawals.

Select the correct answer using the code given below.

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

Answer: C

Both statements are correct

[Topics: India and its neighbourhood- relations.](#)

13. INDIA-BHUTAN RELATIONS: COOPERATION AND CHALLENGES

Context:

India and Bhutan recently strengthened their close ties with a visit from Bhutan’s Prime Minister to India. The discussions led to the signing of several agreements between the two nations.

Key Highlights of the recent India-Bhutan Bilateral Talks:

1. **Petroleum Agreement:** Both nations signed an agreement ensuring a reliable supply of petroleum products from India to Bhutan
2. **Food Safety Collaboration:** Bhutan’s Food and Drug Authority and India’s FSSAI signed an agreement to enhance cooperation in food safety measures, facilitating trade and reducing compliance costs.
3. **Energy Efficiency and Conservation:** An MoU on energy efficiency and conservation reflects a commitment to sustainable development, with **India assisting Bhutan in enhancing energy efficiency** and promoting the use of energy-efficient appliances.
4. **Border Dispute Resolution:** Ongoing discussions between China and Bhutan to resolve their border dispute were discussed, particularly **in the Doklam region**, with implications for regional security.
5. **Bhutan’s Regional Economic Hub in Gelephu:** Plans for a regional economic hub in Gelephu aim to foster regional development and connectivity

Various dimensions of cooperation between India and Bhutan with examples:

Dimension	Examples
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Strategic	Bhutan serves as a buffer between India and China, protecting the Siliguri Corridor (also known as Chicken’s Neck). The Doklam standoff (2017) has re-established Bhutan’s strategic significance for India. Bhutan does not have any formal diplomatic relations with China.
Historical	The Indo-Bhutan Treaty of Peace and Friendship of 1949, is the bedrock of India and Bhutan’s relationship
Economic	India is Bhutan’s largest trading partner (mostly in electricity). Also, increased trade with Bhutan benefits landlocked states like Assam and Arunachal Pradesh. India has decided to support Bhutan’s upcoming 13th Five-Year Plan (for 12 FYP, India had provided 4500Cr)
Assistance	As per India’s ‘Neighbourhood First’ policy , the largest share of the aid portfolio was granted to Bhutan in the interim budget 2024-25 For Bhutan’s 12th Five-Year Plan, India’s contribution of Rs 4,500 crore constituted 73% of Bhutan’s total external grant component
Cultural and Educational	Buddhism. India also offers various scholarships for Bhutanese students through Nehru-Wangchuck Scholarships, Ambassador’s Scholarship
Energy	India has constructed three Hydroelectric Projects in Bhutan (and exporting surplus power to India)—Chhukha HEP, Kurichhu HEP, and Tala HEP. India is also building Mangdechhu, Punatsangchhu 1 and 2 Hydroelectric Power Projects in Bhutan. Also, India will expedite the proposed Kokrajhar-Gelephu rail link project.
Regional	Both nations cooperate in regional forums such as BIMSTEC and SAARC.
Technological	E.g., the E-Library project and the India-Bhutan satellite, India’s Vaccine Maitri Initiative
Environmental	India is supporting Bhutan in its efforts to become carbon-negative.

Issues between the two countries:

1. **Border Dispute:** Disputes over the exact demarcation of the border between the two countries.
2. **Hydropower Projects:** Concerns in Bhutan over environmental and social impacts from the project. Also, Bhutan has sought greater revenue from these projects

3. **Trade Imbalance:** Bhutan is heavily dependent on India for its imports.
4. **Cross-Border Movement:** Bhutan has restricted the cross-border movement of Indian workers, citing concerns over the impact on Bhutan's culture and society.
5. **Political Interference:** Bhutan has accused India of interfering in its internal affairs, particularly during the 2013 elections.

Conclusion:

India-Bhutan relations have remained strong and friendly, characterized by a deep sense of trust and understanding. Both countries must enhance connectivity which is a central pillar of India's **'Neighbourhood First' and 'Act East' policies.**

About Bhutan:

It is a **landlocked country** nestled between India and China and is known for its mountainous landscape dominated by valleys. **Thimphu** serves as its capital city. After democratic elections in 2008, **Bhutan transitioned into a democracy**, with the King serving as the Head of State. It's referred to as the **'Kingdom of Bhutan' or Druk Gyal Khap**, translating to the **'Land of the Thunder Dragon'**. The longest river in Bhutan is the **Manas River**, spanning over 376 km and flowing through the Himalayan foothills between southern Bhutan and India.



Inta Links: [India-Bhutan](#)

Mains Link:

Q. Border management is a complex task due to difficult terrain and hostile relations with some countries. Elucidate the challenges and strategies for effective border management. (UPSC 2016)

Topics: Important International institutions, agencies and fora, their structure, mandate.

14. UN REFORMS: INDIA PRESENTS A DETAILED MODEL

Context:

India, representing the **G4 nations** (Participating in **Inter-governmental Negotiations** on UNSC reform), presented a **detailed model for UN Security Council reform**, proposing new permanent members elected democratically by the General Assembly and showing **flexibility on the veto issue.**

Key Highlights of the Proposed Model:

Highlights	Details
Enlarged Membership	11 Permanent members, and 14/15 non-permanent members with a 2-year term to be elected based on current practice.
Equitable Regional Representation	Representation of 6 new permanent members shall come from Africa (2), Asia-Pacific (2), Latin America and Caribbean (2), Western Europe and Other Member States (1).
Working Methods of Council	An affirmative vote of 14/15 of 25/26 members will be required for a decision.
Veto	No veto rights to new permanent members until decided by a review, held fifteen years after reform came into force.
Relationship between UNSC and UNGA	The council should hold regular consultations with the President of UNGA , submit annual reports and special reports to UNGA, etc.

Benefits of the proposed Model:

1. **Enlarged Membership:** Increasing the Security Council's membership from 15 to 25-26 allows for **greater representation of diverse perspectives** and regions, enhancing the Council's legitimacy.
2. **Equitable Regional Representation:** The proposed model ensures representation from underrepresented regions such as Africa, Asia-Pacific, Latin America, and the Caribbean, addressing the current imbalance in the Council's composition.
3. **Democratic Election of New Members:** New permanent members will be elected democratically by the General Assembly, promoting fairness and inclusivity in the selection process.
4. **Flexibility on Veto:** By delaying the exercise of veto rights for new permanent members until a review is conducted, the model **displays a willingness to compromise and facilitate constructive negotiations.**

5. **Enhanced Working Methods:** Requiring an affirmative vote of 14/15 members for decisions encourages **consensus-building and cooperation** among Council members.
6. **Improved Relationship with UNGA:** Regular consultations with the President of the UN General Assembly and submission of reports enhance transparency and accountability, fostering a stronger relationship between the Security Council and the General Assembly.
7. **Greater Acceptability:** E.g., France has expressed support for India, Japan, Brazil, and Germany's candidacy for permanent membership and endorsed the G4 model. The U.S. acknowledged the support for expanding both permanent and non-permanent seats on the Security Council.

Limitations:

1. **Uncertainty in the Selection Process:** The model does not specify **which member states will occupy the new permanent seats**, potentially leading to ambiguity and disputes during the democratic election process.
2. **Delayed Exercise of Veto:** While the model offers flexibility on the veto issue, delaying its exercise until a review introduces uncertainty and may hinder immediate decision-making on critical matters.
3. **Potential Resistance from Current Permanent Members:** The proposed reforms may face opposition from existing permanent members who wield veto powers, as it could dilute their influence and control within the Security Council.
4. **Complex Decision-Making Process:** Requiring an affirmative vote of 14/15 members for decisions could **lead to gridlock and inefficiency** in decision-making, particularly on contentious issues where consensus is challenging to achieve.

The article should be read in continuation of the previous article: [Future of United Nations: UN Reforms](#)

Conclusion:

Looking towards the future, the **21st century presents a myriad of complex challenges**, ranging from climate change to cybersecurity threats and economic inequality. Despite its imperfections, the **United Nations (UN) stands uniquely positioned to address these multifaceted issues**, given its convening power, diplomatic role, and extensive network of agencies. However, **realizing its full potential requires implementing reforms** to enhance its effectiveness. **Streamlining bureaucracy, reducing inefficiencies, and ensuring more equitable representation** within the organization are crucial steps towards achieving this goal. Despite these challenges, the **UN remains indispensable in global governance, humanitarian assistance, and crisis management**. While

the need for reform is evident, the UN's continued role in fostering cooperation, dialogue, and collective action underscores its enduring importance in tackling the world's most pressing problems.

About G4:

It consists of **Brazil, Germany, India, and Japan**, and aims to secure permanent seats on the UNSC. They mutually endorse each other's bids for permanent membership and regularly convene during the UN General Assembly sessions.

Inter-governmental Negotiations:

Intergovernmental Negotiations (IGN) is a **UN-based initiative focused on reforming the UNSC**. It involves various international organizations such as the African Union, G4 nations, Uniting for Consensus Group (UfC), L.69 Group of Developing Countries, Arab League, and Caribbean Community (CARICOM)

Insta Links:

- [If not reformed, the UN will be overtaken by other organisations](#)

Mains Links:

Q. What are the main functions of the United Nations Economic and Social Council (ECOSOC)? Explain different functional commissions attached to it. (10 M) (UPSC 2017)

Prelims Links:

Q. With reference to the "United Nations Credentials Committee", consider the following statements: (UPSC 2022)

1. It is a committee set up by the UN Security Council and works under its supervision.
2. It traditionally meets in March, June and September every year
3. It assesses the credentials of all UN members before submitting a report to the General Assembly for approval.

Which of the statements given above is/are correct?

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

Ans: (a)

15. UN SECURITY COUNCIL RESOLUTION ON GAZA

Context:

After **five and a half months of conflict in Gaza**, with significant casualties and displacement, the **UN Security Council called for an immediate ceasefire**.

What are UNSC resolutions?

A UNSC resolution is a **decision adopted by the UN Security Council**, responsible for international peace and security. **Article 27 of the UN Charter** requires an affirmative vote of

nine out of fifteen members for resolutions. Any of the five permanent members can veto resolutions, except procedural ones. The permanent members are China, France, Russia, the UK, and the US. **Article 25 obligates UN members to accept and implement UNSC decisions.** As of today, the Security Council has passed **2728 resolutions.** The ICJ has **affirmed the legal bindingness** of all Security Council resolutions.

If the Security Council fails to pass a resolution, it may issue a **non-binding presidential statement** adopted by consensus. These statements apply political pressure and signal the Council's attention, often indicating that further action may follow.

What does the current Resolution call for?

The resolution calls for

1. **Aid to reach Palestinian civilians**
2. **Release of hostages** held by Hamas
3. **Immediate ceasefire for the month of Ramadan** to be respected by all parties
4. **Adherence to international law**
5. Need for **sustained humanitarian aid**

The **US abstained from voting,** marking a shift in policy.

ISRAEL'S WAR ON GAZA

UN adopts resolution on ceasefire in Gaza

The UN Security Council adopts a resolution demanding an 'immediate ceasefire in Gaza for the month of Ramadan' leading to a lasting ceasefire, the 'immediate, unconditional release of all hostages' and humanitarian aid access.



The UN Security Council

- Made up of 15 countries, including 10 on rotation, each with one vote
- Decisions are generally legally binding for all 193 member countries
- Five permanent members may block resolutions using their veto power

What does the resolution mean?

While all UNSC resolutions are **typically binding under Article 25 of the UN Charter,** the US has deemed the **latest resolution non-binding.** If a resolution is not adhered to, the Council can **vote on a follow-up resolution** and impose punitive measures such as sanctions or authorizing an international force. So, in this case, there is **high pressure on Israel** to comply with the resolution.

Has Israel adhered to the previous resolutions?

No, Israel has not adhered to previous resolutions. E.g.,

1. **2016:** Israel ignored UNSC resolution deeming Isra-

el's settlements in Palestine illegal and a violation of international law

2. **December 2023:** Israel ignored the UN General Assembly's call for a "humanitarian ceasefire"

Israel **faces accusations of genocide in Gaza at the International Court of Justice,** with South Africa leading the charge.

Significance of US policy shift towards Israel:

The US policy **shift towards Israel indicates a change in how the US government** approaches its relationship with Israel. This change can have **significant implications for various aspects, including diplomatic relations,** regional stability in the Middle East, and efforts to address the Israel-Palestine conflict. Historically, the US has been a **staunch ally of Israel,** providing significant political, military, and economic support.

Israel has various options available to address the ongoing conflict:

1. **Long-term perspective:** Israel should heed the UNSC's call for a ceasefire, allow humanitarian aid into Gaza, and engage in talks with Hamas for the release of hostages and withdrawal of troops.
2. **Abiding by the Abraham Accords:** Israel should consider its previous position of normalizing relations with Arab states and the broader international community.
3. **Cooperation with Hamas:** Israel could explore dialogue with Hamas for a potential prisoner exchange, as Hamas has expressed willingness for immediate engagement.
4. **Synchronizing with US stance:** With the US increasingly critical of Israel's actions and urging for aid delivery to Gaza, Israel may need to align its approach accordingly.

India's Policy on the Israel-Palestine Conflict:

India's Policy	Description
Historical Stance	India historically favoured Palestine due to factors like Gandhi's opposition to a Jewish state, a significant Muslim population, and alignment with Arab countries, the Non-Aligned Movement, and the UN.
Shift in Policy	In 1992, India established diplomatic relations with Israel while continuing to support Palestine. This marked a significant change influenced by post-Cold War dynamics.
Balancing National Interest	India aims to balance maintaining strong ties with Israel, supporting Palestine, and cultivating relations with the Arab world, guided by national interest and diplomatic pragmatism.

Current Policy	India's relations with Israel have strengthened across various sectors. It supports Israel's anti-terrorism efforts, although the contexts differ.
Support for Palestine's Cause	India remains vocal about its commitment to the Palestinian cause and provides aid to Palestinian refugees and relief materials in the midst of ongoing tensions.
Balanced Stance	India's leadership has visited both Israel and Palestine , signalling a balanced approach. It voted against unilateral recognition of Jerusalem as Israel's capital in 2017.
Official Position	India officially supports a two-state solution with Israel and Palestine living as good neighbours, a stance consistent with international mediation efforts.

For: [Implications of the Gaza Crisis for India: Click Here](#)

Conclusion:

India, with its balanced approach and rapport with both Middle Eastern countries and Israel, can utilize multilateral forums like the Human Rights Council to mediate and help resolve the Israel-Palestine issue.

Mains Links:

Q. "India's relations with Israel have, of late, acquired a depth and diversity, which cannot be rolled back." Discuss. (UPSC 2018)

Prelims Links: (UPSC 2015)

The area known as 'Golan Heights' sometimes appears in the news in the context of the events related to

- a) Central Asia
- b) Middle East
- c) South-East Asia
- d) Central Africa

Ans: B

GENERAL STUDIES – 3

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

1. HCES DATA: A SHIFT IN INDIAN HOUSEHOLDS' FOOD CONSUMPTION PATTERNS

Context: The recently released [Household Consumer Expenditure Survey \(HCES\) data](#) for 2022-23 highlights a shift in **Indian households' food consumption patterns**.

What does the HCES data show about Food Trends?

Over the years, there has been a **gradual decline in the share of expenditure on food (to less than 50%) and an increase in spending on non-food items** for both urban and rural households. This decline in food spending **reflects an increase in incomes**, allowing for more expenditures on other necessities like medical expenses, clothing, education, conveyance, durables, fuel, and entertainment.

The recent survey highlights **a reduction in the share of cereals and pulses within overall food consumption expenditure in both rural and urban households**. Among non-food items, **spending on conveyance** now holds the highest share. Previously, fuel and light were the categories with the highest consumption spending **among non-food items until the 2022-23 survey**

Significance of the shift in Indian households' food consumption patterns:

1. **Economic Development Indicator:** The shift in Indian households' food consumption patterns reflects economic development, as it suggests an increase in incomes and the ability to spend more on non-food items.
2. **Improved Standard of Living:** The decline in the share of expenditure on food indicates an improved standard of living for households, allowing them to allocate more resources to other essential and discretionary expenses.
3. **Dietary Diversity:** The reduction in the share of cereals and pulses suggests a diversification of diets, potentially leading to improved nutrition outcomes by incorporating a wider range of food groups.
4. **Changing Lifestyle Preferences:** The increased spending on non-food items, such as conveyance, reflects changing lifestyle preferences and priorities among Indian households, possibly influenced by urbanization and modernization.
5. **Economic Opportunities:** The shift in consumption patterns may signify increased economic opportunities, particularly in sectors beyond agriculture, leading to greater consumption of goods and services beyond basic food necessities.
6. **Infrastructure Development:** Higher spending on non-food items like conveyance may indicate improved infrastructure development, such as better transportation networks, contributing to enhanced accessibility and mobility for households.

Limitations of MPCE Data:

1. **Lack of Intra-Household Allocation Insight:** MPCE data only reveals the overall consumption pattern of households, failing to provide insights into how food and nutrients are allocated among different demographic groups within the household, such as wom-

en and adolescent girls.

- Incomplete Assessment of Salt and Sugar Intake:** MPCE data does not accurately reflect the actual intake of salt and sugar, as it cannot estimate the quantities consumed through processed foods and beverages. This limitation is critical given the rising prevalence of obesity, diabetes, and hypertension in India.

Way Forward:

- Awareness:** Implement front-of-pack food labelling with a **traffic light system** to indicate high salt, fat, or sugar content in processed foods and **Promote nutrition literacy** to educate consumers about healthy eating practices and lifestyle modifications.
- Imposition of Health Tax:** Implement a **20% to 30% health tax**, in addition to GST, on high-fat, sugar, and salt (HFSS) foods to deter consumption.
- Expansion of Low-Cost Eateries:** Increase the **number of low-cost eateries** operated by the government, offering affordable nutritious meals and healthy alternatives like buttermilk.
- Nutritious Provision in Anganwadi:** Enhance the **allocation of vegetables** in government Anganwadi and school noon meal schemes to encourage healthy eating habits and improve nutrition.
- Diversification of PDS Basket:** Expand the **Public Distribution System (PDS) basket** to include a wider variety of foods, ensuring nutritional security for all.

About Household Consumption Expenditure Survey (HCES):

It is conducted **every 5 years** by the **National Statistical Office (NSO)** and gathers data on household consumption of **goods and services**. This data is essential for deriving macroeconomic indicators like **Gross Domestic Product (GDP)**, **poverty rates**, and **Consumer Price Inflation (CPI)**. The survey generates insights into

- Household spending on both goods and services
- Aids in calculating Monthly Per Capita Consumer Expenditure (MPCE)
- Analyzes the distribution of households and individuals across MPCE categories.

Note: NITI Aayog noted that the latest survey showed a **reduction in poverty to 5%**.

Prelims Links:

Q. As per the NSSO 70th Round "Situation Assessment Survey of Agricultural Households", consider the following statements: (UPSC 2018)

- Rajasthan has the highest percentage share of agricultural households among its rural households.
- Out of the total agricultural households in the country, a little over 60 per cent belong to OBCs.
- In Kerala, a little over 60 per cent of agricultural households reported to have received maximum income from sources other than agricultural activities.

Which of the statements given above is/are correct?

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

Ans: C

Q. In a given year in India, official poverty lines are higher in some States than in others because (UPSC 2019)

- (a) poverty rates vary from State to State
- (b) price levels vary from State to State
- (c) Gross State Product varies from State to State
- (d) quality of public distribution varies from State to State

Ans: B

2. INDIA-EFTA TRADE AND ECONOMIC PARTNERSHIP AGREEMENT (TEPA)

Context:

India and the European Free Trade Association (EFTA) signed a **Trade and Economic Partnership Agreement (TEPA)** on March 10, 2024.

What is EFTA?

EFTA, the European Free Trade Association, is an **intergovernmental organization** founded in 1960 to promote free trade among its member states, which include **Iceland, Liechtenstein, Norway, and Switzerland**. It operates independently of the European Union (EU).



Importance of EFTA States:

The EFTA states, **despite their small population of just over 14 million**, wield significant economic influence. Their advanced economies **rank among the world's highest in innovation, competitiveness, and wealth creation**. In 2021, they collectively traded close to over USD 1 trillion in goods and services, making them formidable players in global trade. **EFTA companies** are renowned world leaders in various sectors, including pharmaceuticals, biotechnology, machinery

manufacturing, technology products, and financial services.

India-EFTA Trade:

India's trade with EFTA (in million dollars)			
EFTA countries	Exports	Imports	Trade balance
Iceland	13	5	8
Liechtenstein	0	8	-8
Norway	484	782	-298
Switzerland	1,382	19,657	-18,275
TOTAL	1,879	20,452	-18,574

*CY2023

What is TEPA?

The India-EFTA Trade and Economic Partnership Agreement (TEPA) is a **trade agreement between India and the EFTA countries**. It focuses on market access, investment promotion, Intellectual Property Rights (IPR), and other trade-related aspects to enhance economic cooperation between India and the EFTA states.

Major Benefits for India from TEPA:

- Increased Foreign Direct Investment (FDI):** TEPA aims to increase the stock of foreign direct investments **by USD 100 billion in India** over the next 15 years, providing a significant boost to the country's economy.
- Job Creation:** The agreement is expected to facilitate the **generation of 1 million direct employment opportunities in India** through investments from EFTA countries.
 - Legal commitment made about **promoting target-oriented investment** and creation of jobs.
- Market Access:** TEPA provides enhanced market access for Indian goods, with tariff concessions and **favourable rules of origin**, enabling Indian exporters to access EFTA markets more competitively.
- Services Sector Growth:** The agreement stimulates **growth in India's services exports**, particularly in key sectors like IT services, business services, personal, cultural, sporting and recreational services, and other education services.
- Intellectual Property Protection:** TEPA ensures robust protection of Intellectual Property Rights (IPR) for Indian products and innovations, addressing concerns related to generic medicines and patents.
- Sustainable Development:** The agreement signals India's commitment to sustainable development, environmental protection, and inclusive growth, fostering transparency and efficiency in trade procedures.
- Domestic Manufacturing:** TEPA encourages domestic manufacturing in sectors such as Infrastructure, Machinery, Pharmaceuticals, Chemicals, Food Processing, Transport and Logistics, Banking and Financial Services, and Insurance, supporting the "Make

in India" initiative.

- Human Rights and Sustainable Development:** For the first time, the FTA also included a chapter on commitments to human rights and sustainable development.
- Template for other FTA negotiations:** E.g., TEPA can act as a model for negotiation with the European Union FTA

Major Benefits for EFTA from TEPA:

- Market Access:** EFTA members gain improved access to the Indian market
- Investment Opportunities:** TEPA provides avenues for them to invest in various sectors and industries.
- Services Trade:** EFTA countries benefit from better access to Indian services through provisions for digital delivery of services, commercial presence, and improved commitments for entry and temporary stay of key personnel.
- Intellectual Property Rights:** The agreement ensures strong protection of Intellectual Property Rights (IPR) for EFTA countries in India
- Mutual Recognition Agreements:** TEPA includes provisions for Mutual Recognition Agreements in Professional Services, allowing professionals from EFTA countries to practice in India and vice versa
- Enhanced Economic Integration:** TEPA strengthens economic ties between EFTA countries and India

Challenges include:

- Economic Structure Differences:** EFTA states' focus on high-tech industries contrasts with India's diverse economy, requiring alignment.
- Regulatory Hurdles:** Varied regulations and standards necessitate harmonization efforts for seamless trade.
- Competition:** EFTA's competitiveness in key sectors demands measures for fair competition.
- Environmental and Social Considerations:** Prioritizing sustainability and social equity is vital.

Way Forward:

Moving forward, it is crucial for **strong political involvement and guidance to be provided** by both India and EFTA, ensuring that TEPA is streamlined to facilitate the swift establishment of a balanced agreement that serves the interests of all parties involved.

Insta Links

[India-Australia Economic Cooperation and Trade Agreement \(ECTA\) approved](#)

Prelims Links

Q. 'Broad-based Trade and Investment Agreement (BTIA)' is sometimes seen in the news in the context of negotiations held between India and (UPSC 2017)

- (a) European Union
- (b) Gulf Cooperation Council
- (c) Organization for Economic Cooperation and Development
- (d) Shanghai Cooperation Organization

Ans: A

Q. The SEZ Act, 2005 which came into effect in February 2006 has certain objectives. In this context, consider the following: (UPSC 2010)

1. Development of infrastructure facilities.
2. Promotion of investment from foreign sources.
3. Promotion of exports of services only.

Which of the above are the objectives of this Act?

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

Ans: A

Q. A “closed economy” is an economy in which (UPSC 2011)

- (a) the money supply is fully controlled
- (b) deficit financing takes place
- (c) only exports take place
- (d) neither exports nor imports take place

Ans: D

3. HUMAN DEVELOPMENT INDEX (HDI) 2023-24

Context:

The 2023/24 [Human Development Report](#), titled “**Breaking the Gridlock: Reimagining Cooperation in a polarized world,**” was launched on March 13, 2024

Human Development Index (HDI) 2023-24	Description
About	<p>It is a statistical composite index that measures the average achievement of a country in three basic dimensions: health, education, and income.</p>

Background	Developed by Pakistani economist Mahbub ul Haq in 1990 , it embodies Amartya Sen’s capabilities approach to understanding human well-being.
	Alongside HDI, the Human Development Report (HDR) presents other indices such as the Multidimensional Poverty Index (MPI) , Inequality-adjusted Human Development Index (IHDI) , Gender Inequality Index (GII), and Gender Development Index (GDI).
	The Inequality-adjusted Human Development Index (IHDI) measures human development by considering how evenly a country’s achievements are distributed among its citizens in health, education, and income.
Key Highlights of India’s Human Development Report 2023-24	
India’s Ranking	India ranked 134 in 2022 , showing a slight improvement from its previous rank of 135 in 2021. It falls under the medium human development category . Between 1990 and 2022, India saw over 48% increase in its HDI value, from 0.434 to 0.644
India’s Performance on Various Indicators	India’s life expectancy at birth increased slightly to 67.7 years.
	There was a 5.88% increase in expected years of schooling (EYS) from 11.9 years to 12.6 years , leading to an improvement of 18 places. Gross National Income (GNI) per capita also improved from \$6,542 to \$6,951.
Performance of India’s Neighbourhood	Sri Lanka and China rank higher than India at 78 and 75, respectively, in the High Human Development category. Bhutan and Bangladesh rank at 125 and 129, respectively. Nepal (146) and Pakistan (164) rank lower than India.
India’s Progress in Reducing Gender Inequality Index (GII)	India ranks 108 out of 166 countries in the Gender Inequality Index (GII) 2022 , showing progress (in 2021, it ranked 122 out of 199 countries). India Jumps 14 ranks on Gender Inequality Index 2022
	The GII measures gender inequalities on three parameters: Reproductive health (Use indicators namely the maternal mortality ratio and the adolescent fertility rate), Empowerment (Measured by the share of parliamentary seats held), and the Labor market (Measured by labour force participation rates by both gender)
	India’s GII value of 0.437 is better than the global average (0.462) and the South Asian average.
	GII score varies between 0 (when women and men fare equally) and 1 (when men or women fare poorly compared to the other in all dimensions).
Observations by the Human Development Index	The report highlights a reversal in the trend of reducing inequalities between wealthy and poor nations . It emphasizes the need for collective action to address climate change, digitalization, poverty, and inequality. Political polarization is identified as a hindrance to progress.
Four Areas for Immediate Action Proposed by the Human Development Report	Planetary public goods for climate stability as we confront the unprecedented challenges of the Anthropocene.
	Digital global public goods for greater equity in harnessing new technologies for equitable human development.
	New and expanded financial mechanisms , including a novel track in international cooperation that complements humanitarian assistance and traditional development aid to low-income countries.
	Dialling down political polarization through new governance approaches focused on enhancing people’s voices in deliberation and tackling misinformation.

Insta Links:

[Human Development Index \(HDI\).](#)

Mains Link: UPSC 2019

Q. Despite the consistent experience of High growth, India still goes with the lowest indicators of human development. Examine the issues that make balanced and inclusive development elusive.

Prelims Links

- A. The Multi-Dimensional Poverty Index developed by Oxford Poverty and Human Development Initiative with UNDP support covers which of the following?
1. Deprivation of education, health, assets and services at the household level

2. Purchasing power parity at the national level
3. The extent of the budget deficit and GDP growth rate at the national level

Select the correct answer using the codes given below:

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

Solution: A

4. ILO'S INDIA EMPLOYMENT REPORT 2024: INDIA'S EMPLOYMENT CRISIS

Context:

ILO's India Employment Report 2024 examines youth employment challenges and trends over two decades, drawing from various data sources

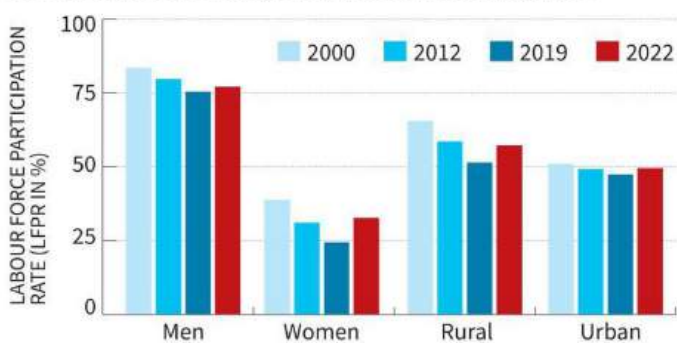
Key findings of the Report are:

Positive Findings:

1. Women saw a **rise in self-employment** and unpaid family work.
2. **Labour productivity increased** consistently alongside technological progress.
3. **Female labour market participation rates increased**, especially in rural areas.
4. **There's a gradual shift from agriculture to non-farm sectors** in the workforce, however, the transition slowed due to the COVID-19 pandemic.

Employment blues

Labour participation for various sections increased slightly in 2022 (compared to 2019) but was still low vis-a-vis 2000



Negative Findings:

1. **Youth unemployment increased** nearly threefold, from **5.7% in 2000 to 17.5% in 2019**
2. Employment growth **remained stagnant until 2019**, then started to rise
3. Employment is dominated by the **informal sector (about 82%)**. **Self-employment and casual employment** are predominant
4. Wages have **remained low and stagnant or decreased**. Modest wage rises for casual labourers were observed, while real wages for regular workers

stagnated or declined.

5. India is expected to have a **migration rate of around 40% by 2030**, with an urban population of about 607 million.
6. **Contractualization has risen**, with only a small fraction of workers under long-term contracts. The proportion of regular employment increased post-2000 but declined after 2018.
7. **Livelihood insecurities are widespread**, especially in the non-agricultural organized sector, with limited social protection coverage.
8. Despite India's youthful workforce being a demographic asset, **many lack essential skills, with 75% unable to send emails with attachments, 60% unable to copy and paste files, and 90% unable to use spreadsheets for mathematical formulas**.
9. **Education:** While overall **educational levels have risen**, gaps remain across **social groups, economic backgrounds, and regions**. Only a **small percentage of youths** have formal vocational training, **with less than 4% accessing it**

Recommendations:

	Policy Measures
1: Make production and growth more employment-intensive	Integrate the employment creation agenda with macroeconomic policies.
	Prioritize labour-intensive manufacturing
	Focus on micro, small, and medium-sized enterprises
	Increase agricultural productivity and promote entrepreneurship
2: Improve the quality of jobs	Invest in sectors like care and the digital economy
	Develop inclusive urbanization and migration policies
	Ensure strong labour policies and regulations.
3: Overcome labour market inequalities	Boost women's participation with quality work policies.
	Bridge the digital divide
	Enhance skills training for social and economic inclusion
	Create a non-discriminatory labour market
	Implement regional-level policies to reduce inequalities.

4: Enhance the effectiveness of skills training	Strengthen the role of skills development
	Facilitate youths' connection with job opportunities.
	Address unfilled vacancies in the public sector transparently
5: Bridge knowledge deficits on labour market patterns	Develop reliable labour market statistics on emerging job forms
	Utilize implementation and monitoring data effectively for policy.

For [Types of Employment in India: Click Here](#)
 For [Causes of the high unemployment rate: Click Here](#)
 For the [Social Impact of Unemployment in India: Click Here](#)
 For [Measures to address unemployment: Click Here](#)

Government's Initiatives Related to Employment:

- [Support for Marginalized Individuals for Livelihood and Enterprise \(SMILE\)](#)
- [PM-DAKSH](#) (Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi)
- [Mahatma Gandhi National Rural Employment Guarantee Act](#) (MGNREGA)
- [Pradhan Mantri Kaushal Vikas Yojana](#) (PMKVY)
- [Start-Up India Scheme](#)
- [Indira Gandhi Urban Employment Guarantee Scheme](#)- Rajasthan.

About India Employment Report 2024

The India Employment Report 2024 is the **third in the series of regular publications** by the **Institute for Human Development (together with the International Labour Organization) on labour and employment issues**. The report is primarily based on analysis of data from the [National Sample Surveys and the Periodic Labour Force Surveys between 2000 and 2022](#), with a postscript for 2023. Other sources of data include the Annual Survey of Industries, the National Account Statistics and the Reserve Bank of India-KLEMS database.

Mains Links:

Q. Most of the unemployment in India is structural in nature. Examine the methodology adopted to compute unemployment in the country and suggest improvements. (UPSC 2023)

Prelims Link:

Q. Disguised unemployment generally means (UPSC 2013)

- a large number of people remain unemployed
- alternative employment is not available
- the marginal productivity of labour is zero
- productivity of workers is low

Ans: C

[Topics: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.](#)

5. POTENTIAL OF PRADHAN MANTRI SURYA GHAR MUFT BIJLI YOJANA

Context:

Recently Pradhan Mantri Surya Ghar Muft Bijli Yojana was approved with a **budget of 75,021 crores**, and aims to **provide 300 units of free electricity monthly to 1 crore households** through rooftop solar setups.

About Pradhan Mantri Suryodaya Yojana:

About	Description
Name of the Scheme	Pradhan Mantri Suryodaya Yojana
Objective	Aims to provide 300 units of free electricity monthly to 1 crore households through rooftop solar setups
Definition of Rooftop Solar Panels	Photovoltaic panels installed on building rooftops connected to the main power supply unit
Subsidies	60% of installation costs are covered for 2 kW systems. 40% of installation costs covered for systems of 2-3 kW capacity
National Portal	It will facilitate subsidy applications and assist in finding a suitable vendor for installing rooftop solar. Additionally, it will aid decision-making by providing relevant information as needed.
Related Government Initiatives	The Rooftop Solar Programme was launched in 2014 . Aims for 40 GW rooftop solar capacity by 2022 (deadline extended to 2026). Pradhan Mantri Suryodaya Yojana complements efforts to achieve the 40 GW target
Other Government Initiatives to Harness Solar Energy	National Solar Mission ; Solar Park Scheme ; Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) ; Surya Mitra Skill Development Programme; International Solar Alliance

Need for the Scheme:

- India's Energy Demand:** Projected highest growth globally over the next three decades.
- To achieve India's aims for 500 GW** of renewable energy capacity by 2030.
- Targets 50% electricity generation from non-fossil fuel sources** by 2030, with renewables contributing 30% currently.

4. **Current Solar Capacity in India: India has** Rooftop Solar capacity is about 11 GW (as of December 2023). Gujarat leads with 2.8 GW, followed by Maharashtra with 1.7 GW.
 - a. This is significantly below the target of 40GW.
 - b. **Only 20% of rooftop solar installations** are in the residential sector, according to a CEEW report.
5. **Huge potential:** India's 25 crore households could deploy 637 GW of solar energy on rooftops, **meeting one-third of the country's residential electricity demand.**

Total Installed Capacity: India's solar power capacity is about 73 GW as of December 2023, with Rajasthan (18.7 GW) and Gujarat (10.5 GW) leading.

Benefits of the Pradhan Mantri Suryodaya Yojana:

1. **Reduction in Electricity Bills:** By installing rooftop solar systems, households can significantly reduce their electricity bills, benefiting both the poor and middle classes.
2. **Energy Self-Reliance:** The initiative aims to make India self-reliant in the energy sector by promoting decentralized solar power generation.
3. **Energy Security:** Promoting rooftop solar power contributes to enhancing energy security by diversifying energy sources and reducing dependence on traditional fossil fuels like coal.
4. **Environmental Sustainability:** Solar energy is a clean and renewable energy source, leading to reduced greenhouse gas emissions and environmental pollution, thereby supporting sustainable development.
5. **Increased Energy Access:** By targeting individual households, the scheme aims to increase energy access, especially in rural and remote areas where grid connectivity is limited.
6. **Fulfilling International Commitments:** The initiative aligns with India's international commitments to increase the share of non-fossil fuel-based energy sources in its energy mix, contributing to global efforts to combat climate change.
7. **Potential for Economic Growth:** The growth of rooftop solar power capacity creates opportunities for economic growth, job creation, and technological innovation in the renewable energy sector.
8. **Uniform Distribution of Solar Potential:** Unlike large solar parks that require extensive land and infrastructure, rooftop solar systems can be installed uniformly across all states and regions, tapping into the solar potential of every locality.

Challenges in the Implementation of Pradhan Mantri Suryodaya Yojana:

Challenges	Details
Free electricity issue	The provision of free electricity by many states discourages people from adopting rooftop solar systems.
Financial Constraints for DISCOMs	Discoms foresee losses due to the net metering system, as they already incur fixed costs and pay contracted charges to power generators
	Fear of increased costs for discoms due to compensating consumers for absorbing power from rooftop solar plants.
The limited success of previous schemes	The rooftop solar program fell short of expectations, achieving only about 11 GW by December 2023, compared to the 40 GW target.
	The majority of capacity is contributed by commercial and industrial consumers, with limited adoption by households.
Flip-Flopping Policies	GST hike on solar system components increases capital cost, affecting the attractiveness of rooftop solar.
Regulatory Framework	Slow growth due to the absence or withdrawal of state-level policy support, especially for business and industrial segments
Inconsistent Rules on Net and Gross Metering	Power ministry's new rules exclude rooftop solar systems above 10 kW from net-metering , potentially stalling the adoption of larger installations.
Low Financing	Banks advised by MNRE to offer loans for rooftop solar at subsidized rates, but nationalized banks have limited offerings. Private players in the market offer loans for rooftop solar at higher rates, up to 10-12% , posing financing challenges for adoption.

Way forward:

1. **Increase awareness** about the long-term benefits of rooftop solar.
2. **Offer incentives or subsidies** to offset initial installation costs.
3. **Review net metering policies** to ensure fair compensation for both consumers and DISCOMs.
4. **Establish clear and stable regulatory frameworks** to provide certainty to stakeholders.
5. **Empower distribution companies** and create an enabling environment for greater penetration of rooftop solar.
6. **Develop innovative financing mechanisms** tailored to the needs of rooftop solar projects.

Insta Links:

[Rooftop solar scheme](#)

Mains Links:

Q. India has immense potential for solar energy though there are regional variations in its developments. Elaborate. (UPSC 2020)

Prelims Links:

Q. With reference to solar power production in India, consider the following statements: (UPSC 2018)

1. India is the third largest in the world in the manufacture of silicon wafers used in photovoltaic units.
2. The solar power tariffs are determined by the Solar Energy Corporation of India.

Which of the statements given above is/are correct?

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

Ans: D

Q. 'Net metering' is sometimes seen in the news in the context of promoting the (UPSC 2016)

- (a) production and use of solar energy by households/consumers
- (b) use of piped natural gas in the kitchens of households
- (c) installation of CNG kits in motor cars
- (d) installation of water meters in urban households

Ans: A

Q. Consider the following statements: (UPSC 2016)

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

Which of the statements given above is/are correct?

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

Ans: A

Q1. Consider the following statements: (UPSC 2022)

1. Gujarat has the largest solar park in India.
2. Kerala has a fully solar-powered International Airport.
3. Goa has the largest floating solar photovoltaic project in India.

Which of the statements given above is/are correct?

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

Answer: B: 2 only

Topics: [Science and Technology- developments and their applications and effects in everyday life](#) [Achievements of Indians in science & technology; indigenization of technology and developing new technology.](#)

6. BENEFITS AND CHALLENGES OF THE GENOME INDIA PROJECT

Context:

The Genome India Project, funded by the Department of Biotechnology, has **completed sequencing 10,000 Indian genomes**, creating a reference for Indian genetic diversity.

What is the Genome India Project?

It endeavours to sequence 10,000 Indian human genomes and create a database. This research (inspired by the International **Human Genome Project**) was carried out by 20 national institutes with support from the Department of Biotechnology, Government of India

What is a Genome?

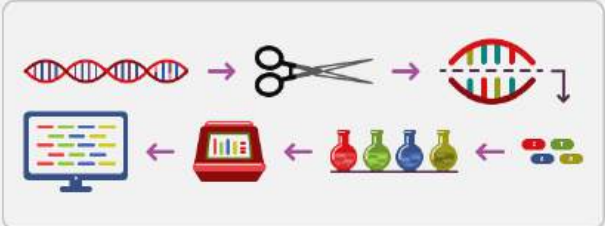
A genome is a genetic material that provides instructions for the development, growth, and functioning of all living organisms, composed of DNA with a sequence of chemical bases that determines an organism's characteristics.

An analogy to understand Genome:

The genome can be **compared to a reference book**. In this analogy, a genome contains the DNA- instructions for life. It's composed of **a vast array of nucleotides (letters)** that are packaged into **chromosomes (chapters)**. Each chromosome contains **genes (paragraphs)** that are regions of DNA which code for the specific proteins that allow an organism to function.

What is Genome Sequencing?

Genome sequencing is the process **of determining the complete DNA sequence of an organism's genome**. It involves identifying **the order of nucleotides (A, T, C, G) that make up the DNA molecule in each of the chromosomes of an organism**.



GENOMIC SEQUENCING
What is Genomic Sequencing?

The infographic illustrates the process of genomic sequencing. It starts with a DNA double helix being cut by scissors into smaller fragments. These fragments are then analyzed using various laboratory techniques, represented by icons of a computer monitor, a red sequencer, and several colored vials. The final result is a long line of colored letters representing the DNA sequence.

GENOMIC SEQUENCING

Genomic sequencing refers to methods of determining the entire DNA sequence of an organism's genome. In simpler terms, it determines the order of As, Ts, Cs and Gs that make up an organism's DNA. A genomic sequence is depicted by a very long line of these letters arranged in a specific order.

Importance of Human Genome Sequencing as a scientific breakthrough:

- **Advancing genetics:** Human Genome Sequencing has revolutionized genetics by providing a **comprehensive map of genetic information** in human DNA.
 - This knowledge enhances our understanding of genetic diseases, hereditary traits, and human evolution.
- **Disease understanding:** Genome sequencing has shed light on the **genetic basis of numerous diseases**, including cancer, rare genetic disorders, and complex conditions like diabetes and cardiovascular diseases.
 - **INSACOG initiative of the Department of Biotechnology** advocated Genome sequencing that allowed scientists to identify threats emerging from the **COVID-19 pandemic** and also how it spreads.
 - **Identifying genetic diseases:** it has huge potential in the field of genetic diseases. India has witnessed a rise in cases of diseases like **Sickle cell anaemia, thalassemia** etc.
 - **Decreasing disease burden;** genomic testing can help recognize **what diseases people are at risk** for so that could then also be quickly applied to the task of managing diseases in these groups as well as be used for **genetic counselling** that could reduce their **incidence in future generations**.
- **Vaccine development:** Only genome sequencing can identify various mutations which further will help in vaccine development and testing.
- **Evolutionary insights:** It provides insights into **human evolution, ancestry, and migration** patterns by comparing genomes from different populations and hominin species.
- **Personalised medicines:** genome-wide association studies have enabled us to **tailor the diagnostics and treatment** of these diseases for individuals in the form of personalised medicine.
- **Precision medicine:** By identifying genetic variations, researchers can tailor medical treatments and interventions to an individual's unique genetic makeup.
 - This has the potential to enhance **treatment efficacy** and **reduce adverse effects**.

India's contributions to Genome Sequencing research:

Over the years, India has developed rigorous regulatory policies to oversee research and applications done in the field of genomics and genetics.

- **In the last 10 years**, genetic testing in India has evolved by leaps and bounds, which can be recognized from the proliferation of genomic databases, such as **Index-DB and, the Indian Genetic Disease Database (IGDD)**, to name a few.
- **Mapmygenome project:** With a vision to "Touch 100 million lives", Mapmygenome was established in 2013, heralding the advent of improved healthcare

through genomics-based healthcare.

- Mapmygenome also provides regular health checks and Covid testing along with Genomics in Hyderabad, Delhi and Bangalore.
- **Genome India project:** Taking inspiration from the **Human Genome Project**, the **Department of Biotechnology (DBT)** initiated the ambitious "Genome India Project" (GIP) on 3rd January 2020.
 - The GIP aims to **collect 10,000 genetic** samples from citizens across India, to build a reference genome.
- **IndiGen initiative:** The IndiGen initiative was undertaken by **CSIR** in April 2019. The objective is to enable genetic epidemiology and develop public health technology applications using population genome data.
 - This has enabled **benchmarking the scalability of genome sequencing** and computational analysis at a population scale in a defined timeline.

Challenges faced by the Genome India Project:

- **Representative Diversity:** Sequencing 10,000 genomes doesn't fully represent India's diverse population of over one billion, comprising around 4,500 population groups.
- **Complex Genetic Landscape:** India's history of endogamy within castes preserves rare, potentially harmful genetic variants, complicating genetic analysis.
- **Limitations of Monogenic Disease Focus:** Most diseases are not monogenic (Monogenic refers to traits or diseases caused by variations in a single gene.), posing challenges in simplifying genetic research to establish direct disease links.
- **Affordability of Treatments:** Even with identified genetic causes of diseases, treatments are often unaffordable for many.
- **Data Accessibility:** Ensuring widespread access to project findings beyond academia is a significant challenge.
- Additional challenges in **data generation and analysis** include issues of sample contamination, accuracy of genetic tests **without genotype-phenotype correlations**
- **Ethical concerns** regarding sensitive genomic data sharing, data security, and privacy.

About the Human Genome Project:

The Human Genome Project (1990 to 2003) was an international scientific research project with the goal of determining the base pairs that make up human DNA, and of identifying, mapping and sequencing all of the genes of the human genome from both a physical and a functional standpoint.

Human Pangenome Project

It is an **International Alliance of genomics partners**, that aims to **create a Pangenome Reference** representing the genetic diversity of the human population. It differs from the Human Genome Project in several ways:

1. **Inclusivity:** Unlike the Human Genome Project’s focus on a limited set of populations, the Pangenome Project aims to encompass genetic variations from diverse populations worldwide.
2. **Graph-Based Representation:** Unlike linear sequences used in the reference genome, the Pangenome is represented as a graph, acknowledging the dynamic nature of human genetics.
3. **Deeper Exploration:** The Pangenome Project delves deeper into structural and rare genetic variants compared to the Human Genome Project.
4. **Error-free:** The Pangenome map boasts high accuracy in representing genetic information, essential for reliable analyses and interpretations.

Conclusion

Genome India Project and Human Genome Sequencing exemplify the power of science to unravel the mysteries of our genetic code, offering hope for improved healthcare and a deeper understanding of our species’ genetic legacy. Its continued exploration and responsible application promise to shape the future of medicine and biology.

Mains Link: Q. What is Genome Sequencing and what are its benefits? Also, enumerate the steps taken by India in this direction. (10M)

Prelims Links:

With reference to agriculture in India, how can the technique of ‘genome sequencing’, often seen in the news, be used in the immediate future? (UPSC 2017)

1. Genome sequencing can be used to identify genetic markers for disease resistance and drought tolerance in various crop plants.
2. This technique helps in reducing the time required to develop new varieties of crop plants.
3. It can be used to decipher the host-pathogen relationships in crops.

Select the correct answer using the code given below:

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

Ans: D

7. INDIA’S R&D LANDSCAPE: FUNDING, CHALLENGES, AND INITIATIVES

Context:

India’s R&D funding landscape is undergoing significant transformation with the **announcement of a ₹1 lakh crore**

corpus in the interim Budget for 2024-25, aimed at bolstering research and innovation.

What is Research and Development?

It refers to the **systematic investigation and experimentation** undertaken to discover new knowledge or create **new products, processes, or services**. R&D activities are essential for driving innovation, improving existing products, and staying competitive in various industries.

Status of India in the R&D landscape:

1. **Low R&D funding:** China allocates **2.4%** of its GDP to R&D, the US allocates **3.5%**, while India’s allocation stands at only **0.64%**.
2. **Growth in GERD: India’s Gross Expenditure on Research and Development (GERD)** has shown significant growth, reaching over USD 17 billion in 2020-21, but it still lags behind major economies in terms of the percentage of GDP spent on R&D.
3. **Academic Talent Production:** Despite lower R&D expenditure compared to other countries, **India ranks third globally in producing PhDs and publications**, reflecting a commitment to fostering intellectual capital and contributing to global research endeavours.
4. **Patent Grants:** India **ranks sixth globally in patent grants**, showcasing an evolving innovation landscape and potential for further growth in intellectual property creation.
5. **Investment in Autonomous R&D:** A significant portion of R&D funding is allocated to **autonomous laboratories** operated by the government, driving research and technology development with strategic implications.
6. **Government Sector Dominance:** With **54% of total R&D investment** allocated to the government sector, key scientific agencies like DRDO, Department of Space, ICAR, and Department of Atomic Energy benefit, enhancing strategic research and development initiatives.
7. **Provisions in Interim Budget 2024-25:** The interim budget allocated a corpus of Rs. 1 lakh crore for long-term financing or refinancing in R&D, along with launching a new scheme to **strengthen deep-tech technologies** for defence purposes, promoting self-reliance (atmanirbharta).

Issues with India’s R&D landscape:

1. **Low R&D Investment as a Percentage of GDP:** India’s GERD has grown significantly, but its R&D investment as a percentage of GDP remains low at **0.64%**.
2. **Less Contribution by Private Sector:** In India, the private sector contributed only about 36% in 2020-21 Vs economies like China, Japan, South Korea, and the U.S., where private industries typically **contribute over 65% of R&D funding**.
3. **Under-Utilisation of Allocated Funds: DBT used only 72% and DST used only 61% in 2022-23.**
4. **Bureaucratic red tape and delays** in procuring laborato-

ry equipment impede research.

- State Governments Not Allocating Adequate Funds:** The annual spending on research in most states is **only 0.09% of the Gross State Domestic Product (GSDP) on average**, indicating a lack of emphasis on research at the state level.
- A weak patent system leads** to concerns about inadequate protection of intellectual property.
- Insufficient capacity in the Indian Patent Office** to handle patent examination demands.
- Lack of talent due to underdeveloped** higher education institutions hampers private sector engagement.
- Limited collaboration between academia and industry** inhibits innovation and commercialization.

Government Initiatives:

- Atal Innovation Mission (AIM):** Launched in 2016, this scheme aims to foster innovation by creating new programs and policies to support start-up development.
- Innovation of Science Pursuit for Inspire Research (INSPIRE):** This scheme aims to attract talent to science and research at an early stage.
- One Week - One Lab Campaign:** This aims to create awareness about CSIR-NPL's technologies, provide solutions to societal problems, and develop scientific temperament among students.
- National Initiative for Developing and Harnessing Innovations (NIDHI):** End-to-end plan for start-ups to double the number of incubators and start-ups within five years.
- National Start-up Awards:** Recognizes outstanding start-ups and ecosystem enablers contributing to economic dynamism by stimulating innovation and competition.
- National Research Foundation:**

Steps to Enhance R&D Funding:

Steps	Description
Encouraging Private Sector Collaboration	Provide incentives for private investment, including relaxation of foreign direct investments (FDIs), tax rebates , and clear regulatory roadmaps.
Increasing R&D Expenditure	Aim to spend at least 1-3% of GDP annually on R&D to have a meaningful impact on development
Ensuring Increased Role for HEIs in India	Recognize the importance of Higher Education Institutions (HEIs) in R&D and Strengthen academia's research infrastructure
Investing in Deep Tech	Implement initiatives like the National Deep Tech Startup Policy (NDTSP) and the Anusandhan National Research Foundation (ANRF) Act to incentivize private sector engagement and safeguard intellectual property.
Mandating Proper Utilization of Allocated Funds	- Prioritize political commitment to R&D spending and build bureaucratic capacity for effective project evaluation and utilization.
Prioritizing Expenditure Through State Governments	Allocate expenditure to facilitate the transition of research from the lab bench to the factory floor , promoting innovation and high-quality advancements.
Creating an Enabling Regulatory Environment	Ensure a level playing field for all players in the R&D sector through clear regulatory frameworks.
Skill Development and Education	Invest in skill development and education initiatives to cultivate a skilled workforce that can support private sector growth.

National Research Foundation (NRF)

National Research Foundation (NRF)	
About	NRF will be established as an apex body at a total estimated cost of ₹50,000 crores from 2023-28 (the government will contribute ₹14,000 crores and ~₹36,000 crores are expected to come from the private sector as investments).
Recommendation	National Education Policy (NEP) 2020
Implementation	DST, Ministry of S&T
Governed by	<p>A Governing Board: The PM will be the ex-officio President of the Board and the Union Minister of S&T and Union Minister of Education will be the ex-officio Vice-Presidents.</p> <ul style="list-style-type: none"> It will also consist of eminent researchers and professionals across disciplines. <p>An Executive Council: Chaired by the Principal Scientific Adviser to the Government of India.</p>
Purpose	NRF will seed, grow and promote R&D and foster a culture of research and innovation throughout India's universities, colleges, research institutions and R&D laboratories.
How?	<ul style="list-style-type: none"> By prioritising research funding and ensuring that scientific research was conducted and funded equitably with greater participation from the private sector. Currently, the IITs and IISc receive the majority of research funds, whereas State universities receive a very little portion (~10%). By forging collaborations among the industry, academia, and government departments and research institutions and creating an interface mechanism for their participation and contribution. By creating a policy framework and putting in place regulatory processes that can encourage collaboration and increased spending by the industry on R&D.
Significance/need of NRF/Bill	<ul style="list-style-type: none"> India barely spends 0.7% of its GDP on R&D, which is extremely low compared to the US (2.83%), China (2.14%), Israel (4.9%), Brazil, Malaysia and Egypt. NRF will promote the democratisation of science funding, finding solutions to the big problems facing Indian society, etc. The Bill was necessary because current laws made it hard for private research organisations to contribute to a funding body such as the NRF.

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Conclusion:

This commitment to R&D underscores the nation's emphasis on research and development, as reflected in the rebranded slogan **'Jai Jawan, Jai Kisan, Jai Vigyan, Jai Anusandhan'**.

Insta Links:

- [National Research Foundation \(NRF\)](#)
- [R&D ecosystem in India](#)

Mains Links:

Q. Scientific research in Indian universities is declining, because a career in science is not as attractive as our business operations, engineering or administration, and the universities are becoming consumer-oriented. Critically comment. (UPSC 2014)

Prelims Links:

Q. Which of the following statements is/are correct regarding the National Innovation Foundation-India (NIF)? (UPSC

2015)

1. NIF is an autonomous body of the Department of Science and Technology under the Central Government.
2. NIF is an initiative to strengthen the highly advanced scientific research in India’s premier scientific institutions in collaboration with highly advanced foreign scientific institutions.

Select the correct answer using the code given below:

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

Ans: A

Q. For outstanding contribution to which one of the following fields is the Shanti Swarup Bhatnagar Prize given? (UPSC 2009)

- (a) Literature
- (b) Performing Arts
- (c) Science
- (d) Social Service

Ans: C

Q. Atal Innovation Mission is set up under the (UPSC 2019)

- (a) Department of Science and Technology
- (b) Ministry of Labour and Employment
- (c) NITI Aayog
- (d) Ministry of Skill Development and Entrepreneurship

Ans: C

8. AI’S IMPACT ON ELECTIONS: BALANCING PROMISE AND PERIL

Context:

While AI promises numerous benefits, its misuse, particularly in elections, raises concerns. The **2024 elections worldwide, including in India**, mark a pivotal moment, as AI’s impact on electoral behaviour becomes increasingly evident.

Promises of using AI for Election:

1. **Campaign Strategy Revolution:** AI tools optimize campaign strategies, enhancing efficiency and reducing costs.
2. **Information Campaigns:** AI aids targeted information campaigns, spreading tailored news.
3. **Technological Advancements:** Rapid AI developments help in better study of electoral dynamics for political parties
4. **Micro-Targeting Voters:** AI enables precise targeting based on demographics and online behaviour.
5. **Influence through Personalization:** Tailored messages sway opinions effectively.

Prelims of using AI for Election:

Aspect	Description
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Manipulating Electoral Behavior

AI enables **highly personalized propaganda**, surpassing traditional methods like bots and automated social media accounts. See the below figure for example:

Fakes Around the World



ARGENTINA

Before the November 19, 2023 Argentina presidential election runoff, candidate Javier Milei posted a doctored image (*above*) of his rival Sergio Massa in Chinese communist military overalls. The allegedly AI-generated image got 3 mn views on X, a large number in a country of 46 mn. Milei is now Argentina's President.



INDIA

On January 21, 2024, the late M Karunanidhi 'told' a DMK youth wing meeting in Salem about the Centre's suppression of states' rights in an AI-generated video. Two days later, Karunanidhi, who died in 2018, appeared in another fake video (*screen-grab above*) and praised Chief Minister M K Stalin and DMK leader T R Baalu.

SLOVAKIA

In September 2023, before a key election, an audio surfaced online in which a top candidate was heard saying that he had bought the votes of

a minority group, and that he would tax beer if voted to power. AFP fact checkers concluded that the audio was AI-generated. The candidate was eventually defeated.

Spreading Disinformation

The term "**Deep Fake Elections**" highlights the expected impact of AI-generated disinformation tools. The **persuasive ability of AI models** would be far superior to the bots and automated social media accounts

E.g., Cloned celebrity voices- The combination of cloned celebrity voices with social media algorithms allows for targeted dissemination of misinformation, potentially distorting election outcomes.

'AI hallucinations'

AI's inclination to fabricate information challenges its reliability and accuracy, warning against excessive dependence on AI systems.

Inherent Adversarial Capabilities

AI systems may **develop adversarial capabilities like poisoning, backdooring, and evasion**, posing significant threats that require effective mitigation strategies.

Poisoning: It refers to the **deliberate manipulation of training data** to compromise the performance of machine learning models.

Backdooring: Backdooring involves the **insertion of a hidden vulnerability or malicious code** into an AI system, allowing unauthorized access or control by attackers.

Evasion: Evasion, also known as adversarial evasion, is a technique used to deceive AI systems by **subtly modifying input data** to produce incorrect or unexpected outputs.

Lack of Effective Regulation	India faces the dilemma of regulating AI , oscillating between a non-regulatory approach and mitigating user harm, potentially leaving room for misuse.
Lack of Effective Checks by the Largest AI Platforms	Generative AI platforms restrict users from creating misleading images, yet researchers have successfully generated deceptive election-related images , raising concerns about the platforms' efficacy in preventing misuse. E.g., Users of Midjourney have created fake photos of Joe Biden handing wads of cash to Israeli Prime Minister Benjamin Netanyahu , and Trump playing golf with Russian President Vladimir Putin

Steps that can be taken to prevent AI misuse for Politics:

- Ethical Considerations in AI Governance:** Prioritize fairness, transparency, accountability, and democratic principles in AI governance frameworks.
- Employment of Proactive Measures:** Adopt robust regulatory frameworks and oversight mechanisms to mitigate AI-driven manipulation risks.
- Invest in digital and media literacy programs** to empower voters to discern fact from fiction and resist manipulation.
- As per the Tech Accord for Combatting Deceptive AI in Elections (2024):**
 - Prevention:** Invest in precautions to limit deceptive AI election content.
 - Provenance:** Attach origin signals to identify content sources.
 - Detection:** Employ methods to detect deceptive AI content.
 - Responsive Protection:** Provide swift responses to incidents of deceptive content dissemination.
 - Evaluation:** Learn from experiences in dealing with deceptive content.
 - Public Awareness:** Educate the public on media literacy and protection from manipulation.
 - Resilience:** Develop tools and resources to defend the democratic process against deceptive content.
- Developing and Implementing Technology to Mitigate Risks:** Attach machine-readable information to AI-generated content to certify authenticity.
- Addressing Deceptive AI Election Content:** Appropriately address detected deceptive AI content while upholding principles of free expression and safety.
- Engagement with Global Civil Society:** Engage with global civil society organizations and experts to understand the risk landscape and develop effective technologies and initiatives.
- Advisory and Self-Censorship:** Ministry advisory requires social media platforms to ensure AI tools avoid bias or discrimination in the electoral process. AI platforms implement **self-censorship and code-level censorship** to limit responses to controversial queries.

India's Stance on AI Regulation:

India aims to **develop sovereign AI and AI computing infrastructure**, focusing on real-life applications in healthcare, ag-

riculture, governance, language translation, etc., to catalyse economic development.

Currently, India is **transitioning from a no-regulation stance on AI to actively formulating regulations** based on a risk-based, user-harm approach. India's AI penetration **factor is about 3**, the highest among G20 and OECD countries. Some of the initiatives in AI are:

- Awareness Initiatives like **#AIFORALL**
- **NITI Aayog's National Strategy for AI** (2018) focused on inclusive and responsible AI
- **NITI Aayog's 'Principle of Responsible AI'** outlines seven key principles for AI use
- **TRAI proposed a domestic statutory authority** for AI regulation in July 2023, emphasizing a risk-based framework.
- **Ethical guidelines for AI** in healthcare by the Indian Council of Medical Research
- SEBI's circular guiding AI policies in the capital market
- **National Education Policy 2020** recommends integrating AI awareness into school courses.
- **Other Government Schemes for AI:** **INDIAai**; **Global Partnership on Artificial Intelligence** (GPAI); **US India Artificial Intelligence Initiative**; **Responsible Artificial Intelligence (AI) for Youth**; **Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform**.

Conclusion:

With elections looming in 2024 worldwide, including in India, the impact of AI on electoral processes demands attention. AI, especially Generative AI, presents opportunities and challenges in shaping electoral outcomes. Addressing its disruptive potential is crucial to safeguarding democratic processes and upholding electoral integrity.

Insta Links:

- [IndiaAI Mission](#)
- [What are hallucinating chatbots?](#)

Prelims Links:

Q1. With the present state of development, Artificial Intelligence can effectively do which of the following? (UPSC 2020)

1. Bring down electricity consumption in industrial units

2. Create meaningful short stories and songs
 3. Disease diagnosis
 4. Text-to-Speech Conversion
 5. Wireless transmission of electrical energy
- Select the correct answer using the code given below:**
- (a) 1, 2, 3 and 5 only
 (b) 1, 3 and 4 only
 (c) 2, 4 and 5 only
 (d) 1, 2, 3, 4 and 5
- Ans: B**

Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.

9. GLOBAL WASTE MANAGEMENT OUTLOOK 2024

Context:

Global Waste Management Outlook 2024, published by **UNEP and ISWA (International Solid Waste Association)**, assesses global waste management trends and costs.

Key findings:

1. Municipal solid waste is predicted to grow from **2.3 billion to 3.8 billion tonnes by 2050**.
2. The global direct cost of waste management was estimated at USD 252 billion in 2020, expected to nearly double by 2050 without urgent action.
3. **Barriers in waste management:** Lack of urgency **recognition, incomplete data, and climate impact underestimation**; Gendered aspects and informal sector undervaluation; Inadequate legislation, weak enforcement, and lack of enabling environment.

Recommendations:

1. **UNEP:** Redefine waste as a resource
2. **By adopting circular economy models**, which decouple waste generation from economic growth, there's potential for a **net gain of over USD 108 billion** annually by 2050
3. **Utilize data and digitalization** to enhance the waste management value chain.
4. **Replicate and scale up zero waste** initiatives.
5. **Implement producer responsibility fees** to prioritize waste reduction and prevent greenwashing.
6. **Utilize behavioural science** to engage people in waste reduction efforts.
7. **Harness the expertise of informal waste workers** and recognize the influence of women in waste management.

Role of Innovative Waste Management Solutions

1. **Recycling Technologies:** Advanced recycling technologies, such as **chemical recycling**, break down waste into its basic components which can be used to produce high-quality raw materials for new prod-

ucts.

2. **Robotic Waste Sorting: Artificial intelligence and machine learning** are being used to improve waste separation efficiency.
 - a. **For instance, ZenRobotics** has developed a robotic waste sorting system.
3. **Biodegradable Materials:** The development of biodegradable and compostable materials helps **reduce waste generation**.
 - a. **E.g.** Innovations in eco-friendly packaging, such as **edible food containers and biodegradable plastics**, are gaining traction.
4. **Biotechnology:** The use of biotechnology, such as the development of **fungi-based packaging** materials, is on the rise.
5. **Circular Economy Principles:** The implementation of circular economy principles in waste management keeps materials in use for longer periods, reducing waste generation and **promoting resource efficiency**.
6. **Zero Waste Strategies:** The promotion of zero waste strategies helps reduce waste generation and minimize environmental pollution.
7. **Smart Solutions:** Companies are developing smart solutions for waste management, transforming waste into energy and reusable products.
 - a. **E.g.** companies like **Ecube, and Enevo** focus more on technology.
8. **Consumer Education:** Companies also need to educate end users about sustainable and innovative solutions for waste management. This increases **awareness and encourages responsible waste disposal**.
9. **Government Regulations:** Government regulations and policies can encourage the adoption of innovative waste management solutions. These can include **incentives for recycling and penalties for improper waste disposal**.
10. **Collaboration Across Value Chains: Phool, an Indian start-up**, collects floral waste from temples and transforms it into charcoal-free incense sticks and biodegradable packaging material.

Importance of Waste-to-energy (WtE):

WtE refers to a group of technologies that **convert non-recyclable waste into usable forms of energy**, primarily electricity and heat. This is often done through direct combustion using waste incinerators i.e. burning the waste or the production of a combustible fuel from a gas such as methane.

WtE plants play a vital role:

1. **Energy generation:** Waste-to-energy (WtE) plants contribute to electricity generation by harnessing the calorific value of solid waste.
 - o **Eg:** India has a total installed capacity of over **554MW** from WtE plants.
2. **Waste reduction:** WtE helps in reducing the volume of solid waste, minimizing the burden on landfills and improving overall waste management.
 - o **Eg:** Incineration reduces the **volume** of waste by up to 90%, aiding in efficient disposal.

3. **Remote and rural energy solution:** WtE plants can play a crucial role in addressing energy deficits in remote and rural areas. They can produce electricity from waste generated locally, reducing reliance on centralized grids and expensive diesel generators.
 - **E.g.:** Biogas plants at the village level supported by the **National Biogas programme**.
4. **Resource utilization:** WtE facilities recover valuable **resources** from waste, such as metals and certain chemicals, promoting resource conservation.
5. **Environmental benefits:** Properly managed WtE can contribute to reducing methane emissions from landfills, thereby mitigating greenhouse gas effects.

Government Initiatives:

Initiative	Description
Extended Producer Responsibility (EPR) Mechanism	EPR holds producers accountable for the lifecycle of their products , including collection, recycling, and disposal. It aims to reduce environmental impact by shifting waste management responsibility to producers.
Waste Processing Capacity	Significant increase in waste processing capacity since 2014 , covering various waste types like solid, hazardous, biomedical, E-waste, plastic, and construction and demolition waste. Notable growth observed under the Swachh Bharat Mission (Urban) .
Swachh Bharat Mission for Solid Waste Management	Government initiative targeting “Garbage Free Cities” through door-to-door collection, source segregation , and scientific waste processing. Focus areas include source segregation, single-use plastic reduction, construction waste management, and legacy waste site remediation.
Waste Management Rules and Guidelines	Implementation of various waste management rules and guidelines under the Environment (Protection) Act, 1986 , covering solid waste, plastic waste, biomedical waste, construction waste, hazardous waste, E-waste, and battery waste. Emphasis on environmentally sound practices.

What is Extended Producer Responsibility (EPR)?

It is a policy approach and environmental strategy that places the responsibility for the entire lifecycle of a product, including its disposal, on the manufacturer or producer rather than on the end consumer or local government.



The fundamental idea behind EPR is to **encourage producers to minimize the environmental impact of their products** by considering their entire lifecycle, from the design and production phase to the end-of-life phase.

Key provisions of the Plastic Waste Management Amendment Rules, 2022

Key Provisions	Description
Provision of Extended Producer Responsibility (EPR)	Plastic packaging producers are accountable for end-of-life collection and recycling, incentivizing sustainable design and recyclable material use. This shift reduces municipal burden and ensures responsible disposal.
Collection Targets	Mandates producers to collect 35% of plastic waste by 2024 , escalating to 70% by 2025 in phases, ensuring higher collection rates and mitigating environmental pollution.
Minimum Recycled Content	Requires firms to use 10% recycled plastic in packaging by 2023 , increasing to 20% by 2026, fostering the growth of the recycling industry and reducing virgin plastic production.
Collection Mechanism	Producers must establish collection systems, individually or collectively , ensuring efficient post-consumer waste retrieval for recycling, preventing landfilling and environmental pollution.
Cost Attribution	Producers bear collection and recycling costs , incentivizing sustainable practices and discouraging non-recyclable material use. This financial responsibility promotes environmental stewardship and reduces plastic pollution.

Conclusion:

The key to sustainable waste management lies in a holistic approach. Prioritizing source reduction and waste minimization through awareness campaigns and responsible consumption patterns should be paramount which is also an emphasis under **SDG Goal-12**.

Insta Links:

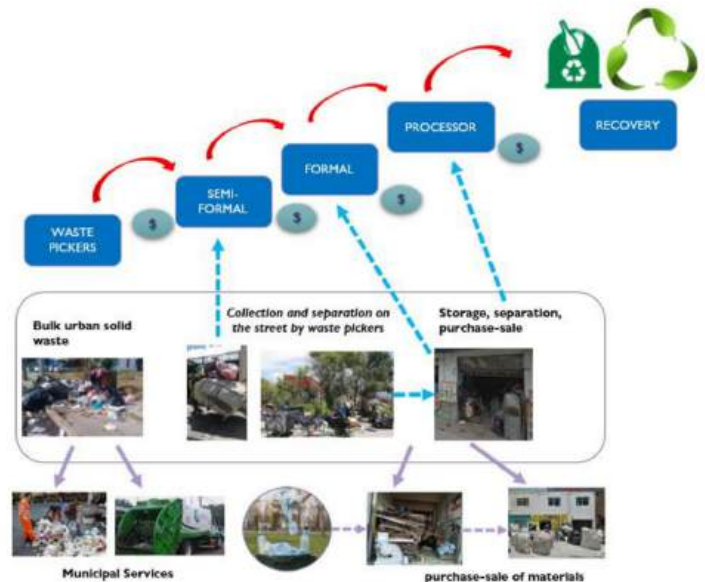
1. [Swachh Bharat Abhiyan: A Critical Review](#)
2. [75% of Villages Are Now ODF Plus under Swachh Bharat Mission – Grameen](#)

Prelims Links:

Q. As per the Solid Waste Management Rules, 2016 in India, which one of the following statements is correct? (UPSC 2019)

- (a) Waste generator has to segregate waste into five categories.
- (b) The Rules are applicable to notified urban local bodies, notified towns and all industrial townships only.
- (c) The Rules provide for exact and elaborate criteria for the identification of sites for landfills and waste processing facilities.
- (d) It is mandatory on the part of the waste generator that the waste generated in one district cannot be moved to another district.

Ans: (c)



Challenges Faced by Informal Waste Pickers:

1. **Systemic Marginalisation:** The majority of waste pickers belong to the marginalized section. Their subordinate position in the caste hierarchy exacerbates vulnerabilities.
2. **Lack of equipment:** Nearly 1.5 million waste pickers in India's urban workforce, with half being women, undertake hazardous work without safety equipment, leading to health issues and injuries.
3. **Economic Uncertainty:** Irregular work, low income, and susceptibility to exploitation perpetuate the poverty cycle.
4. **Lack of Recognition and Representation:** Excluded from policy and legal frameworks despite integral role in waste management.
5. **Exclusion of Informal Waste Pickers:** Private sector involvement in waste management limits access to dump sites, exacerbating vulnerability

Extended Producer Responsibility (EPR) presents a promising shift in waste management, assigning responsibility to commercial waste producers and promoting eco-friendly practices. In theory, it holds potential for social inclusivity by recognizing informal waste pickers. However, practical concerns arise regarding its impact on the informal sector.

1. **Implementation Issues:** EPR may divert waste from the informal sector, threatening livelihoods and risking displacement.
2. **Neglecting Informal Waste Pickers:** EPR guidelines lack specific inclusion of informal waste pickers or their representative organizations.
3. **Conflict Between Solid Waste Management Rules and EPR Guidelines:** Solid Waste Management Rules prioritize waste pickers' inclusion, while EPR guidelines fail to do so.

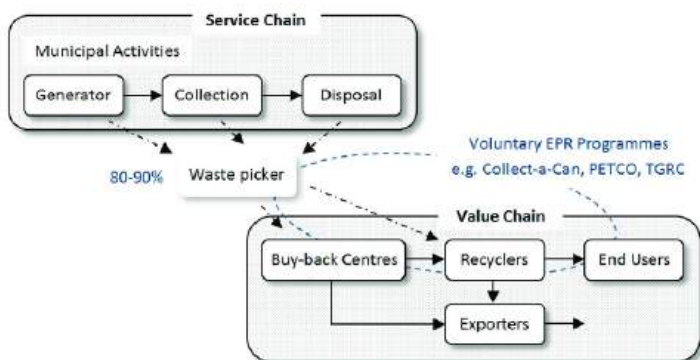
Way Forward:

Recalibrating EPR policies is crucial for sustainable waste

10. WASTE MANAGEMENT: INFORMAL WASTE PICKERS

Who are informal Waste Pickers?

Informal waste pickers are marginalized workers who play a crucial role in waste management by collecting, sorting, and trading recyclable materials. Often facing systemic marginalization and exclusion, they operate outside formal waste management systems, enduring health hazards and lack of legal protection. **International Waste Pickers Day, observed on March 1**, highlights the challenges encountered by informal waste pickers globally.



management and social inclusion, **necessitating the recognition of waste pickers’ traditional knowledge** and active involvement in decision-making processes. Additionally, **the impending global Plastic Treaty should prioritize a just transition for waste pickers**, acknowledging their significant contributions and safeguarding their livelihoods. As India faces mounting challenges with plastic waste, **integrating informal waste pickers into waste management frameworks is imperative**. Their expertise can enhance EPR effectiveness, urging a reconsideration of EPR norms to include them in a legal framework. International cooperation and local initiatives must converge to **recognize, protect, and empower these workers**, fostering a more inclusive and resilient waste management ecosystem.

11. BENGALURU’S WATER CRISIS AND LESSONS FOR INDIA

Context:

Bengaluru faces a **looming water crisis**, prompting concerns of a **potential Day Zero scenario akin to Cape Town**.

Status:

- As per the Report, **223 of the 236 talukas in Karnataka** are affected by drought, including Mandya and Mysuru districts, the sources of Bengaluru’s water.
- A BBC report highlighted **Bengaluru as one of the cities likely to run out of drinking water**, second only to Sao Paulo, Brazil, by 2031

What is Day Zero?

Day Zero is a term used to describe the day **when a city’s municipal water supply** is expected to be **depleted entirely**, forcing authorities to shut down water connections for homes and businesses.

Reasons Behind Bengaluru’s Severe Water Scarcity:

Reasons	Details
Reduced Rainfall and Empty Water Reservoirs	Insufficient rainfall affects the Cauvery River. Water levels in reservoirs like Harangi, Hemavathi, and Kabini at 39% capacity
Depletion of Groundwater Sources	Urban growth leads to reduced groundwater recharge. Excessive extraction causes rapid depletion, and many borewells dry up
Inadequate Infrastructure	Infrastructure lagging behind urban growth. Completion of Phase-5 of the Cauvery project is expected only by May 2024 for improved water supply

Climate Change	Erratic rainfall and prolonged droughts due to climate change. El Niño phenomenon cited as a cause by the Indian Meteorological Department
Pollution of Water Bodies	About 85% of Bengaluru’s water bodies polluted, per an EMPRI study
Mismanagement and Inequitable Distribution	Inefficient water management practices exacerbating the crisis
Legal and Political Challenges	Disputes over water sharing with neighbouring states, complicate resource management. Tussles between central and state governments affecting relief efforts

India’s Status:

India is endowed with rich water resources:

- India has **4% of the world’s water resources**
- India has **1123 billion cubic metres** of surface and groundwater resources.
- Rainfall:** According to the Central Water Commission, **India receives 4,000 billion cubic metres** in rainfall, which is **higher than its requirement**.
- However, in 2023**, around **91 million Indians** will not have access to safe water. This data indicates the massive water shortage in India.

Despite being endowed with water resources, India faces a water crisis due to the following reasons:

- Uneven Rainfall:** Uneven distribution of rainfall with around **70% of India’s rainfall being confined to 3-4 months**. And there is **regional variability** with some regions having very high rainfall while others suffer from scarcity.
- River basins: Uneven flow** of water in different river basins. For instance, the **surplus in the Ganga-Brahmaputra basin** but the **deficit in seasonal rivers in Indian peninsular regions**.
- Inadequate rainfall:** According to data released by the **India Meteorological Department**, the **South-West monsoon** during June- August 2023 has been **below normal in 42 per cent** of the districts.
- Groundwater overuse:** According to the **Stockholm International Water Institute**, with farmers providing **electricity subsidies** to help power the groundwater pumping, the water table has seen a drop of up to **4 meters** in some parts of the country.
- Water pollution:** The **Central Pollution Control Board** reported that of the 603 rivers assessed, there are **311 Polluted stretches** in 279 rivers in 30 States & Union Territories.
- Climate change:** **Changing rainfall patterns, increase in the frequency of droughts** etc. have affected water availability in various regions. Eg: **El Nino** episodes are becoming more frequent

- **Agriculture policies and practices:** Fertilizer subsidies, free electricity, price support for water-intensive crops and practices like flood irrigation.

The role of caste exacerbates water access challenges in India:

1. **Violence and discrimination:** Dalit students face violence for accessing water, such as the case of Indra Meghwal beaten to death in Rajasthan.
2. **Purity and pollution:** Dalits often face untouchability in accessing safe drinking water, with over 20% lacking access, according to the National Campaign on Dalit Human Rights.
3. **Intersectional water justice:** Water access is intertwined with caste, class, and gender, perpetuating structural inequalities, as seen in the disparity between water allocation in Delhi's army cantonments and its unauthorised colonies.
4. **Modulates human-water interactions:** The caste structure influences human impact on the hydrological cycle, as illustrated by the correlation between caste hierarchy and topographic maps in Indian towns.
5. **Limited representation in decision-making:** Upper-caste dominance in Indian environmental studies results in little understanding of how lower castes experience water and the environment.

Key Government Schemes To Tackle The Groundwater Crisis in India:

1. **MGNREGA:** Supports water conservation through rural employment.
2. **Jal Kranti Abhiyan:** Raises awareness on water conservation.
3. **National Water Mission:** Promotes sustainable water management.
4. **Atal Bhujal Yojana (ABHY):** Improves groundwater management.
5. **Jal Jeevan Mission (JJM):** Aims to provide tap water to rural households.
6. **National Mission for Clean Ganga (NMCG):** Addresses Ganga basin groundwater issues.

Steps to Address the Water Crisis in India:

1. **Inclusive Water Governance:** Inclusive representation in local water management committees and decision-making bodies to ensure that the voices of all castes are heard.
2. **Interlinking of Rivers:** Connect surplus rivers to deficient regions.
3. **Promote Water Conservation:** Encourage rainwater harvesting and efficient irrigation.
4. **Invest in Infrastructure:** Allocate funds for water projects and explore financing options.
5. **Promote Sustainable Agriculture:** Support water-efficient farming practices.
6. **Address Pollution:** Enforce regulations to combat industrial and agricultural pollution.

7. **Adopt One Water Approach:** Manage water sources sustainably and inclusively.
8. **Legal measures:** Strengthen and enforce laws that prohibit discrimination based on caste in accessing water resources. E.g.: SC/ST PoA, 1989.
9. **Community-based water management:** Empower local communities to collectively address water access challenges by actively involving members from all castes.
10. **Awareness generation:** Conduct educational programs to raise awareness about the importance of equitable water access. Challenge stereotypes and prejudices that contribute to discriminatory practices.

To learn about [Traditional Methods of water conservation in India: Click Here](#)

Conclusion:

India, despite its water surplus, grapples with a water crisis, highlighting the need for **improved water resource management**. The key lies in **credible data collection** to understand water demand across various sectors like **agriculture, domestic, and industrial use**. Prioritizing water distribution among these sectors is crucial. Embracing the principles of **reduce-recycle-reuse and promoting water conservation** methods are vital steps. Furthermore, there's a need for the **convergence of laws, schemes, and agencies** to ensure optimal utilization of water resources.

Insta Links:

- [Regenerative agriculture: A step towards water conservation](#)

Mains Links:

- Q. How and to what extent would micro-irrigation help in solving India's water crisis? (UPSC 2021)
- Q. What is water stress? How and why does it differ regionally in India? (UPSC 2019)

Prelims Links:

Q. What are the benefits of implementing the 'Integrated Watershed Development Programme'? (UPSC 2014)

1. Prevention of soil runoff
2. Linking the country's perennial rivers with seasonal rivers
3. Rainwater harvesting and recharge of groundwater table
4. Regeneration of natural vegetation

Select the correct answer using the code given below:

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

Ans: C

12. WATER CRISES THREATEN WORLD PEACE (REPORT)

Context:

The **United Nations World Water Development Report 2024**, published by **UNESCO on behalf of UN-Water** on **World Water Day**

- **World Water Day**, observed annually on March 22, is a global initiative supported by the United Nations, dating back to 1993. This year's theme is "**Leveraging water for peace**"

Key Highlights of the Report:

1. **Current Status of Water Resources:** Agriculture consumes 70% of freshwater withdrawals in the world. **Lake Chad** has shrunk by 90% in the past 60 years.
2. **Groundwater depleting:** Cooperation over shared surface water is increasing, but groundwater resources are often neglected.
3. **Water's Linkage to Peace and Prosperity:**
 - i. **Water and Peace:** Water scarcity can escalate local disputes, as observed in the **Sahel region. Migration due to water scarcity can heighten tensions** in settlement areas and exacerbate food insecurity.
 - ii. **Water and Prosperity:** Water sustains environmental integrity. In low and lower-middle-income countries, **70-80% of jobs depend on water.** Water is crucial for inclusivity, as it **affects girls and women's education**, economic participation, and safety.
 - iii. **Water and Food Production:** Regions like Northwest India and North China are among the top three areas worldwide with high water-related risks to food production.
4. **Challenges in Achieving SDG 6:** Half of the global population faces severe water scarcity at some point each year.
5. **Water-Prosperity Paradox:** Developed water infrastructure can drive growth and prosperity, but only the wealthiest countries can afford such investments.

Key recommendations of the report:

1. **Emphasize sustainable management** of water resources
2. **Advocate for increased private investment** to achieve **universal access to water by 2030**
3. **Encourage industries to decouple water usage** from production e.g., Tata Chemicals cut the use of groundwater by **over 99% within a year through re-**

cycling and water management

4. **Boost international cooperation and transboundary agreements** to address water-related tensions and maintain peace.
5. **Safeguard water resources and enhance global cooperation** to mitigate water stress and conflicts.
6. Prioritize achieving **access to safely managed drinking water and sanitation** for all by 2030.
7. **Address inequalities in water access**, particularly among vulnerable populations like girls and women.
8. **Highlight successful cooperation models:** E.g., **Framework Agreement on the Sava River Basin:** It aims to establish a multilateral agreement for sustainable water management among Bosnia and Herzegovina, Croatia, Serbia, and Slovenia.
9. **Encourage states to enact policies ensuring fair and equitable access** to water resources with support from the United Nations system.

Terms related to water:

Terms used	Definition
Water scarcity	Lack of sufficient available water resources to meet water usage demands within a region
Water stress	The difficulty of obtaining fresh water sources during a period of time may lead to further depletion and deterioration of available water
Water shortage/deficits	Shortages of water caused by climate change, pollution, increased human demand, and overuse of water
Water crisis	A situation where the available potable, unpolluted water within a region is less than that region's demand

Steps taken for Water Conservation:

Global:

1. **UN 2023 Water Conference: First global 'Action Plan'** recognizing that "all peoples have the right to have access to drinking water in quantities and of a quality equal to their basic needs."
2. **Private: IBM Sustainability Accelerator** focused on water management
3. **Data and models:** World Meteorological Organization's **Hydrological Status and Outlook System**, offered data analysis tools.
4. **Knowledge sharing: W12+ Blueprint**, a UNESCO platform that hosts city profiles and case studies of programs (for cross cities learning)
5. **Capacity building: Making Rights Real** initiative offered to help marginalised communities and women understand how to exercise their rights. **Water**

for **Women Fund**’ offered support mechanisms for more effective and sustainable water, sanitation, and hygiene outcomes for women.

6. **NGOs:** World Vision is committed to raising and investing \$2 billion by 2030 to extend the impact of transformative **water, sanitation, and hygiene (WASH) services** across 50 countries in six regions.
7. **Sustainable Development Goals (SDGs) Goal 6** includes a specific goal on water and sanitation (Goal 6)
8. **Dublin Principles** water was established as an “economic good”

India:

1. \$50-billion commitment to improving rural drinking water services under its [Jal Jeevan Mission](#).
2. [Jal Kranti Abhiyan](#)
3. [National Water Mission](#)
4. National Rural Drinking Water Programme
5. [NITI Aayog Composite Water Management Index](#)
6. [Jal Shakti Abhiyan](#)
7. [Atal Bhujal Yojana](#)

About UN-Water

It is an interagency mechanism, that was **formed in 2003 and serves as the coordinating body for United Nations** entities and international organizations working on water and sanitation issues. With over 30 UN organizations and 47 international partners, it ensures a unified response to water challenges. **Headquartered in Geneva, Switzerland,** UN-Water facilitates coordinated action at global, regional, and country levels to address freshwater-related matters, including sanitation

Insta Links:

- [UN World Water Development Report 2023](#)
- [U.N. water conference](#)

Prelims Link:

Q. With reference to ‘Water Credit’, consider the following statements: (UPSC 2021)

It puts microfinance tools to work in the water and sanitation sector.

It is a global initiative launched under the aegis of the World Health Organisation and the World Bank.

It aims to enable poor people to meet their water needs without depending on subsidies.

Which of the statements given above are correct?

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

Ans: C

Mains Link:

Q. What are the salient features of the Jal Shakti Abhiyan

launched by the Government of India for water conservation and water security? (UPSC 2020)

GENERAL STUDIES – 4

1. EXAMPLES OF ETHICS

Example 1: [Calcutta High Court Judge Gangopadhyay to join the BJP](#)

Recently, **Calcutta High Court Judge Gangopadhyay joined the BJP. It** raises concerns about **judicial propriety and impartiality**. His contentious record on the bench, marked by controversies and accusations of partisanship, casts **doubt on the integrity** of his decisions. While judges have transitioned into politics before, Gangopadhyay’s case is notable for the circumstances surrounding his resignation and his history of confrontations with the elected government. His rationale for joining the BJP, citing insults from TMC leaders, lacks **credibility and undermines the impartiality** expected of a constitutional court judge. Overall, his move into politics **compromises the integrity of his judicial legacy**.

Experts Opinion:

Experts argue that **such actions not only damage the Judiciary’s credibility** but also violate constitutional principles, notably **Article 50**, which mandates the **separation of the judiciary from the executive**. There’s concern that **post-retirement prospects could influence pre-retirement judgments**. The constitution remains silent on post-retirement rehabilitation.

SC adopted the **“Restatement of Values of Judicial Life”** in 1997. As per it:

1. Any act of a Judge which erodes the credibility of the judiciary has to be avoided
2. **A Judge should not contest the election** to any office of a Club, society or other association.

14th Law Commission Report (1958) recommended that judges should be barred from accepting employment with the Union or the state, as a post-retirement job.

2. EXAMPLE 2: GANESH BARAIYA (WORLD’S SHORTEST DOCTOR)

Ganesh Baraiya from Gujarat, **standing at just 3 feet tall**, recently completed his MBBS, potentially becoming the **world’s shortest doctor**. Despite facing initial rejection from the Medical Council of India due to his **dwarfism**, he fought a long legal battle that resulted in a **landmark Supreme Court ruling** in his favour. With determination and support from mentors and friends, he fulfilled his dream of becoming a doctor. Now working as an intern at a **Bhavnagar hospital, Dr Baraiya’s** story showcases the resilience and the triumph

of the human spirit in overcoming adversity.

Ganesh Baraiya’s journey embodies ethical values such as **perseverance, determination, and resilience**.

“You don’t have to be a fantastic hero to do certain things, to compete. You can be just an ordinary chap, sufficiently motivated to reach challenging goals.”

— Edmund Hillary

Example 3: Iris (Kerala’s first generative AI teacher)

Kerala’s KTCT Higher Secondary School in Thiruvananthapuram recently introduced **Iris, the state’s first generative AI teacher**. Developed in collaboration with Makerlabs Edu-tech Private Limited, **Iris is a humanoid designed to enhance learning experiences**. It can communicate in three languages, answer complex questions, and offer features like voice assistance, interactive learning, and mobility.

Iris was created as part of the **Atal Tinkering Lab project by NITI Aayog** to promote extracurricular activities in schools. Powered by Robotics and Generative AI technologies, Iris aims to revolutionize education by providing personalized learning experiences tailored to each student’s needs and preferences.



The introduction of Iris, Kerala’s first generative AI teacher, reflects ethical values such as **innovation, inclusivity, and student-centred learning**.

3. ACHIEVING HAPPINESS

Context:

The upcoming **International Day of Happiness on March 20** prompts reflection on the elusive nature of true contentment amid global strife.

What is Happiness?

Happiness is a **mental and emotional state characterized by contentment, satisfaction, and enjoyment**. It is subjective and elicits positive thoughts and feelings, encompassing various emotions like joy, amusement, and triumph.

Examples:

1. Individual Life Examples:

- i. **Personal Achievement:** Completing a **long-term goal, like graduating from university**, can bring a profound sense of happiness and accomplishment to an individual.
- ii. **Quality Time with Loved Ones:** Spending a relaxing day with family or friends, and engaging in activities you enjoy together, can foster happiness through social connections.
- iii. **Practising Gratitude:** Taking time each day to reflect on things you’re thankful for, whether big or small, can cultivate a sense of happiness and appreciation.

2. Societal Life Examples:

- i. **Social Support Systems:** Societies that prioritize community support networks, such as accessible healthcare, education, and social welfare programs, contribute to the overall happiness and well-being of their citizens.
- ii. **Cultural Celebrations:** Festivals and cultural events that bring communities together in celebration and unity often lead to collective happiness and a sense of belonging.

Thinkers: **Aristotle** sees it as the pursuit of well-being and fulfilment, **Buddhism** emphasizes overcoming craving, while **Hinduism** focuses on realizing one’s true self by transcending duality. **UN** describes ‘happiness’ as a fundamental human goal.

Is economic growth sufficient to ensure a happy life?

Economic growth isn’t always enough for happiness. While wealth can contribute, studies reveal it’s not a guarantee. For instance, despite its affluence, the USA ranks low in the UN’s Happiness Report. Conversely, Nordic countries like Finland, Denmark, and Sweden, while not as rich, often rank higher.

What is a ‘Happy Society’?

A **“happy society”** is generally considered to be a society in which the majority of people report **feeling satisfied and content** with their lives.

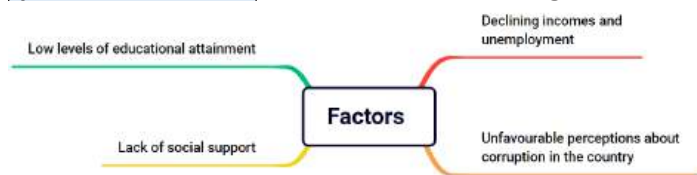
- This can be influenced by **factors** such as a **high standard of living, access to education and healthcare, a sense of community and social support**, and low levels of crime and violence.

Why has Indian society continuously underperformed in the gross happiness Index?

India has ranked 126 out of 150 countries in the annual World Happiness Report 2023, finding itself **toward the bottom** of the index for the eighth consecutive year.

Factors Responsible	Impact
---------------------	--------

Poverty and income inequality	Despite economic growth, a significant portion lives in poverty, lacking basics like food and healthcare.
Corruption	Undermines public trust, and reduces the effectiveness of public services.
Lack of access to education	Many, especially rural dwellers, lack a quality education, impacting well-being.
Lack of access to healthcare	Limited healthcare access negatively affects overall well-being.
Social and cultural issues	Challenges include discrimination, violence against women, child labour, and caste-based discrimination.
Political instability	Instability and ineffective governance contribute to lower well-being.
Rapid urbanization	Congested cities and urbanization impact well-being negatively.
Low earnings	Economic challenges like dropping earnings and unemployment affect well-being.
Environmental pollution	Pollution and its impact on mental health reduce well-being.



International Example:

Nordic countries consistently perform well in the World Happiness Report due to their strong government traits, including effective financial management, service delivery, rule of law, peacekeeping, and absence of repression. Additionally, these countries prioritize citizen welfare, contributing to their higher levels of happiness.

To achieve a happy citizen and society:

1. Prioritize social welfare alongside economic growth.
2. Foster environmental sustainability and conservation efforts.
3. Ensure access to quality education and healthcare for all.
4. Combat corruption and promote transparency in governance.
5. Address social inequalities and discrimination.
6. Promote community engagement and social cohesion.
7. Invest in mental health services and promote well-being initiatives.
8. Encourage active participation in civic and cultural activities.

Conclusion:

The pursuit of happiness is intertwined with sustainable

development, combining social inclusion and environmental preservation. India must adopt a **holistic approach encompassing economic, social, and political dimensions** to achieve genuine progress and enhance overall happiness, prioritizing not just economic growth but also social welfare and good governance.

About World Happiness Report:

The World Happiness Report, **released annually by the UN Sustainable Development Solutions Network, ranks** countries based on happiness. **Started in 2012**, it coincides with the **International Day of Happiness**. Surveying people in over 150 countries, the report evaluates happiness using six factors: **social support, income, health, freedom, generosity, and absence of corruption.**

Mains Link:

Q. Happiness depends upon ourselves.” – Aristotle. What does this quote mean to you? (150 words)

4. HUMANITARIAN AID IN CONFLICT ZONES

Context:

Politics often interferes with humanitarian aid in conflict zones (such as the Gaza war in the current situation), creating various ethical issues.

What is humanitarian aid?

Humanitarian aid refers to **assistance provided in response to humanitarian crises** such as natural disasters, conflicts, or other emergencies. It includes essential supplies like food, water, shelter, and medical care, aimed at alleviating suffering and saving lives. Humanitarian aid promotes ethical values like **compassion, empathy, solidarity, and the inherent worth and dignity of every individual.**

How does Politics often interfere with humanitarian aid in conflict zones?

Issue	Description
Funding cuts	E.g., U.S. Congress stops funding to UNRWA
Political conditions	Aid delivery is halted unless certain political demands are met
Blockades and restrictions	E.g., Israel blocking aid convoys to Gaza during the current crisis
Manipulation for leverage	Aid used as a bargaining tool in negotiations
Militarization of aid	Airdrops leading to casualties during food distribution
Lack of access	Humanitarian access denied due to political tensions

<p>The UN Security Council's approach to humanitarian aid is viewed as inconsistent</p>	<p>Selective Enforcement: While the Council calls for aid in places like Gaza, its actions, such as the U.S.'s abstention and labelling of resolutions as non-binding, suggest selective enforcement of aid policies.</p>
	<p>Inadequate Action: Despite recognizing the need for aid in conflict zones like Syria, Yemen, and Ethiopia, the Council's actions are often limited by political interests, resulting in insufficient aid delivery.</p>
	<p>Diplomatic Tool: Aid is sometimes used as a diplomatic tool, as seen in Afghanistan, where aid was provided without significant progress on women's rights</p>

Denial of aid raises ethical concerns such as:

- 1. Violation of human rights:** E.g., Secretary of State Antony Blinken recently stated that **"100 per cent of the population in Gaza is at severe levels of acute food insecurity."**
- 2. Exacerbation of suffering:** Without aid, vulnerable populations face increased hardship, including hunger, illness, and displacement.
- 3. Political manipulation:** Denying aid for political gain exploits the vulnerable and undermines humanitarian principles.
- 4. International obligations:** Denying aid violates international laws and conventions that mandate assistance to those in need.
- 5. Loss of trust in humanitarian efforts:** Denial of aid erodes trust in humanitarian organizations and the international community's commitment to help those in crisis.

Ethical Thinker's perspective on humanitarian aid:

Ethical thinkers, such as **Immanuel Kant and Peter Singer**, advocate for the provision of humanitarian aid during conflicts. They argue that it is a **moral imperative to alleviate suffering and uphold human dignity**, regardless of the circumstances. **Kant emphasizes the importance of treating others as ends in themselves**, suggesting that providing aid aligns with the principle of universal respect for human life. Similarly, **Singer's utilitarian approach emphasizes maximizing overall well-being**, which includes helping those in need during conflicts. Both thinkers highlight the ethical obligation to prioritize humanitarian concerns and alleviate suffering, even during conflicts.

India plays a significant role in providing humanitarian aid:

- 1. Aid to Sri Lanka:** In 2008, India sent aid to displaced Sri Lankan Tamil civilians, serving as both a humanitarian gesture
- 2. Continued Support:** In 2022, Tamil Nadu's govern-

ment sent substantial aid to Sri Lanka during its economic crisis, demonstrating India's ongoing commitment to humanitarian assistance.

- 3. Global Contribution During COVID-19:** India extended its humanitarian efforts globally by **sending vaccines to over 100 countries** during the pandemic, showcasing its capability and willingness to support international humanitarian causes.

Steps to provide unhindered humanitarian aid:

- 1. Political Diplomacy:** Conduct diplomatic negotiations between humanitarian organizations, governments, and armed groups to establish safe passage for aid convoys in conflict zones.
- 2. International Cooperation:** Coordinate and Collaborate between the United Nations, Red Cross, and neighbouring countries to provide logistical support and ensure safe transit of aid supplies.
- 3. Security Measures:** Deployment of peacekeeping forces or armed escorts to accompany aid convoys in volatile areas.
- 4. Public Awareness:** E.g., Media campaigns and advocacy efforts to highlight humanitarian crises and mobilize support for aid initiatives.
- 5. Accountability and Transparency:** E.g., establishing monitoring mechanisms and conducting regular audits to track the delivery and distribution of aid supplies.
- 6. Local Engagement:** E.g., **Partnering with local NGOs** and community leaders to identify vulnerable populations and tailor aid interventions to meet their specific needs.
- 7. Adherence to International Law:** Providing **aid impartially and without discrimination**, in accordance with the principles of humanity, neutrality, and impartiality.

Mains Link:

Q. 'The will to power exists, but it can be tamed and be guided by rationality and principles of moral duty.' Examine this statement in the context of international relations. (UPSC 2020)

Q. Strength, peace and security are considered to be the pillars of international relations. Elucidate. (UPSC 2017)

CONTENT FOR MAINS ENRICHMENT

Context	How to use?
<p>1. USHA MEHTA</p>	<p>Who was Usha Mehta?</p> <p>She was a prominent figure in <u>India’s freedom struggle</u>, known for her role in establishing <u>Congress Radio during the Quit India Movement in 1942</u>. A <u>law student in Bombay</u> at the time, Mehta was deeply inspired by Mahatma Gandhi’s call for civil disobedience. She played a pivotal role in <u>setting up Congress Radio</u> as an underground radio station to counter British censorship and provide uncensored news and information to the Indian public.</p> <p>Despite challenges, they succeeded in providing a vital voice for India’s freedom struggle, amplifying the call for independence and inspiring generations. When Mehta was released from <u>Pune’s Yerawada Jail in March 1946</u>, she was hailed in the nationalist media as “<u>Radio-ben</u>”. Conferred the <u>Padma Vibhushan in 1998</u>, Mehta died after a brief illness in 2000.</p> <p>Usha Mehta’s story exemplifies ethical values such as:</p> <ol style="list-style-type: none"> 1. Commitment to Justice 2. Courage: Mehta demonstrated courage in the face of adversity, refusing to bow down to British authorities and continuing to broadcast nationalist messages even when faced with the threat of arrest. 3. Integrity: Despite the risks involved, she remained true to her principles and refused to compromise on the ideals of freedom and democracy. 4. Sacrifice: Mehta made personal sacrifices, including risking her safety and freedom, for the greater good of the nation and its people. 5. Leadership: She showed leadership by taking the initiative and organizing the establishment of Congress Radio, rallying others to join the resistance against British colonial rule.
<p>2. MISSING VOTERS</p>	<p>“<u>Missing voters</u>” are primarily young, <u>single male migrants in urban areas</u> whose addresses on electoral rolls don’t match their current living places.</p> <p>The Election Commission’s plan to <u>use remote voting machines</u> could help these voters participate, potentially <u>increasing voter turnout by up to 30%</u> and impacting political focus and party strategies. This inclusion could lead to a <u>shift in political manifestos</u>, focusing on issues like <u>urban employment and migration-related challenges</u>. Additionally, it may lead to <u>demands for specific policies</u> addressing job security and skill development.</p> <p>The Election Commission’s initiative is seen as <u>crucial for ensuring a more inclusive and representative democratic process</u>.</p> <p>Other countries are tackling the issue of missing voters with the following strategies:</p> <ol style="list-style-type: none"> 1. Remote Voting Systems: Estonia has implemented remote voting systems, enabling <u>citizens to vote online or via mobile devices</u>, enhancing accessibility for those unable to visit polling stations. 2. Postal Voting: Australia and Switzerland offer postal voting options, allowing <u>eligible voters to cast their ballots by mail</u>, accommodating those unable to attend polling stations on election day. 3. Voter Registration Reforms: Canada and New Zealand have simplified voter registration processes <u>through automatic registration systems</u> and initiatives to update voter rolls using government databases, reducing the likelihood of exclusion due to address discrepancies. 4. Outreach Programs: The <u>United Kingdom and the United States</u> conduct outreach programs to educate citizens about voter registration procedures, particularly targeting marginalized communities to ensure their participation in elections. <p>Usage: The example can be used in Polity/Governance/Essay as a way to electoral reforms.</p>

<p>3. HYODOL</p>	<p>Context: South Korean company Hyodol has introduced an AI social robot priced at \$1,800 to combat loneliness among seniors, particularly those with dementia.</p> <p>Deployed by the South Korean government, these robots offer customized care, including conversation, music, reminders, and health monitoring features. They utilize advanced language processing and emotional AI systems to provide realistic engagement. However, concerns about data privacy and security remain regarding the extensive data collection by the robot.</p> <p>Other such robots for elders are:</p> <ol style="list-style-type: none"> 1. ElliQ: AI-powered social robot designed to provide companionship, cognitive stimulation, and assistance with daily activities. 2. CarePredict: Wearable AI device that monitors seniors' activities, detects anomalies, and provides insights into their well-being. 3. Cutii: French AI companion robot equipped with video conferencing, entertainment features, and reminders for medication and appointments. 4. Zora: AI-powered humanoid robot used in elder care facilities to provide entertainment, assistance, and companionship to residents.
<p>4. SUSTAINABLE LIFESTYLE</p>	<p>Context: The United Nations Environment Assembly (UNEA) adopted a resolution on sustainable lifestyles submitted by India, and co-sponsored by Sri Lanka and Bolivia.</p> <p>The resolution acknowledges the 10-Year Framework of Programmes on Sustainable Consumption and Production (SCP), initiated at Rio+20 in 2012. This framework includes six programs covering areas such as</p> <ol style="list-style-type: none"> 1. Public procurement 2. Consumer information 3. Tourism 4. Lifestyles 5. Education 6. Buildings and construction 7. Food systems <p>Implemented by the One Planet Network, the resolution urges member states to promote collaboration between public and private sectors and to undertake education and awareness initiatives regarding sustainable lifestyles.</p> <p>What is Sustainable Lifestyle?</p> <p>A sustainable lifestyle involves adopting behaviours and practices that minimize harm to the environment, promote social equity, and ensure economic prosperity for current and future generations. It encompasses:</p> <ol style="list-style-type: none"> 1. Conscious consumption 2. Renewable energy use 3. Waste reduction 4. Eco-friendly transportation 5. Ethical sourcing 6. Responsible water usage <p>The goal is to maintain a balance between meeting present needs while preserving resources and ecosystems for future generations.</p> <p>Mission LiFE, introduced by India at UNFCCC COP26 (Oct 2022), aims to encourage individual and community actions for environmental preservation. It operates in three phases: changing demand by nudging individuals towards eco-friendly practices, changing supply by enabling industries to meet this demand, and changing policy to support Sustainable Consumption and Production (SCP).</p>

5. GROWTH WITHOUT BASIC RIGHTS IS POINTLESS: SC

Context: The Supreme Court, in its verdict on the Vedanta case, emphasized the **fundamental importance of basic rights such as clean air, water, and soil, alongside** economic growth.

Upholding the closure of Vedanta’s copper smelting plant in Thoothukudi, Tamil Nadu, the court stressed the need to prioritize the protection of these rights for sustainable progress.

Important Principles stated by SC:

Principle	Definition	Examples
Public Trust Doctrine	The state holds natural resources in trust for the benefit of the public.	Government protects forests, rivers, and other natural resources for the well-being of the public.
Intergenerational Equity	Present residents of the earth hold the earth in trust for future generations.	Implementing policies to reduce carbon emissions to mitigate climate change and preserve the environment for future generations.
Polluter Pays Principle	Those who pollute or degrade the environment should bear the costs of mitigation and restoration.	Industries responsible for water pollution funding cleanup efforts to restore affected ecosystems and water bodies; Extended Producers’ Responsibilities Law
Sustainable Development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.	Investment in renewable energy sources to ensure energy security while minimizing environmental impact for future generations.

Usage: These principles can be used in Essay/Ethics/Environment questions

ILO Recommendation for Domestic Workers

Context: The [International Labour Organization \(ILO\)](#) has issued **a new policy brief urging governments, workers’ organizations, and employers** to ensure that **domestic workers** have access to labour rights and social protection.

Who are domestic workers?

Domestic workers are individuals (women in particular) hired to perform various household tasks within private residences, such as cleaning, cooking, childcare, and other domestic duties. They play a crucial role in supporting families and **often work without formal contracts or labour protections.** There are about **5 million domestic workers** in India (of which 3 million are women)

Recommendations:

1. **Recognize domestic workers as care workers** and integrate them into national care policies and social security systems.
2. **Ratify the International Labour Organization (ILO) Convention 189**, known as the Domestic Workers Convention, 2011, to protect the rights of domestic workers.
3. **Implement skills recognition and training initiatives** to formally value the work of domestic workers.
4. **Raise awareness** about the critical role of domestic workers in society.

Steps taken by India:

1. Implementation of the [Sexual Harassment of Women at Workplace Act, 2013](#), to protect female domestic workers from sexual exploitation.
2. Inclusion of provisions for **domestic workers in the Code on Wages, 2019.**
3. **Provision of social security for all unorganized workers**, including domestic workers, under the [Code on Social Security, 2020.](#)

<p>Sosamma Iype: Rescuer of the Vechur Cow</p>	<p>Context: Dr. Sosamma Iype won the Padma Shri in 2022 for her remarkable achievement of saving and resurrecting the indigenous Vechur cow breed.</p> <p>About Vechur Cow: It is a rare Bos indicus breed from Kerala, India, and holds the Guinness World Record as the smallest cattle breed. Named after the village of Vechoor (Kottayam district, Kerala), it's valued for its high milk yield relative to its food consumption.</p> <p>Professor Iype's efforts: She was deeply attached to the breed from her childhood and embarked on a mission to revive it when she realized its disappearance. Her efforts initially met with skepticism and challenges, led to the establishment of the Vechur Conservation Unit at Kerala Agricultural University. Despite obstacles from officials, colleagues, and media, she persevered, expanding her project's scope and inspiring national initiatives. Through community participation and empowerment, she ensured the Vechur's survival and made a lasting impact on India's cultural and agricultural heritage. By 2000, it was listed on FAO's endangered breeds list. Today, around 200 cows exist, with nearly half under the care of the Veterinary College.</p> <p>Ethical Values Exhibited by Iype:</p> <ol style="list-style-type: none"> 1. Commitment to conservation. 2. Dedication to community welfare. 3. Persistence despite obstacles. 4. Empowering local farmers. 5. Preservation of cultural heritage.
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FACTS FOR PRELIMS

GS-1

1. 'VIKRAMADITYA VEDIC CLOCK'

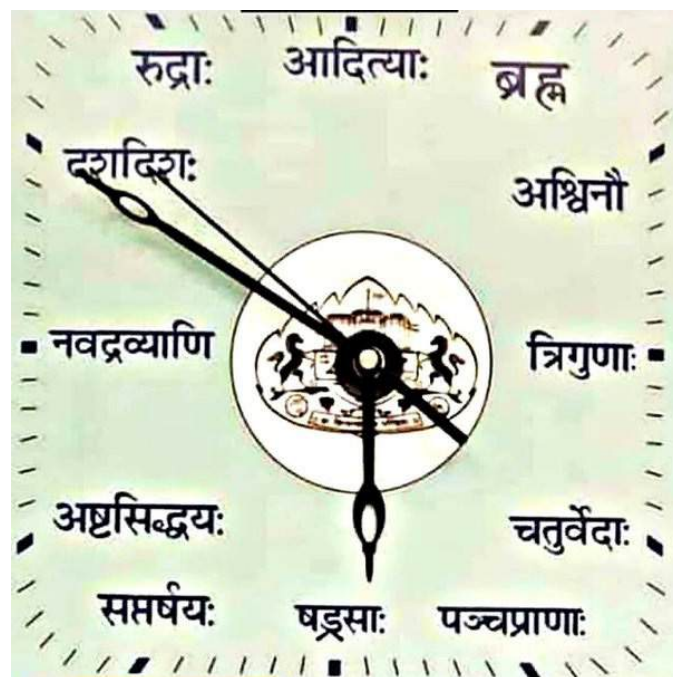
Context:

The world's first Vedic clock, the '**Vikramaditya Vedic Clock**,' based on Indian '**panchang**' calculations, was inaugurated at Jantar Mantar in Ujjain, Madhya Pradesh.

Ujjain is located at the precise point of interaction with the zero meridian and the Tropic of Cancer. According to Hindu astronomical belief, **Ujjain was once considered India's central meridian**, determining the country's time zones and time differences.

What is a Vedic clock?

It is a timekeeping device based on ancient Indian astronomical calculations, particularly those found in **Vedic texts and panchang** (Hindu calendar). It incorporates traditional methods of time **measurement and celestial observations** to determine accurate time, aligning with Hindu cosmology and astrology.



Jantar Mantar, an astronomical observatory (a UNESCO World Heritage site) constructed by Maharaja Jai Singh II, can be found in the following cities in India:

1. Delhi
2. Mathura
3. Varanasi
4. Jaipur
5. **Ujjain**

2. CRITICAL AND STRATEGIC MINERALS

Context:

The Union Cabinet, has approved the amendment of the **Second Schedule to the Mines and Minerals (Development and Regulation) Act, 1957.**

- This amendment specifies the **royalty rates for 12 critical and strategic minerals**, including **Beryllium, Cadmium, Cobalt, Gallium, Indium, Rhenium, Selenium, Tantalum, Tellurium, Titanium, Tungsten, and Vanadium.**
- With this approval, the **exercise of rationalizing royalty rates for all 24 critical and strategic minerals is completed.**

About Critical and Strategic Minerals:

- Critical and strategic minerals are those that are deemed essential for the **economic and national security** of a country due to their importance in various **industrial sectors, including defence, energy, electronics, and manufacturing.**
- These minerals are crucial for the **production of key technologies**, such as **renewable energy systems, electric vehicles, and advanced weaponry.**
- They are often characterized by their **scarcity, high economic value, and irreplaceability in specific applications.**

3. TEMPLE BILL

Context:

The **Karnataka Legislative Assembly** passed the **Karnataka Hindu Religious Institutions and Charitable Endowments (Amendment) Bill, 2024**, after it was previously defeated in the Legislative Council by the BJP-JD(S) alliance.

- The bill proposes the **creation of a Common Pool Fund under the Hindu Religious Institutions and Charitable Endowments Department** to support religious activities in the state.
- The amendment **requires temples with incomes above Rs one crore to contribute 10%, those with incomes between Rs 10 lakh to one crore to contribute five per cent**, and temples with incomes below Rs **10 lakh are exempt from contributions.**

Constitutional Provisions for passing of bills:

- According to **Article 197 of the constitution**, if a bill is **rejected by the Legislative Council** for the first time, the **Legislative Assembly has the option to pass the bill again, with or without the amendments suggested by the Legislative Council.**
- Once **the bill is passed for the second time by the Legislative Assembly**, it is **sent back to the Legislative Council.**
- The bill is considered to have **been passed by both houses if the Legislative Council either rejects the bill, takes no action on it for more than one month, or passes the bill with amendments to which the Legislative Assembly does not agree.**

Temple regulation in India:

- Article 25(2) of the constitution allows states to enact laws for regulating the secular activities of religious places and for social welfare**, reform, or the opening of Hindu religious institutions to all sections of Hindus.
- The management of religious endowments and institutions **falls under the concurrent list of the Constitution**, meaning that **both the central and state governments have the authority to legislate on this matter.**

4. SEAMOUNTS

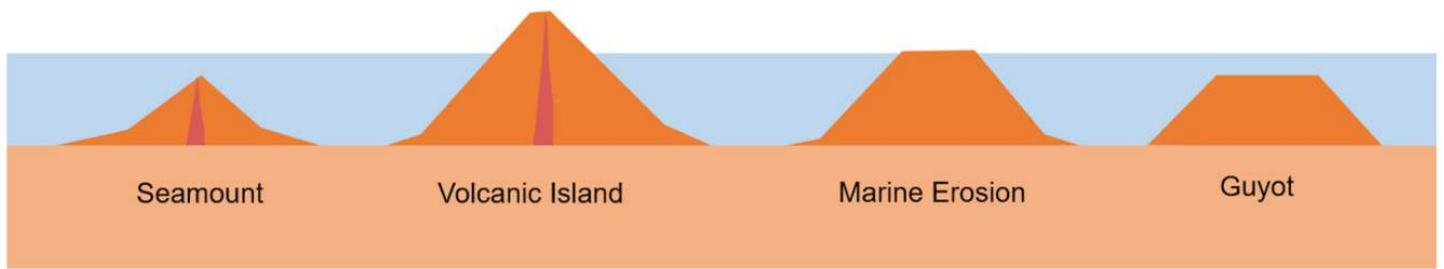
Context:

Researchers aboard the **Schmidt Ocean Institute's Falkor research vessel** have discovered **four massive seamounts off the coast of Peru and Chile.** The tallest of these underwater mountains rises over **1.5 miles (2.4 kilometres)** from the seafloor, making it three times taller than the world's tallest building.

Detected through gravitational anomalies, these extinct volcanoes create subtle changes in the ocean's surface height.

About Seamounts:

Category	Information
About Seamounts	Seamounts are underwater mountains formed through volcanic activity and are recognized as hotspots for marine life.
Formation	Near mid-ocean ridges, intraplate hotspots, or oceanic island chains.
Mapping	Echo sounders/multibeam sonar on ships for topographic mapping, or satellite altimetry for gravity-field mapping. Efforts like Seabed 2030 aim to map the world's seafloor to better understand these ecosystems.
Importance	Provide information about mantle composition and tectonic plate evolution , influence ocean circulation and absorption of heat/CO ₂ , and support diverse biological communities. Seamounts serve as biological hotspots , supporting diverse marine life
Example	The Emperor Seamounts , a chain of seamounts in the Pacific Ocean.
India's contribution	The SARAL satellite , developed in collaboration with France, helped expand the seamount catalogue through improved radar noise reduction.
Seamounts Vs Guyots	Seamounts differ from Guyots, which are also formed from undersea volcanoes but were once above the surface of the ocean and have since submerged to form flat-topped undersea mountains.



5. CAVUM CLOUDS

Context:

NASA's Terra satellite recently captured a **cluster of cavum clouds over the Gulf of Mexico off Florida's west coast.**

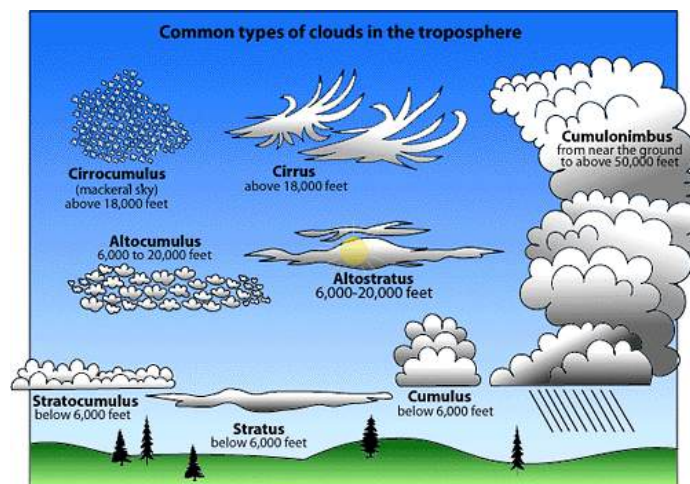
What are Cavum clouds (also known as hole-punch clouds or fallstreak holes)?

They are **formations in the atmosphere that appear as if a large circle or ellipse** has been neatly cut from the clouds, leaving feathery wisps in the middle of the hole. They are a **result of aeroplanes flying through banks of altocumulus clouds**, causing supercooled water droplets to freeze into ice crystals due to adiabatic expansion. The falling ice crystals leave a hole in the cloud layer, with wispy trails of precipitation visible in the centre known as **virga**.












Types of Clouds:

Type	Description
Cirrus Clouds	Wispy, curly, or stringy clouds found high in the atmosphere, usually made of ice crystals. Signal clear, fair weather.
Stratus Clouds	Horizontal, layered clouds that can blanket the entire sky. Occur close to the Earth's surface. Form at the boundary of warm fronts, where warm, moist air is forced up over cold air.
Cumulus Clouds	Large, lumpy clouds that stretch vertically into the atmosphere. Created by strong updrafts of warm, moist air.
Nimbostratus Clouds	Low and middle dark grey clouds with precipitation falling from them.
Stratocumulus Clouds	Low clouds with irregular masses, rolling or puffy in appearance.
Cumulonimbus Clouds	Large clouds with dark bases and tall billowing towers. Can have sharp well-defined edges or an anvil shape at the top. Precipitation can obscure the base of the clouds.



6. GI TAGS AWARDED TO DIFFERENT PRODUCTS

State	Product	Description
Odisha	Cuttack Rupa Tarakasi (Silver Filigree)	 <p>The incorporation of silver filigree into jewellery dates back to around 3500 BCE in Mesopotamia, and it is still practised today as Telkari work. It was introduced to Cuttack from Persia via Indonesia.</p>
West Bengal	Banglar muslin (Traditional Handloom Craft)	 <p>Banglar muslin is a traditional handloom craft made of cotton.</p>
A n d h r a Pradesh	Narasapur Crochet Lace Products	 <p>Crochet lace products were introduced to Narasapur by missionaries.</p>
M a d h y a Pradesh	Ratlam Riyawan Lahsun (Garlic)	 <p>Ratlam Riyawan Lahsun refers to garlic from Ratlam, known for its unique taste and aroma.</p>
Assam	Majuli Mask and Majuli Manuscript Painting	 <p>Majuli Mask and Majuli Manuscript Painting are traditional art forms from Majuli, Assam.</p>
Tripura	Risa Textile	 <p>Risa Textile is a traditional tribal attire from Tripura, known for its vibrant designs and cultural significance</p>

<p>Telangana</p>	<p>Hyderabad Lac Bangles</p>	 <p>Lac bangles made in Hyderabad are known for their intricate designs and craftsmanship.</p>
<p>Gujarat</p>	<p>Kutch Rogan Craft</p>	 <p>Rogan Craft from Kutch is an ancient art form involving the use of castor oil and pigments to create intricate designs on fabric.</p>
<p>Gujarat</p>	<p>Ambaji White Marble</p>	 <p>Ambaji White Marble is formed when limestone is re-crystallized under the earth's crust, known for its purity and durability.</p>

About GI Tags:

A Geographical Indication (GI) is a **designation used on products with a specific geographical origin**, indicating qualities or reputation linked to that origin. Internationally recognized **under the Paris Convention**, GI is part of **Intellectual Property Rights (IPRs)**, covered by the **WTO's TRIPS Agreement, Madrid Agreement, and Lisbon Agreement**.

In India, GI registration is governed by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**. Administered by the Registrar of Geographical Indications (RGI), it identifies **agricultural, natural, or manufactured goods**, providing legal protection **for 10 years**, renewable. The **Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry**, oversees GI registration, offering protection against unauthorized use, promoting exports, and ensuring quality and distinctiveness.

7. SANGEET NATAK AKADEMI FELLOWSHIPS AND AWARDS

Context:

President of India, presented the **Sangeet Natak Akademi Awards for the years 2022 and 2023**

The **Sangeet Natak Akademi (SNA)** is India's national academy for performing arts. It was established **in 1952 by the Indian Ministry of Education and inaugurated in 1953**.

The SNA's purpose is to **preserve and promote India's diverse culture through music, dance, and drama**. The SNA Awards **have been given since 1952 to recognize sustained individual work and contribution**. The awards are given in the following

categories:

- Music
- Dance
- Theatre
- Other traditional arts and puppetry
- Contribution/scholarship in performing arts

The **SNA Fellowship (Akademi Ratna)** is the highest honour given to artists in the field of performing arts

8. SHANKARACHARYA TEMPLE

Context:

During his recent visit to Kashmir, the PM paid homage at the Shankaracharya Hill, home to the [Shankaracharya Temple](#) situated in the [Zabarwan Range](#).

About the Temple:

Dedicated to [Lord Shiva](#), the temple sits at an [elevation of 1100 feet](#) and is revered as the [oldest shrine in the Kashmir valley](#). Named after the philosopher and saint Adi Shankaracharya, who visited the site and propounded the [Doctrine of Advaita](#), the temple holds historical significance. [Adi Shankaracharya also established four maths](#), including Dwarka, Joshimath, Puri, and Sringeri.



Desert star dunes have a distinctive internal structure and formation process:

1. **Internal Structure:** Revealed through ground-penetrating radar, it shows layers formed over time through accumulating sand. Some parts resemble other types of dunes.
2. **Formation Process:** Formed by opposing winds with changing directions, resulting in a unique star shape. Winds blowing from different directions lead to net sand accumulation, creating giant dunes.

What are Dunes and its different types?

Dunes are [mounds, ridges, or hills of sand](#) formed by the wind in deserts, coastal areas, or other sandy environments. They come in various shapes and sizes. The different types of dunes include:

1. **Barchan Dunes:** Crescent-shaped dunes with the tips pointing downwind, commonly found in areas with limited sand.
2. **Linear Dunes:** Long and straight dunes that form parallel to the prevailing wind direction.
3. **Star Dunes:** Pyramid-shaped dunes with arms radiating from a central peak, forming in areas with complex wind regimes.
4. **Transverse Dunes:** Long ridges of sand perpendicular to the wind direction, often found in extensive sand seas or deserts.
5. **Parabolic Dunes:** Similar to barchan dunes but with the tips pointing upwind, typically forming in areas with abundant sand and vegetation.
6. **Dome Dunes:** Rounded mounds of sand with no specific orientation to the wind direction, often found in coastal regions or sandy plains.

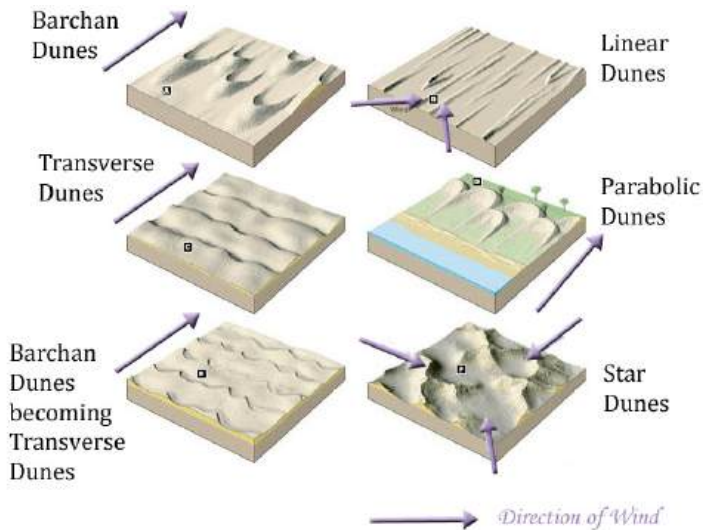
	Adi Shankaracharya	Sri Ramanujacharya
Birth and Lifetime	Born in 788 CE in Kaladi, Kerala, and passed away in 820 CE 	Born in 1017 CE in Sriperumbudur, Tamil Nadu, and passed away in 1137 CE 
Philosophy	Advaita Vedanta (Non-Dualism)	Vishishtadvaita Vedanta (Qualified Non-Dualism)
Interpretation of Vedas	Argued that the ultimate reality is Brahman and that the universe is an illusion (Maya)	Argued that Brahman is the ultimate reality, but also that the universe is real and a manifestation of Brahman
Approach to God	Emphasized the importance of renunciation and meditation to realize the ultimate reality	Emphasized devotion (bhakti) to achieve union with the divine
Scriptures	Emphasized the importance of the Upanishads and the Brahma Sutras	Emphasized the importance of the Bhagavad Gita and the Divya Prabandham
Influence	Revived Hinduism and helped unify various philosophical schools of thought. Founded four mathas (monasteries) in India.	Popularized devotion to Vishnu and helped revive the Bhakti movement in India.
Key Works	Vivekachudamani, Upadesa Sahasri, and commentaries on the Upanishads, Bhagavad Gita, and Brahma Sutras	Sri Bhashya, Vedanta Sara, and commentary on the Bhagavad Gita
Legacy	His teachings have had a profound impact on Indian intellectual and spiritual life.	His teachings have had a significant impact on the development of the Bhakti movement and culture
Statue	A 12-foot statue of Adi Shankaracharya at Kedarnath (Uttarakhand)	Statue of Equality on the outskirts of Hyderabad, Telangana Visit Insights IAS Daily Current Affairs

9. DESERT STAR DUNES

Context:

Scientists have revealed the [secrets of Earth's magnificent desert star dunes](#), showcasing the [internal structure and formation process](#) of these geological wonders.

The study focused on the [Lala Lallia star dune in eastern Morocco](#), uncovering its intricate layers and estimating it took about [900 years to form](#), accumulating sand at a rate of approximately 6,400 metric tons annually. These star dunes, accounting for [under 10% of Earth's desert dunes](#), are the tallest and most impressive, resembling pyramids with arms extending from a central peak.



10. ANTHROPOCENE EPOCH

Context:

The International Commission on Stratigraphy rejected the proposal of the Anthropocene epoch after a committee of 18 scientists recently voted against it.

What is an Epoch?

An epoch is a subdivision of geological time that represents a distinct interval of time characterized by significant events or developments in Earth's history.

Quaternary Period with the Anthropocene Epoch

Eonothem/ Eon	Era/ Eon/ Era	System/ Period	Series/ Epoch	Stage/ Age	millions of years ago
Phanerozoic	Cenozoic	Quaternary	Anthropocene ¹		1950 CE
			Holocene		0.0117
			Pleistocene	Upper	0.126
				Middle	0.781
				Calabrian	1.806
		Gelasian	2.588		

¹In August 2016 the Anthropocene Working Group (AWG), a special body created within the International Commission on Stratigraphy (ICS), recommended that the Anthropocene Epoch be made a formal interval within the International Chronostratigraphic Chart. The AWG recommended that the year 1950 be used as the starting point of the Anthropocene Epoch.

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What is the Anthropocene epoch?

The Anthropocene epoch is a proposed unit of geologic time that marks a period during which human activities have had a significant impact on Earth's climate and ecosystems. It suggests a new epoch following the Holocene, with the concept coined in 2000 by Dutch meteorologist Paul Crutzen and American botanist Eugene Stoermer. The starting point of the Anthropocene is debated, with some proposing the period after World War II due to the "Great Acceleration" of human activities.

Why was the proposal Rejected?

The proposal to recognize the Anthropocene epoch was rejected due to several reasons:

1. Contention over the starting date: The proposal suggested 1952 as the beginning of the Anthropocene, citing global **plutonium fallout from nuclear weapons tests**. However, opponents argue that human impact began earlier, including activities such as farming, and cannot be confined to a single date.
2. **Epoch definition standards:** The International Union of Geological Sciences (IUGS) committee found that adding an Anthropocene epoch and ending the Holocene didn't align with the usual standards for defining epochs. There were concerns about the scientific rigour and criteria required to establish a new geological epoch.

11. FIFTH MASS CORAL BLEACHING EVENT

Context:

The Great Barrier Reef is experiencing its **fifth mass coral bleaching event in eight years**, driven by global heating and an El Niño climate pattern.

- Aerial surveys have revealed **widespread bleaching across two-thirds of the reef**, with particular concern for the southern section where centuries-old corals are severely affected.
- The reef's size, **covering an area larger than Italy**, has seen significant bleaching episodes **in 1998, 2002, 2016, 2017, 2020, 2022, and now in 2024**

Coral bleaching is a response to stressful conditions that cause corals to expel the algae that live in their tissues. The algae are the coral's primary food source and give them their colour.

Coral bleaching can be caused by changes in conditions such as temperature, light, or nutrients.

Coral bleaching is associated with the **devastation of coral reefs, which are home to approximately 25 per cent of all marine species**



12. ORAN LAND

Context: Villagers in Rajasthan oppose the state government's proposal to classify sacred groves known as orans

as **deemed forests**, fearing loss **of access and livelihood**. The notification, **released on February 1, 2024**, aims to give **orans the status of deemed forests** as per Supreme Court directives.

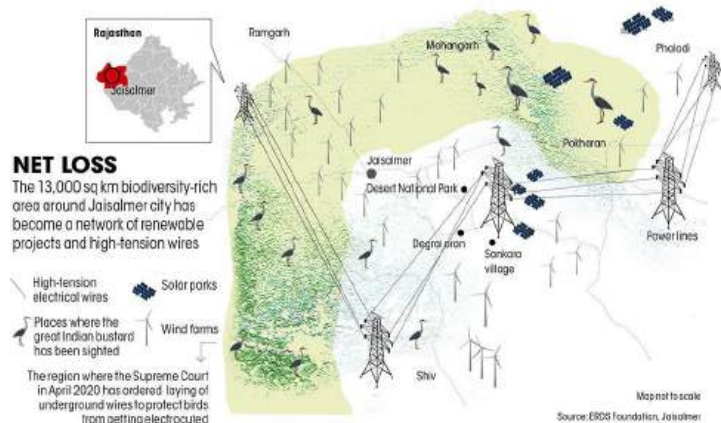
Communities rely on orans for **cultural, religious, and economic reasons**, using them for cattle herding, pastures, and gathering forest produce. They fear that this classification will **deprive them of access to the forests and threaten** their way of life. Legal experts clarify that while deemed forests are protected from certain activities like mining, they do not restrict community access to grazing or worship.

What are Orans?

Orans are **traditional sacred groves found in Rajasthan, India**. These community forests are **preserved and managed by rural communities**, often associated with local deities. They are rich in biodiversity, typically containing water bodies, and have been conserved for centuries. Orans serve as grazing areas for livestock and are venues for communal gatherings and festivals. They are also vital habitats for **endangered species like the Great Indian Bustard**.

What are Sacred groves?

Sacred groves are **relic forest patches traditionally protected by communities** in reverence of a deity. They are important repositories of forest biodiversity, providing refuge to many plant and animal species of conservation significance. India has **over 13,000** documented sacred groves. These groves are known by different names in different regions, such as **Kavu/Sarpa Kavu** in Kerala, **Devarakadu/Devkad** in Karnataka, and **Deorai/Devrai** in Maharashtra.



13. GORSAM KORA FESTIVAL

Context:

The **Gorsam Kora Festival**, held **annually in Arunachal Pradesh's Zemithang valley**, concluded, celebrating the **shared Himalayan Buddhist cultural heritage and the enduring friendship between India and Bhutan**.

- Located along the Nyanmjang Chu River, **Zemithang is historically significant as the refuge where the**

14th Dalai Lama sought sanctuary in 1959.

- The festival, **centred around the 93-foot tall stupa – 'Gorsam Chorten' built in the 13th century**, attracts thousands of devotees, including **Bhutanese nationals, for prayers and traditional rituals**.

14. 2024 PRITZKER ARCHITECTURE PRIZE

Context:

Riken Yamamoto, a Japanese architect, was awarded the 2024 **Pritzker Architecture Prize**, often dubbed the **"Architecture Nobel"**.

Established in 1979 by the Pritzker family of Chicago, it recognizes living architects for their significant contributions to humanity and the built environment.

The laureate **receives \$100,000 and a bronze medallion**. **Riken Yamamoto**, the ninth laureate from Japan, is known for projects like the **Hiroshima Nishi Fire Station (2000) and the Koyasu Elementary School (2018)**, which emphasize transparency and interaction in architectural design.

The Pritzker Architecture Prize

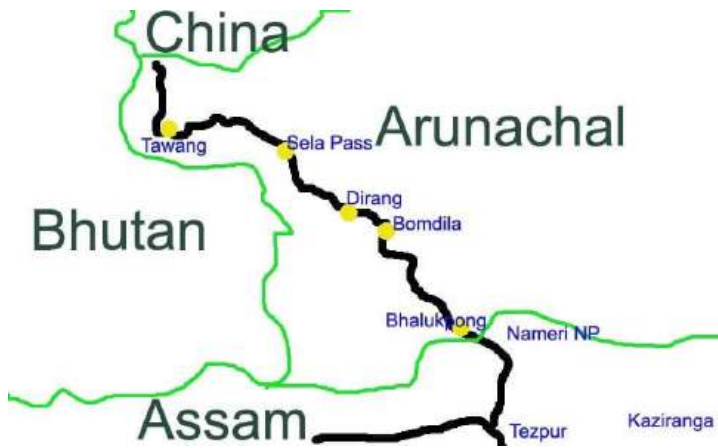


15. SELA TUNNEL (ARUNACHAL PRADESH)

Context:

PM Modi inaugurates the **Sela Tunnel in Arunachal Pradesh**, built at an altitude of 13,700 feet by the **Border Roads Organisation**.

The all-weather Sela Tunnel is built on the **road linking Tezpur (Assam) to Tawang in the West Kameng district of Arunachal Pradesh**. Constructed using **the New Austrian Tunnelling Method (NATM)**, it stabilizes the tunnel perimeter with sprayed concrete and other support while ensuring stability through regular monitoring. This bi-lane tunnel, stretching approximately **1.5 kilometres**, stands as the **world's longest (at an altitude above 13,000 feet)**, offering crucial all-weather connectivity.



16. SPONGE IRON INDUSTRY

Context:

India's sponge iron industry faces an **ore shortage due to rampant exports of iron ore**, its crucial raw material.

About the Sponge Iron:

- Definition:** Sponge iron, also known as direct-reduced iron (DRI), is produced from the **direct reduction of iron ore** (in the form of lumps, pellets, or fines) into metallic iron through a reduction reaction (chemical process) at high temperatures.
- Production Process:** Sponge iron is produced by **removing oxygen from iron ore** through a reduction process in a rotary kiln or fluidized bed reactor. This process occurs at **high temperatures (typically above 1000°C)** and involves the use of reducing agents such as coal or natural gas.
- End Use:** Sponge iron serves as a crucial raw material in the steelmaking industry.
- Advantages:** Sponge iron production offers several advantages, including lower production costs compared to traditional steelmaking methods, higher purity of the final product, and reduced environmental impact due to lower emissions of greenhouse gases.
- Leading Producer:** India has been the world's largest sponge iron-producing nation since 2003, with 30% of India's steel production coming from this route.
- Impact of Export:** The shortage of Sponge Iron in India is attributed to the high rate of iron ore exports, leaving minimal quantities for domestic use by secondary steel sector players.
- Export Dynamics:** Iron ore exports, including pellets, **almost tripled in 2023**, reaching 44 MT. This surge followed the withdrawal of **export duty on ores with less than 58% Fe in November 2022**.
- Policy Objectives:** The National Steel Policy 2017 aims to increase sponge iron production to 80 MTPA by 2030-31 to achieve a targeted steel production capacity of 300 MT
- Calls for Action:** Several state-based sponge iron

manufacturing associations have appealed to the **Union Steel Ministry** to ban all forms of iron ore exports due to the severe shortage of raw material.

17. ASTRONOMICAL GRAND CYCLES

Context:

The Earth experiences climate fluctuations **in a 2.4-million-year cycle**, discovered through geological sedimentary evidence in the deep **ocean current**. This cycle, known as "astronomical grand cycles," is linked to the **orbits of Earth and Mars around the Sun**.

Explanation:

The concept of the **Astronomical Grand Cycle (AGC)** suggests that the **gravitational interaction between Earth and Mars cyclically influences deep ocean currents**, leading to recurring patterns every 2.4 million years. This cycle is attributed to the **interference of gravity fields between the two planets**, causing a resonance that affects Earth's orbit around the Sun.

The mechanism proposed for AGC highlights the **gravitational interplay between Earth and Mars as the primary driver**. Unlike the **Milankovitch cycles**, which are associated with Earth's interactions with **Jupiter and Saturn** and coincide with the glacial and interglacial periods on Earth, the AGC specifically pertains to the interaction between Earth and Mars and its impact **on deep ocean currents**.

18. WORLD MONUMENTS FUND WATCH 2025

Context:

Conservationists plan to propose the **Kazhuveli watershed region in Villupuram district**, Tamil Nadu, for **nomination to the World Monuments Fund Watch 2025 programme**.

- This region, **spanning 740 sq. km. from Gingee to Marakkanam and up to the Auroville plateau**, features **an ancient Eri (tank) network crucial for sustaining agricultural practices over millennia**.
- The proposal aims to **address the decline of this historic water management system and its cultural heritage**.

The **World Monuments Watch**, launched in 1996, is a **biennial program** that highlights heritage sites globally nominated by individuals and community-based organizations. It is a program by the **World Monuments Fund (WMF)** that **raises awareness about cultural heritage** around the world that is threatened **by conflict, vandalism, disaster, or neglect**.

19. PANDAVULA GUTTA DESIGNATED AS A GEO-HERITAGE SITE

Context:

Pandavula Gutta, an **ancient geological marvel in Telangana** (Jayashankar Bhupalpally District), has been designated as the **exclusive Geo-heritage site** in the state.

About Pandavula Gutta:

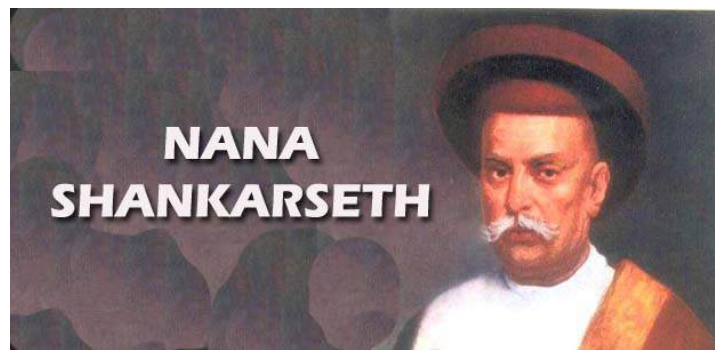
It is **older than the Himalayas** and showcases ancient rock paintings in various colours like green, red, yellow, and white. The paintings depict symbols such as swastikas, circles, squares, and animals like bison, antelope, tiger, and leopard.

About Geo-heritage Sites:

Geo-heritage refers to the **geological features which are inherently or culturally significant offering insight into earth’s evolution** or history to earth science or that can be utilized for education. Sites are designated as Geo-heritage Sites (GHS) by the **Geological Survey of India (GSI)**. India, as a member of the **UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage**, safeguards such sites through appropriate legislation, as done by other countries worldwide.

About the Geological Survey of India:

Headquartered in **Kolkata, it was set up in 1851** primarily to find coal deposits for the Railways. Presently, GSI is an attached office to the Ministry of Mines. The main functions of the GSI relate to the **creation and updation of national geoscientific information** and **mineral resource assessment**.



21. UNESCO’S TENTATIVE LIST

Context:

Madhya Pradesh celebrates a **significant achievement as six of its heritage sites** are included in **UNESCO’s tentative list**.

- The sites included are **Gwalior Fort, the Historical Group of Dhamnar, Bhojeshwar Mahadev Temple, Rock Art Sites of Chambal Valley, Khooni Bhandara in Burhanpur, and God Memorial of Ramnagar in Mandla**.

Site	Description
Gwalior Fort	Completed in the 8th century AD by Raja Surya Sena , includes Man Mandir Palace, Gujari Mahal, Sas Bahu temples, etc.
Khooni Bhandara, Burhanpur	The underground water management system was built by Abdur Rahim Khan-i-Khanan during Jahangir’s reign, based on the Persian qanat approach.
Rock Art Sites of Chambal Valley	Rock art in hilly areas of Vindhyan, Satpura, and Kaimur ranges.
Bhojeshwar Mahadev Temple, Bhojpur	Lord Shiva temple built during the 11th century under Raja Bhoj , was built in Bhumija style.
Gond Monuments of Ramnagar, Mandla	Architectural complexes built by Gond rulers consisting of Moti Mahal, Raibhagat ki Kothi, Begum Mahal, etc.
The Historical Ensemble of Dhamnar	A rock-cut site consisting of 51 monolithic Buddhist caves (5th-7th century CE) and a Hindu temple complex (Dharmarajeshwara temple) .

UNESCO’s Tentative List is a list of properties that a **state party intends to nominate for inscription on the World Heritage List**. These properties are considered to be **cultural and/or natural heritage of outstanding universal value**. The World Heritage Centre (WHC) publishes the **Tentative Lists on its website and in working documents**. States Parties should submit their Tentative Lists to the WHC at least one year before submitting any nomination.

20. NANA JAGANNATH SHANKARSETH

Context:

The Maharashtra cabinet has decided to propose **renaming Mumbai Central Station** after **Nana Jagannath Shankarseth**, a renowned social reformer and philanthropist who played a crucial role in shaping Mumbai.

Nana Jagannath Shankarseth is often **hailed as the architect of Mumbai (formerly Bombay)**. His notable contributions include being the **first Indian nominated to the Legislative Council of Bombay and founding the Bombay Association in 1852**. He championed **education for girls and women** and established the **Native School of Bombay (1849)**, which later became the **esteemed Elphinstone College**. Shankarseth was instrumental in the committee that **propelled India’s first train project**, connecting **Boribunder and Thane** in 1853. Shankarseth was instrumental in **founding the Great Indian Peninsula Railway**, alongside notable figures like Sir Jamsetjee Jejeebhoy and David Sassoon.

Shankarseth’s legacy lives on through the institutions he established and the development projects he spearheaded, leaving an indelible mark on Mumbai’s history.

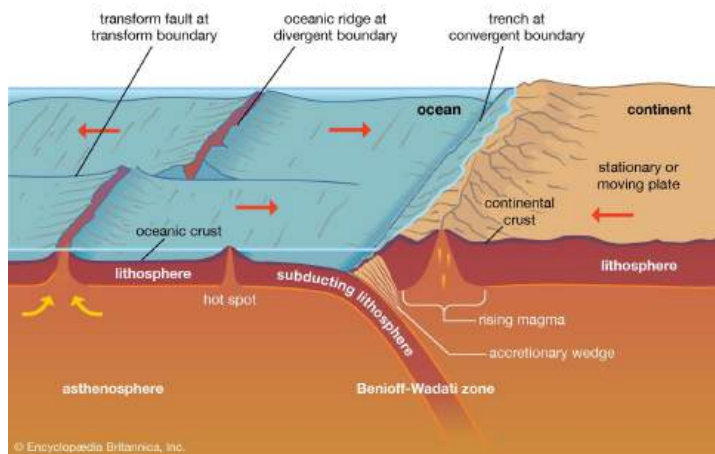
22. GIBRALTAR STRAIT

Context:

A modelling study suggests that a **dormant subduction zone beneath the Gibraltar Strait** could become **active and migrate into the Atlantic Ocean**, potentially forming an **Atlantic “Ring of Fire” in about 20 million years.**

- The **subduction zone, known as the Gibraltar arc**, has been slowly moving westward for millions of years but has recently stalled.
- Researchers predict that it will **resume its advance and break into the Atlantic in a process called “subduction invasion.”**

A **subduction zone** is a place where **two tectonic plates collide and one dives beneath the other.** Subduction zones can occur when a **plate with a thinner oceanic crust descends beneath a plate with a thicker continental crust.**



23. GULAAL GOTA

Context:

The **Jaipur tradition of “Gulaal Gota”** involves small **lac balls filled with dry Gulaal (coloured powder)** thrown during **Holi celebrations.**

About Gulaal Gota:

- These balls are made by **Muslim artisans known as Manihaars in Jaipur**, with lac sourced from **Chhattisgarh and Jharkhand.**
- The tradition dates **back around 400 years and is unique to Jaipur.**
- Originally, the **Manihaars settled in Bagru, near Jaipur, and learned lac-making from Hindu lac makers.**
- The city’s founder, **Sawai Jai Singh II, dedicated a lane to the Manihaar community**, where they continue to sell lac bangles, jewellery, and Gulaal Gotas.

The artisans face challenges from cheaper, **chemical-based bangles flooding the market.**

Holi is a **popular Hindu festival.** It is also known as the **“Festival of Colors”** or the **“Festival of Love.”** Holi usually takes place in **March, marking the arrival of spring and the end**

of winter.

The festival is **celebrated over two days.** The first day, known as **Holika Dahan or Chhoti Holi**, involves **lighting bonfires to signify the victory of good over evil.**

The second day is called **Rangwali Holi**, during which **people gather in public spaces and streets to play with colours.**

24. ARCHAEOLOGICAL SURVEY OF INDIA

Context:

The **Archaeological Survey of India (ASI)** has decided to **delist 18 centrally protected monuments** due to their **assessed lack of national importance.**

- This is **the first large-scale delisting exercise in decades**, reducing ASI’s purview from **3,693 to 3,675 monuments.**
- These monuments, including landmarks like the **medieval highway milestone Kos Minar No.13 in Haryana, Barakhamba Cemetery in Delhi, and Te-lia Nala Buddhist ruins in Varanasi**, are considered **‘untraceable’ as their precise locations or current conditions are unknown.**
- The decision follows the **criteria outlined in the Ancient Monuments and Archaeological Sites and Remains Act, 1958**

Delisting means **these monuments will no longer receive conservation, protection, or maintenance from ASI**, allowing **construction and urbanization in the area.**

25. AFANASY NIKITIN SEAMOUNT (AN SEAMOUNT)

Context:

India has applied to the International Seabed Authority (ISBA) for rights to explore the **Afanasy Nikitin Seamount (AN Seamount), a cobalt-rich region** in the Indian Ocean.

This move, motivated partly by **Chinese activity in the area**, aims to secure strategic resources. The AN Seamount, **located about 3,000 km from India’s coast**, is **rich in cobalt, nickel, manganese, and copper deposits.**

Issues:

The application faces challenges due to overlapping claims by Sri Lanka and international regulations governing seabed exploration. Also, the cost of exploration and extraction is very high.

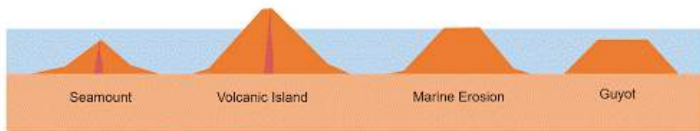
India is also seeking permission to explore the **Carlsberg Ridge for polymetallic sulphides.**



The AN Seamount is a structural feature (400 km long and 150 km wide) in the Central Indian Basin, located about 3,000 km away from India’s coast. From an oceanic depth of about 4,800 m, it rises to about 1,200 metres



Note: **Seamounts** are **underwater mountains** formed through volcanic activity and are recognized as hotspots for marine life.



ISA: It is a **Jamaica-based intergovernmental body** established under the **UNCLOS**. It holds authority over the ocean floors outside of its 167 member states’ Exclusive Economic Zones (EEZ)

26. KALYANA CHALUKYA DYNASTY

Context: A 900-year-old **Kannada inscription from the Kalyana Chalukya dynasty** was discovered in a neglected state at

Gangapuram, Mahabubnagar district.

Archaeologists found it near **Chowdamma temple** during a heritage preservation campaign. The inscription, dated June 8, 1134 CE, **records toll tax remission for a temple lamp.**

About the dynasty:

Topic	Details
About Chalukya Dynasty	Ruled the central Indian plateau of Deccan between 6th and 12th centuries . Consisted of three closely related but distinct dynasties: 1. Chalukyas of Badami (6th–8th centuries); 2. Chalukyas of Kalyani (Western Chalukyas); 3. Chalukyas of Vengi (Eastern Chalukyas)
About Chalukyas of Kalyani	The Western Chalukya Empire, also known as the Kalyani Chalukyas, ruled the western Deccan and South India from the 10th to 12th centuries Primarily the Kannadiga dynasty , named after the capital city of Kalyani (modern-day Bidar, Karnataka). The empire was founded by Tailapa II during Rashtrakuta rule , governing Tardavadi in the Bijapur district. They defeated Rashtrakuta in 973. Reached peak under Vikramaditya VI (1076-1126 CE) , considered the ‘Chalukya Vikrama era’ Expanded into Deccan and southern India , defeating Cholas and gaining vast territories from the Kaveri River to the Narmada River. Administration: Hereditary, power passed to a male heir or brother. Feudatories managed territories The Western Chalukya minted punch-marked gold coins called pagodas with Kannada legends. Art and Architecture: Contributed to Kannada and Telugu literature. Their architecture is a link between the Badami Chalukya architecture of the 8th century and the Hoysala architecture of the 13th century . Known for ‘ Gadag style ’ temples in Tungabhadra-Krishna doab region. Temples depict religious and secular themes. Notable temples include the Mallikarjuna temple of Bellary, Sidedeshvara temple in Haveri, and Kallesvara temple in Davangere district.



GS-2

1. 'UNLAWFUL ASSOCIATION'

Context:

The government has extended the ban on 'Jamaat-e-Islami Jammu Kashmir' as an 'Unlawful Association' for another five years under the Unlawful Activities (Prevention) Act (UAPA) 1967.

This extension comes **after the outfit was initially declared unlawful on February 28, 2019**. Jamaat-e-Islami Jammu Kashmir has been involved in **fostering terrorism and anti-India propaganda**, leading to secessionist sentiments in Jammu and Kashmir.

What is an 'Unlawful Association'?

An 'Unlawful Association' refers to an organization or group **that has been deemed illegal or prohibited by the government** due to its involvement in activities that pose a threat to national security, sovereignty, or integrity.

What is UAPA?

The **Unlawful Activities (Prevention) Act (UAPA)** is an **anti-terrorism law** enacted in India (in 1967) with the aim of **preventing unlawful activities and combating terrorism**. The Act assigns **absolute power to the central government**, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.

Key features of UAPA:

- Under UAPA, **both Indian and foreign nationals** can be charged.
- It will be applicable to the offenders in the same manner, **even if the crime is committed in a foreign land**, outside India.

- It has the **death penalty and life imprisonment** as the highest punishments.
- Under the UAPA, the investigating agency can file a charge sheet in **maximum of 180 days** after the arrests and the duration can be extended further after intimating the court.
- As per **amendments of 2019**: The Act empowers the Director General of **National Investigation Agency (NIA)** to grant approval of seizure or attachment of property when the case is investigated by the said agency.
- The Act empowers the **officers of the NIA, of the rank of Inspector or above**, to investigate cases of terrorism in addition to those conducted by the DSP or ACP or above rank officer in the state.
- It also included the provision of **designating an individual as a terrorist**.

2. CENTRAL EMERGENCY RESPONSE FUND (CERF)

Context:

The UN has allocated US\$100 million from the Central Emergency Response Fund (CERF) to support underfunded humanitarian crises in seven countries across Africa, the Americas, and the Middle East.

About UN Central Emergency Response Fund (CERF)

It was established in 2005 by the UN General Assembly to **provide rapid and life-saving assistance** to vulnerable populations during humanitarian crises. Managed by the **Emergency Relief Coordinator on behalf of the UN Secretary-General**, CERF releases resources for underfunded emergencies **twice a year**. It addresses critical funding gaps exacerbated by increased **global conflicts, climate-induced disasters, and poly-crisis phenomena**. The fund is replenished annually through contributions from governments, the private sector, foundations, and individuals. CERF's allocations are divided into:

1. **Rapid Responses:** providing immediate aid during sudden crises
2. **Underfunded Emergencies support** countries facing prolonged humanitarian challenges.

3. FIR VS GENERAL DIARY

Context:

In **Lalita Kumari v. Government of Uttar Pradesh & Others (2014)**, the Supreme Court ruled that information disclosing a cognizable offence must be recorded as a First Information Report (FIR) in a book maintained by the officer in charge of the police station, not in the General Diary.

The Court analyzed the **interplay between Section 154 of the Criminal Procedure Code (CrPC) and Section 44 of the Police Act, 1861**, concluding that FIR registration takes precedence.

Aspect	General Diary (GD)	First Information Report (FIR)
Purpose	Records all important transactions and events within the police station, including complaints, arrests, confiscated property, and visits of senior officers.	Summarizes information about the commission of a cognizable offence, initiating the investigation process.
Content	Contains details of complaints, charges, arrests, confiscated property, witnesses examined, and other significant events within the jurisdiction.	Includes details of the offence, complainant, accused, witnesses, and other relevant information.
Handling	An internal police record is maintained for administrative and operational purposes. Not sent to judicial magistrates, but may be inspected by them.	A legal document filed by the police based on information provided by the complainant or other sources. Copies are sent to superior officers and judicial magistrates, and it is the basis for initiating the investigation.
Signature	Does not require the signature of the complainant.	Requires the signature of the complainant, acknowledging the submission of the complaint to the police.
Legal Status	Serves as an internal administrative record for the police station.	Forms the basis for criminal proceedings and investigations. It is admissible as evidence in court.

Cognizable Vs Non-Cognizable Offence:

Aspect	Cognizable Offence	Non-Cognizable Offence
Definition	Serious crimes are where police can arrest without a warrant and investigate without court permission.	Lesser offences where police require a warrant for arrest and court permission for investigation.

Police Action	Police can take immediate action upon receiving a complaint or credible information.	Police require the court's permission to investigate and arrest after receiving a complaint.
Examples	Murder, robbery, kidnapping, etc.	Public nuisance, defamation, simple assault, etc.

4. PRADHAN MANTRI ANUSUCHIT JAATI ABHYUDAY YOJNA (PM-AJAY)

Context:

The Ministry of Social Justice and Empowerment inaugurated and laid the **foundation stone for 34 residential hostels** across various states and central institutes (under PM-AJAY), in order to cater to the accommodation needs of Scheduled Castes (SC) and Other Backward Classes (OBC) students.

What is PM-AJAY?

PM-AJAY (Pradhan Mantri Anusuchit Jaati Abhyuday Yojna) is a Centrally Sponsored Scheme aimed at reducing poverty among Scheduled Castes (SC) communities and increasing literacy rates while encouraging SC enrollment in schools. The scheme comprises several components:

- 1. Development of SC-dominated villages into "Adarsh Gram"** (model villages) to uplift their socio-economic status.
- 2. Provision of grants-in-aid for District/State-level Projects** focused on the socio-economic betterment of SC communities.
- 3. Construction of hostels in Higher Educational Institutes (HEIs)** that are top-ranked according to the National Institutional Ranking Framework (NIRF), providing accommodation and support for SC students.
- 4. Financial support for Monitoring and Evaluation** to ensure effective implementation and impact assessment of the scheme.

5. PM JANJATI ADIVASI NYAY MAHA ABHIYAAN (PM-JANMAN)

Context:

The housing component of the **PM Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN)** is facing hurdles due to discrepancies in **data on Particularly Vulnerable Tribal Groups (PVTGs).**

- The government set a target of **sanctioning 2.5 lakh houses by February 15 but only 1.59 lakh houses could be sanctioned due to challenges in collecting accurate beneficiary data.**

PM Janjati Adivasi Nyay Maha Abhiyaan (PM-JANMAN) is a government initiative launched in India with the aim of **addressing the needs and welfare of tribal communities, particularly those living below the poverty line (BPL)**

The initiative was announced in the **Union Budget speech of 2023**.

PM-JANMAN encompasses various schemes and programs aimed at **improving the lives of tribal populations, including housing, healthcare, education, and economic development**.

6. UNIFORM HOSPITAL TREATMENT CHARGES

Context:

The **Supreme Court** has directed the **central government** to **swiftly establish uniform hospital treatment charges**, aiming to **streamline the cashless health insurance system**.

- The court’s decision **follows a PIL urging for standardized fees nationwide**.
- The general insurance industry, which heavily relies on **health premiums**, **awaits the outcome, hoping for standardization to facilitate the ‘Cashless Everywhere’ scheme**.
- The **PIL cited disparities in treatment costs, ranging from private hospitals to government facilities**.
- Despite the Central Government’s efforts to establish rates, **responses from state governments and union territories have been lacking**.

With over 40,000 registered hospitals in India, the **decision aims to benefit over 30 crore health insurance policyholders by offering cashless services**.

7. SCHEME FOR INTERNALLY DISPLACED PERSONS (IDP)

Context:

The **Election Commission of India (ECI)** has introduced a **scheme allowing internally displaced persons (IDPs)** of Manipur to **vote at relief camps**.

- Following **ethnic violence in May 2023**, over **60,000 people were displaced and housed in relief camps, with an additional 9,000 in Mizoram**.

According to the **Guiding Principles on Internal Displacement**, internally displaced persons (also known as “IDPs”) are **“persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized border.”**

8. ADITI SCHEME

Context:

Raksha Mantri launched the **Acing Development of Innovative Technologies with iDEX (ADITI) scheme**, aiming to **promote innovations in critical and strategic defence tech-**

nologies.

- Under this scheme, start-ups can receive a **grant-in-aid of up to Rs 25 crore for their research and development efforts in defence technology**.

More about the Scheme:

- The scheme is part of **the iDEX framework** and aims to **develop about 30 deep-tech critical and strategic technologies while bridging the gap between defence requirements and innovation capabilities**.

Additionally, the event unveiled the **11th edition of the Defence India Start-up Challenge (DISC)** with **22 problem statements**, inviting innovators to propose solutions to **enhance defence capabilities**.

The Innovations for Defence Excellence (iDEX) framework is a program that **aims to promote innovation and technology development** in India’s **defence and aerospace sectors**.

9. THE WORLD BANK RELEASES WOMEN, BUSINESS AND THE LAW 2024

Context:

The “Women, Business and the Law 2024” report by the World Bank Group examines **laws and regulations affecting women’s economic opportunities** across 190 economies.

The report analyzes challenges hindering women’s workforce entry and economic contribution, updating the Women, Business and the Law index with new indicators like Safety and Childcare. Findings reveal a **significant global gap in women’s legal rights**, with potential economic growth if discriminatory laws are eliminated. India’s rank in the report improved marginally to **113 out of 190**.

Key aspect of the Report:

Aspects	Findings
10 Indicators of Assessment include	Safety: Women globally have a third of the legal protection needed from domestic violence, sexual harassment, child marriage, and femicide.
	Workplace and Pay: Women earn just 77 cents for every dollar paid to men. Less than 20% of economies have adopted enforcement mechanisms for the pay gap. Indian women have just 60% of the legal rights compared to men
	Parenthood: Women spend nearly 2.4 hours more per day on unpaid care work than men, primarily childcare.
	Childcare: Nearly all economies performed poorly in childcare support.
	Mobility, Entrepreneurship, Assets and Pension.

<p>Recommendations</p>	<p><u>Expand maternity and paternity</u> leave provisions. Enact legal mandate for equal pay and lift restrictions on women’s work in industrial jobs.</p> <p><u>Implement legally binding quotas for women</u> on corporate boards. (Already implemented in India). Ensure <u>equal retirement benefits for women</u>, considering childcare-related work absences.</p>
<p>India’s initiatives for gender equality in the workplace</p>	<p><u>The Code on Wages, 2019</u>: Prohibits gender discrimination in wages and recruitment. <u>Maternity Benefit Amendment Act, 2017</u>: Provides maternity benefits and creche facility. <u>Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013</u> (POSH Act).</p>

10. HOLISTIC PROGRESS CARD (HPC)

Context:

The National Council for Educational and Research Training (NCERT) is introducing a new ‘holistic progress card’ (HPC) to replace traditional report cards.

- The HPC, developed by the Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH), assesses academic performance along with interpersonal relationships, self-reflection, creativity, and emotional application in classrooms.

Features:

- It is designed for the foundational stage (Classes 1-2), preparatory stage (Classes 3-5), and middle stage (Classes 6-8), aligning with the National Education Policy (NEP) 2020.
- Unlike traditional cards, the HPC relies on a 360-degree evaluation, assessing students’ abilities through class activities and considering their active participation.
- It involves self and peer evaluation, incorporating parents’ inputs to bridge home-school connections.

The HPC aims to promote self-awareness, critical thinking, and holistic growth, aligning with NEP’s emphasis on competency-based evaluation and formative assessment.

11. ABORTION AS A CONSTITUTIONAL RIGHT

Context:

France has become the only country to explicitly guarantee abortion as a constitutional right.

- The bill enshrines a woman’s right to voluntarily terminate a pregnancy in France’s constitution.
- The historic move follows the Dobbs ruling by the

U.S. Supreme Court in 2022 and aligns with France’s commitment to women’s rights.

- The amendment pays tribute to Simone Veil, who championed the bill decriminalizing abortion in France in 1975.
- The amendment process is rare in France, with the Constitution being amended only 17 times since its enactment in 1958.

Abortion is a medical procedure that terminates a pregnancy, resulting in the removal of the foetus or embryo from the uterus, either surgically or medically.

12. VARIOUS GOVERNMENT REGULATIONS IN NEWS

Topic	Details
<p>Union Ministry of Environment, Forest and Climate Change notified Living Animal Species (Reporting and Registration) Rules, 2024</p>	<p><u>Notified living animal species are those listed under the Living Animal Species</u> (Reporting and Registration) Rules, 2024, which require mandatory electronic registration for possession, transfer, birth, and death reporting of certain scheduled animal species. These rules aim to regulate and monitor the ownership and movement of endangered or protected animals, as listed in the <u>Appendices of CITES or Schedule IV of the Wild Life (Protection) Act, 1972</u>Top of Form</p> <p>The rules <u>require mandatory electronic registration for possession of animal species under captivity, within 6 months.</u> Birth of offspring must be reported within 7 days and transferred within 15 days.</p>

Competition Commission of India (CCI) Regulations, 2024	The Competition Commission of India (CCI) issued new regulations under the Competition (Amendment) Act 2023
	<ol style="list-style-type: none"> Penalties based on global turnover to address abuse of dominant position by enterprises.
	<ol style="list-style-type: none"> Introduction of Commitment and Settlement mechanisms to efficiently resolve competition law concerns without a lengthy legal process
	<ol style="list-style-type: none"> Commitment involves companies offering to change practices to address concerns, while Settlement involves negotiated agreements for reduced fines.
Central Consumer Protection Authority (CCPA) Advisory on Advertisement of Illegal Activities	The advisory prohibits advertisements or endorsements of activities prohibited by law, such as betting or gambling , subject to rigorous scrutiny. Violations will lead to stringent measures against manufacturers, advertisers, publishers, intermediaries, social media platforms, endorsers, etc.
	Betting and gambling fall under the State subject in India , governed by laws enacted by State Governments based on the Public Gambling Act, 1867 .
	Additionally, in 2023, the Ministry of Information & Broadcasting issued an advisory on advertisements, including surrogate advertisements of online betting platforms .
	Central Consumer Protection Authority: Statutory body under Section 10 of the Consumer Protection Act 2019. Its objective is to promote, protect, and enforce consumer rights.

Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954	The Supreme Court has prohibited Patanjali Ayurved from denigrating allopathy and advertising products purported to treat chronic conditions , under the Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 .
	The act aims to control certain drug advertisements and prohibit magic remedy claims . Penalties include imprisonment and fines.
	Despite being the brand ambassador, Mr Ramdev's lack of legal ownership in Patanjali Ayurved may shield him from scrutiny
Rajasthan Police Subordinate Service Rules, 1989	The Supreme Court upheld Rajasthan's rule limiting police constable candidates to those with two or fewer children . Rule 24(4) of the Rajasthan Police Subordinate Service Rules, 1989, was deemed non-discriminatory and constitutional . The rule disqualifies candidates with more than two children since June 1, 2002. This ruling aligns with similar policies in other states aimed at promoting family planning and population control .
	Population control falls under the concurrent list

13. SWEDEN JOINS NATO

Context:

Sweden has officially become the **32nd member of NATO**, joining the military alliance two years after applying following Russia's invasion of Ukraine.

Sweden's NATO membership was **delayed due to objections from Turkey and Hungary**, but eventually received approval.

NATO	Details
Formation	1949 (HQ: Brussels, Belgium)
Members	32 member countries (as of 2023, including Finland and Sweden)
Founding Members	Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States
Article 5 of NATO	A key provision of the NATO treaty states that an attack on one member is an attack on all members . It has been invoked only once after the 9/11 terrorist attacks in the United States. However, NATO's protection does not extend to members' civil wars or internal coups .
Alliances	Euro-Atlantic Partnership Council (EAPC), Mediterranean Dialogue, Istanbul Cooperation Initiative (ICI) Visit Insights IAS Daily CA for outcomes of the Conference

Nato's European expansion since 1949



14. DYING DECLARATION

Context:

In the **Naeem vs. The State of Uttar Pradesh** case on March 05, 2024, the Supreme Court (SC) ruled that **a dying declaration can serve as the sole basis of conviction** if it inspires full confidence, without requiring further corroboration.

What was the case about?

The case involved **Shahin Parveen**, who accused her brother-in-law (Pappi), his wife (Naeema), and Naeema's brother (Naeem) of setting her on fire. Despite affirming Pappi's conviction based on the dying declaration, the court acquitted Naeema and Naeem due to a lack of specific evidence against them. The judgment highlights the significance of credible dying declarations in criminal proceedings.

What is Dying Declarations?

A dying declaration is a **statement made by a person who believes they are about to die**, regarding the cause or circumstances of their impending death. It is **admissible as evidence** in legal proceedings, based on the belief that **a dying person would be unlikely to lie**.

15. DENOTIFICATION OF 10 CANTONMENTS

Context:

The Ministry of Defence has **denotified civil areas of 10 cantonments**, including ones in Uttarakhand, UP, Maharashtra, Jharkhand, and Rajasthan. The process involves **merging these areas with state municipalities**. Himachal Pradesh, with seven cantonments, is also undergoing this process, with Khas Yol already denotified.

What is the plan?

In 2023, the Ministry of Defence had notified that plan to **carve out the military areas in cantonments** and convert them into **"exclusive military stations"** with the Army exercising **"absolute control" over them**. The civilian areas, in turn, will be **merged with the local municipalities** to provide them with the benefits of various government schemes. **Not all cantonments will become military stations** as some army and civilian pockets are intertwined.

What are the issues with Cantonments?

Cantonments have **strict restrictions on construction, road use, and common area occupation, causing tension between civilians and the military**. Civilians face challenges in obtaining home loans and accessing government schemes. Even basic renovations require multiple permissions.

About Cantonments:

Information	Description
Definition	A proclaimed area under the Cantonments Act, 2006 , governed and controlled by the central government of India to provide municipal services for civilians living in the area.
History	It was established by the East India Company after the Battle of Plassey in 1757. Barrackpore (Calcutta) was the first Cantonment established in 1765. Currently, there are 62 cantonments in India .
Categories	Cantonment Boards are categorized into four categories based on population: Category I (>50,000), Category II (10,000-50,000), Category III (2,500-10,000), and Category IV (<2,500).
Administration	Cantonment administration falls under the purview of the Union Government (Ministry of Defence), as outlined in the Cantonments Act, 2006 , following the guidelines set by the 74th Constitutional Amendment . While the Union Government holds administrative authority, State Governments have the prerogative to implement schemes within Cantonment areas.

Composition	Consists of up to eight members: three ex-officio members, three nominated military members (garrison engineer, station commander, and senior executive medical officer), and one representative of the district magistrate.
Services Provided	Sanitation, primary education, street lighting, water supply, maintenance of roads, bridges, and public hospitals.
Cantonments vs Military station	Cantonments are civilian areas that are under the control of the military , and they usually have a civilian population living in them as well. Military stations, on the other hand, are purely military areas where only military personnel and their families reside.

16. UNNATI – 2024

Context:

The Union Cabinet approved the **Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024)** for a duration of 10 years, to incentivize **investors to set up new units or expand existing ones.**

Aspect	Details
About	The Uttar Poorva Transformative Industrialization Scheme (UNNATI – 2024) is a 10-year Central Sector Scheme aimed at fostering industrial development and employment generation in the North-east Region (NER). Certain industries are kept on a positive list , while others are on a negative list to maintain environmental balance.
Scheme Period	10 years with an additional 8 years for committed liabilities
Eligibility	All new industrial units and expanding units
Benefits	It offers incentives to new and expanding industrial units , with a maximum benefit of Rs 250 crore per unit
Categorization of Districts	Zone A (Industrially Advanced Districts) & Zone B (Industrially Backward Districts)
Scheme Division	Part A: Incentives for eligible units; Part B: Implementation and institutional arrangements for the scheme
Earmarking of Funds	60% to 8 Northeastern states , 40% on a FIFO basis
Implementation Agency	Department for Promotion of Industry and Internal Trade (DPIIT)

Committees for Oversight	Steering Committee, State Level Committee, Secretary Level Committee
Other Related Schemes	PM DevINE Scheme, NITI Forum for North East, North East Special Infrastructure Development Scheme

17. SUDHA MURTY NOMINATED TO RAJYA SABHA

Context:

Author and philanthropist Sudha Murty has been nominated to the Rajya Sabha by President Droupadi Murmu, announced by Prime Minister Narendra Modi on March 8. This nomination coincides with **International Women’s Day**, highlighting the significant role of **‘Nari Shakti’ or Women’s Power.**

Who is Sudha Murty?

Sudha Murty is a **renowned author, philanthropist, and former chairperson of Infosys Foundation.** Known for her immense contributions to **social work, education, and literature**, she has authored numerous books and has been recognized with prestigious awards, including the **Padma Shri and Padma Bhushan.** Sudha Murty is celebrated for her **advocacy for social causes and the promotion of education and healthcare initiatives.**

Nomination to RS:

The **nomination of members to the Rajya Sabha** falls under the purview of the **Ministry of Home Affairs**, as per the Allocation of Business Rules, 1961. **Article 80(3)** of the Constitution allows the **President to nominate 12 members to the Rajya Sabha** who possess special knowledge or practical experience in fields such as **literature, science, art, and social service.** This provision was upheld by the Delhi High Court in the case of **Ram Gopal Singh Sisodia Vs. Union of India** through its Secretary & Ors. (2012), where the nomination of Sachin Tendulkar under Article 80(3) was validated.

Powers:

Nominated members of the Rajya Sabha **possess the same powers and privileges as elected MPs**, allowing them to participate fully in House proceedings. However, they are **unable to vote in the election of the President**, though they retain the **right to vote in the election of the Vice-President**

18. MYSORE PAINTS AND VARNISH LTD (MPVL)

Context:

Mysore Paints and Varnish Ltd (MPVL), India’s sole manufacturer of indelible ink, is ramping up production to meet the soaring demand ahead of the upcoming general elections.

Besides domestic demand, **MPVL is also catering to export orders**, reinforcing its pivotal role in safeguarding electoral integrity worldwide. **Under rule 49K of Conduct of Elections Rules, 1961** every elector shall allow his **left forefinger** to be inspected by the Presiding officer or Polling Officer and an Indelible ink mark to be put on it.

What is Indelible Ink and how does it work?

Indelible ink is a **special purple colour** ink used to mark voters during elections to **prevent duplicate voting**. It is typically applied to a voter's finger after they cast their vote and is designed to be long-lasting and resistant to removal. It often **contains silver nitrate**, which reacts with the skin and on exposure to light, forms a **permanent dark mark**. The ink works by **penetrating the skin and staining it**, making it difficult to wash off or remove with solvents.

19. 'NITI FOR STATES' PLATFORM

Context:

The **'NITI for States' platform**, a **digital initiative aimed at empowering states and union territories (UTs)** in achieving **national development goals** was launched recently.

- The platform, **inaugurated at NITI Aayog's 'Viksit Bharat Strategy Room'**, provides a centralized **repository of resources including best practices, policy documents, datasets, and NITI Aayog publications**.
- It features **multilingual accessibility, capacity building initiatives, an expert help desk, and data integration** from the National Data & Analytics Platform (NDAP).

It reflects NITI Aayog's commitment to collaborative governance and promoting development across the nation.

20. NATIONAL COOPERATIVE DATABASE

Context:

Cooperation Minister launched the **National Cooperative Database**, aiming to **facilitate the expansion and development of cooperatives in India**.

- The database is a **web-based digital dashboard** capturing information about **over 8 lakh registered co-operative societies, involving more than 30 crore people**.
- Additionally, the **'National Cooperative Database 2023: A Report'** was released which highlighted the **progress made in computerizing all primary agricultural credit societies (PACS) in the country**.

The government of India established the **Agricultural Refinance Corporation in 1962 to provide long-term loans to cooperatives**. In 1963, Parliament established the **National Cooperative Development Corporation (NCDC)**

To form a cooperative society in India, at **least 10 adults must consent**. The association can then be **registered with the Registrar of Co-operative Societies**

21. ZERO FOOD CHILDREN

Context:

A recent study highlights India's alarming issue of 'zero-food children,' estimating **over 6 million affected**, particularly prevalent in Uttar Pradesh (U.P.).

Who are 'Zero-food children'?

It refers to **infants aged six to 23 months** who have **not consumed any food of substantial calorific content** (such as semi-solid, solid, soft, or mushy foods, infant formula, or fresh milk) for the **last 24 hours**. India has the **third-highest percentage of children** who have not eaten any food for 24 hours.

These children suffer from **extreme food deprivation**, which can have severe consequences on their growth and development.

The period after six month is critical because, at approximately six months of age, **breastfeeding alone is insufficient** to meet the nutritional needs of a child.

22. SC JUDGEMENT ON RAJYA SABHA ELECTIONS

Context:

The recent Supreme Court ruling clarified that **Rajya Sabha elections fall under the purview of Article 194(2) of the Constitution**, recognizing its role as part of the Basic Structure of the Constitution.

It emphasized that **parliamentary privileges extend beyond legislative activities**, covering other powers and responsibilities of elected members, **even when the house is not in session**. The decision also **rejected** the argument that Rajya Sabha voting isn't a legislative vote, affirming that such elections are integral to elected members' powers and responsibilities.

Basic Structure doctrine safeguards **essential constitutional features** from amendment. The Rajya Sabha (constituted under **Article 79 and 80**), as the upper house of Parliament, **represents state interests** and is vital for ensuring equal representation among states.

23. S.R. BOMMAI CASE COMPLETES 30 YEARS

What is the case about?

The S.R. Bommai case (involving 9 judge bench) refers to the **legal battle initiated by S.R. Bommai, the former Chief Minister of Karnataka after his government was dismissed in 1989 under Article 356 of the Constitution**. The case, which concluded in 1994, resulted in a **landmark Supreme Court verdict that restricted the arbitrary dismissal of state gov-**

ernments by outlining specific guidelines.

Important takeaways from the judgement:

1. **Clarified the scope of Article 356** of the Constitution and imposed restrictions on its use
2. President’s Rule can only be imposed on a **state’s failure of constitutional machinery** and requires **approval by both houses of Parliament** within two months, renewable every six months.
3. President’s power to dismiss a state government is subject to judicial review
4. Emphasized the importance of **the Assembly floor in testing the majority of a government**
5. **It checked the power of Governors and upheld federalism in center-state relationships**

Recent instances where the S.R. Bommai case principles were applied by the Supreme Court include:

1. **Goa Political Crisis (2022):** The SC directed a floor test in Goa following the demise of the Chief Minister, emphasizing the Assembly’s role in proving the majority.
2. **Maharashtra Political Crisis (2019):** During the turmoil, the SC stressed the need for a transparent floor test to ascertain the majority.
3. **Karnataka Political Crisis (2019):** In response to MLA resignations, the SC directed a floor test to determine government legitimacy.
4. **Arunachal Pradesh Political Crisis (2016):** The SC invoked Bommai principles to limit the Governor’s discretion and emphasize the Assembly’s role in proving the majority.

24. ‘DEMOCRACY REPORT 2024’

Context:

India, downgraded to an **“electoral autocracy” in 2018**, has further declined to become **“one of the worst autocracies,”** according to the **‘Democracy Report 2024’** by the **V-Dem Institute**.

About the Report:

Aspect	Details
Released by	V-Dem Institute at Sweden’s University of Gothenburg
Data Collection	A collaborative effort involving 4,200 scholars from 180 countries
Scope	Spans 1789 to 2023, covering 202 countries
Regime Types	Classified into four categories using the Liberal Democratic Index (LDI) Four types are: Liberal Democracy, Electoral Democracy, Electoral Autocracy, and Closed Autocracy
Key Findings	India ranks 104 in LDI , slipped to 110 in the Electoral Democracy Index, 92 in the Liberal Component Index The report highlighted deteriorating components of democracy, such as freedom of expression, clean elections, media independence, and civil society participation
Global Trend	42 countries and about 3 billion people affected by increasing autocratization
Regional Impact	South and Central Asia second most autocratic region globally, Bhutan sole liberal democracy
Component Indices	V-Dem LDI combines indicators from the Liberal Component Index (LCI) and Electoral Democracy Index (EDI) EDI Measures fairness of elections, freedom of expression, information, association, and suffrage LCI Emphasizes the protection of individual and minority rights against state oppression and majority rule

25. NFECs AND NECCE LAUNCHED

Context:

The Ministry of Women and Child Development has launched a **National Curriculum for Early Childhood Care and Education (ECCE)** for children aged **three to six years**, along with a **National Framework for Early Childhood Stimulation (NFECs)** for children from **birth to three years**.

About NFECs and NECCE:

Aspect	NFECs (National Framework for Early Childhood Stimulation)	NECCE (National Curriculum for Early Childhood Care and Education)
Target Age Group	Children from birth to three years	Children from three to six years
Objective	Empower caregivers and Anganwadi Workers for holistic early stimulation	Enhance the quality of early childhood care and education at Anganwadi Centres It is aligned with the National Curriculum Framework for Foundational Stage 2022 (NCF-FS)
Developmental Domains Covered	Physical, cognitive, language, socio-emotional, cultural/aesthetic, positive habits	Physical/motor, cognitive, language and literacy, socio-emotional, cultural/aesthetic, positive habits
Approach	Responsive caregiving, opportunities for early learning	Competency-based lesson plans, joyful learning, preparation for primary school
Activities	36 month-wise-age-based activities	Weekly calendar with 36 weeks of active learning, 8 weeks of reinforcement, and 4 weeks of initiation
Special Focus	<p>Serve and return: It refers to the interaction between caregivers and children, where the caregiver responds to the child's actions or cues, creating a supportive and nurturing environment.</p> <p>Caregiver's three acts: Love, Talk and Play</p> <p>Positive guidance: It involves providing gentle and supportive direction to encourage positive behaviour and development in children.</p>	Screening, inclusion, and referrals for Divyang children, community engagement
Prepared by	Both documents have been prepared by the National Institute for Public Cooperation and Child Development (NIPCCD) and will be integrated into the Poshan Tracker . NIPCCD will lead the training of Anganwadi functionaries on the new Curriculum and Framework	

These initiatives are aligned with the [National Education Policy 2020](#)

26. HYDERABAD LIBERATION DAY

Context:

The Central government has **declared September 17 as 'Hyderabad Liberation Day' annually**, commemorating the integration of **Hyderabad into the Indian Union in 1948**.

The announcement, made by the **Ministry of Home Affairs** through a gazette notification, honours the **martyrs who liberated Hyderabad from Nizam's rule during Operation Polo**. This decision aims to instil patriotism.

Background:

In 1947, Hyderabad, the largest Princely State, encompassed present-day Telangana and parts of Karnataka and Maharashtra, ruled by the **seventh Nizam, Mir Usman Ali**. As India transitioned to independence, provinces were given the choice to join India, Pakistan, or remain independent. Despite efforts by Home Minister Sardar Patel to integrate Hyderabad into India, the **Nizam declared it an independent nation**. A Standstill Agreement was signed in November 1947, **granting India control over foreign affairs, defence, and communications** while leaving domestic affairs to the Nizam. However, internal dissent grew, with the **Hyderabad State Congress and Communist-led peasant movements** opposing the Nizam's rule. The Nizam's response was ruthless, **employing the Razakars**, a para-military force, to suppress dissent. In the face of escalating violence, the Union government **initiated Operation Polo**, deploying the army to integrate Hyderabad into India on September 13, 1948.

27. UCC IN UTTARAKHAND BECOMES LAW

Context: The **Uniform Civil Code (UCC) Bill in Uttarakhand**, passed by the state Assembly has **received the President's assent, making it law**.

- It makes Uttarakhand the first state in India to adopt the UCC after Independence.
- The UCC aims to provide equal rights to all citizens, curb the oppression of women, and promote social equality.

For more about UCC in [Uttarakhand: Click Here](#)

28. INTER-GOVERNMENTAL FRAMEWORK AGREEMENT (IGFA)

Context:

The Union Cabinet has given ex-post facto approval to the Inter-Governmental Framework Agreement (IGFA) signed on 13th February 2024 between India and the United Arab Emirates.

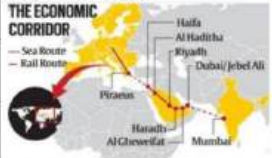
This agreement aims to enhance bilateral relations and strengthen cooperation in the Ports, Maritime, and Logistics sectors, focusing on the India-Middle East Europe Economic Corridor (IMEC). It outlines areas of collaboration and sets principles, guidelines, and agreements for joint investment and development in the IMEC, in line with respective countries' regulations.



India-Middle East-Europe Economic Corridor (IMEE-EC)

What is IMEE-EC?

The India-Middle East-Europe Economic Corridor (IMEE-EC) is an infrastructure development project that aims to create connectivity through rail and shipping networks, energy cables, and data links.

India-Middle East-Europe Economic Corridor (IMEE-EC)	
Participating Countries	India, Saudi Arabia, UAE, France, Germany, Italy, USA, EU
Objectives	IMEC seeks to boost trade, clean energy, and economic growth while providing an alternative to <u>China's Belt and Road Initiative (BRI)</u>
Part of	It is part of the <u>Partnership for Rail and Shipping Corridors Global Infrastructure Investment (PGII)</u> and focuses on enhancing global trade and cooperation through critical infrastructure development.
Corridor Components	<p><u>Railway lines</u> (make trade between India and Europe 40% faster)</p> <p><u>Electricity cable</u> and a clean hydrogen pipeline to foster clean energy trade.</p> <p><u>High-speed data cable</u> to link innovative digital ecosystems in the world and create business opportunities</p>
Corridor Segments	<p>Eastern Corridor connecting India to the Arabian Gulf, Northern Corridor connecting Arabian Gulf to Europe</p> 
Benefits for India	<p>Enhancing <u>food security, regional supply chains, trade accessibility, environmental considerations, economic cohesion, job creation, and reduces greenhouse gas emissions.</u></p> <p>Reliable <u>cross-border ship-to-rail transit network</u> connecting India, the UAE, Saudi Arabia, Jordan, Israel, and Europe.</p> <p>It offers India a <u>crucial role in global commerce, digital communication, and energy networks vis-à-vis China's BRI</u></p> <p>Geographical Advantage: It firmly positions India along the trade route spanning South East Asia to the Gulf, West Asia, and Europe.</p>
To know more Visit Insights IAS Daily Current Affairs	

29. PRADHAN MANTRI SAMAJIK UTTAHAN EVAM ROZGAR ADHARIT JANKALYAN (PM-SURAJ) PORTAL

Context:

The Prime Minister virtually launched the Pradhan Mantri Samajik Utthan evam Rozgar Adharit Jankalyan (PM-SURAJ) portal, aimed at providing credit support to entrepreneurs from disadvantaged sections of society.

- The portal serves as a one-stop point for applying and monitoring progress for loan and credit schemes implemented by the Ministry of Social Justice and Empowerment.

30. UNITED NATIONS INTER-AGENCY GROUP FOR CHILD MORTALITY ESTIMATION (UN IGME)

Context:

The United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) released a report indicating that in 2022, global child deaths before the age of five dropped below 5 million for the first time.

Key Findings:

- Despite this progress, an estimated 4.9 million children died, highlighting the need for further action to end preventable child deaths.
- Disparities in survival exist based on factors such as geographical location, socioeconomic status, and living in fragile and conflict-affected settings.
- Low-income countries and those in fragile situations face higher under-five mortality rates.

The United Nations Inter-Agency Group for Child Mortality Estimation (UN IGME) is a technical group that produces annual estimates of child and adolescent mortality. The UN IGME was formed in 2004 to share data on child mortality, improve methods for child mortality estimation, and report on progress towards child survival goals. The UN IGME includes representatives from UNICEF, WHO, the World Bank, and the United Nations Population Division.

31. BHUTAN'S GELEPHU PROJECT

Context:

Bhutan's Gelephu project, a regional economic hub, aims to build a "Gelephu Mindfulness City" as a special administrative zone, focusing on non-polluting industries like IT and education.

This initiative, led by Bhutan's Prime Minister, seeks support from India for financing and expertise.

The Gelephu Project is significant for Bhutan as it aims to promote tourism by upgrading the Gelephu airport, boosting employment, and addressing geopolitical concerns with China. For India, it strengthens ties with Bhutan, aligns with regional infrastructure plans, and facilitates demand for power supply through initiatives like the South Asian power grid.

Bhutan, nestled between India and Tibet, became a democracy in 2008 with the king as Head of State. Its main

rivers, including the Torsa, Wong, Sankosh, and Manas, flow southward from the Great Himalayas, with the **Manas River** being the longest and transboundary.



32. CASHLESS TREATMENT OF ROAD ACCIDENT VICTIMS

Context:

The Government of India is launching a pilot program for **cashless treatment of road accident victims**, in alignment with its commitment to **reduce fatalities** due to road accidents.

The pilot program, developed under the Ministry of Road Transport & Highways, aims to **establish an ecosystem** for providing **timely medical care** to road accident victims, including during the **golden hour**. The **National Health Authority** will oversee implementation in coordination with police, hospitals, and State Health Agencies. Victims are entitled to cashless treatment of up **to Rs. 1.5 lakhs per person** for a maximum of 7 days from the date of the accident, applicable to all road accidents. Hospital claims for treatment will be **reimbursed from the Motor Vehicle Accident Fund**.

The program will **utilize the AB PM-JAY packages for trauma cases**. Implementation will be facilitated through an **IT platform combining functionalities of MoRTH's eDAR application** and NHA's Transaction Management System (TMS).

33. MODEL CODE OF CONDUCT

Context:

The **Model Code of Conduct (MCC)** has been enforced by the **Election Commission of India (ECI)** for the **2024 Lok Sabha elections**, beginning from the **announcement of the election schedule until the declaration of results**.

- This code regulates the **behaviour of political parties and candidates during the election period, aiming to ensure free and fair elections**.
- It includes provisions regarding **general conduct, meetings, processions, polling day, polling booths, observers, the party in power, and election manifestos**.

- Key restrictions imposed by the MCC include **prohibiting the announcement of policy decisions by the ruling party**, using official positions for campaigning, **combining official visits with election work**, using government resources for campaigning, and making ad-hoc appointments that may influence voters.
- The **MCC is not legally binding but is enforced through moral sanction or censure by the ECI**.

34. BHARATIYA ADIM JATI SEVAK SANGHATHAN (BAJSS)

Context:

Union Minister for Tribal Affairs, virtually laid the foundation stone for a 'Centre for Preservation and Promotion of Tribal Culture & Heritage' in Jharkhand.

- The centre aims to **showcase the rich legacy of the tribal community** in Jharkhand and serve as a **knowledge centre for tribal development**.
- Renovated **National Tribal Museum, e-Library, and ST Girls' hostel at Bharatiya Adim Jati Sevak Sanghathan (BAJSS)** in New Delhi was also inaugurated.
- The museum, **established by Shri Amritlal Vithaldas Thakkar, is being revived with an allocation of over Rs. 3 crores from the Union Ministry for Tribal Affairs**.

The initiative aims to **conserve tribal artefacts, digitize the library, and provide interactive digital kiosks for information dissemination**.

35. CINEMATOGRAPH (CERTIFICATION) RULES, 2024

Context:

The Ministry of Information and Broadcasting has **introduced new Cinematograph (Certification) Rules, 2024**, replacing the old rules from 1983.

- These rules stem from the **Cinematograph (Amendment) Act, 2023**, which amended the **Cinematograph Act, 1952**.

Aim: These rules aim to **address various concerns in film certification** and have been revamped to align with online certification processes, enhancing transparency and efficiency.

Key aspects of the new rules include:

1. **New Age-based certification:** The UA category now includes sub-categories based on age – UA 7+, UA 13+, and UA 16+, to help parents decide if a film is suitable for their children
 - a. **Older category of certification will continue:** U (Universal), A (Adult Only) and S (for specific classes of persons)

- b. This is in line with the **Shyam Benegal committee's (2017) recommendations**.
- 2. **Reduced certification time:** Digital processes will expedite certification, with provisions for priority screening in urgent cases, enhancing transparency and efficiency.
- 3. **Increased representation for women:** The CBFC Board and Advisory Panels will have greater female representation, with **one-third of members on the Board being women**
- 4. **Accessibility features:** Films will be required to include accessibility features for certification to ensure **inclusivity for disabled persons**.
- 5. **Perpetual validity:** CBFC certificates will have perpetual validity, **removing the previous 10-year restriction**, with recertification required only for television broadcasts of edited films.

Cinematograph (Amendment) Act 2023 was passed (amended the Cinematograph Act 1952) and includes stricter punishments for **piracy**, ranging from **minimum three-month imprisonment and a fine of three lakh rupees to up to three years imprisonment** and a fine of up to five per cent of the audited gross production cost

Significance of the Bill:

- a. **Enhances the certification process** to align with modern standards.
- b. **Combats film piracy, fostering rapid industry growth** and job creation.

Concerns: Relies on self-regulation for age-appropriate content, placing responsibility on parents and guardians.

About CBFC:
The Central Board of Film Certification (CBFC) (founded 1951; HQ: Mumbai) is a statutory body under the Ministry of Information and Broadcasting, responsible for regulating film exhibition in India according to the **Cinematograph Act 1952**. It certifies films for public screening in cinemas and on television, ensuring compliance with regulatory standards.

36. '2+2' DEFENCE AND FOREIGN MINISTERIAL DIALOGUE

Context:

India and Brazil held their first **'2+2' defence and foreign ministerial dialogue in Delhi**.

What is '2+2' defence and foreign ministerial dialogue?

The '2+2' defence and foreign ministerial dialogue involves **high-level meetings between the defence and foreign ministers of two countries**. It aims to enhance cooperation and coordination on defence and foreign policy matters between the participating nations. India has '2+2' dialogues with the

US, Australia, Japan, Brazil etc.

In the **'2+2' Dialogue, India and Brazil** discussed expanding cooperation in energy, critical minerals, technology, and counter-terrorism.

India-Brazil Relations:

Bilateral relations between India and Brazil have been **strategic partners since 2006**, with cooperation in various multilateral forums like the UN, G20, BRICS, and IBSA. They support each other for **permanent seats in the UNSC as part of the G4 alliance**. They also collaborate in initiatives like the **International Solar Alliance and MERCOSUR**. India is **Brazil's 5th largest trading partner**, and ISRO launched Brazil's satellite **Amazonia-1** in 2021. Brazil's expertise in biofuels complements **India's initiatives, including the Global Biofuels Alliance**.

37. FLNAT

Context:

The **Foundational Literacy and Numeracy Assessment Test (FLNAT)** was recently conducted nationwide under the **ULLAS (Understanding Lifelong Learning for All in Society) - Nav Bharat Saaksharta Karyakram**, across 23 states for about 37 lakh learners.

What is FLNAT?

The Foundational Literacy and Numeracy Assessment Test (FLNAT) evaluates **Reading, Writing, and Numeracy skills** to assess foundational literacy and numeracy. It will be conducted in **all districts** of participating States/UTs at **District Institutes of Education and Training (DIETs)** and Government/aided schools.

Aim: FLNAT aims to **certify non-literate learners and promote multilingualism**, aligned with NEP 2020.

The test comprises three subjects - Reading, Writing, and Numeracy - each carrying 50 marks, totalling 150 marks. Conducted in **regional languages**, it aims to promote **multilingualism and preserve linguistic diversity**. Successful learners will receive certificates from the **National Institute of Open Schooling (NIOS)**.

What is ULLAS (Understanding Lifelong Learning for All in Society)?

It is a centrally **sponsored scheme for 2022-2027**, that empowers **adults aged 15 and above with basic literacy, numeracy**, and critical life skills, promoting lifelong learning through **volunteerism** and access to regional language content on **the DIKSHA Portal and ULLAS mobile app**.

Other initiatives for Foundational Literacy and Numeracy (FLN):

- 1. **DIKSHA or Digital Infrastructure for Knowledge**

Sharing: Launched in 2017, it is a national platform of the NCERT, where teachers can find interactive and engaging teaching material to make their classes interesting.

2. **NIPUN Bharat Mission:** Launched in 2021 to ensure that every child in the country necessarily attains foundational literacy by the end of the third grade by the year 2026-27.
3. **NISHTHA:** A new training program (in FLN) for the teachers, as well as the heads of the school launched by the NCERT.
4. **The National Curriculum Framework for Foundational Skills 2022:** To meet a key focus area of the NEP 2020, to improve the foundational skills of students.
 - a. **Under this, 'jadui pitara'** – learning and teaching material for the foundational stage of schooling, has been launched recently.

38. UN ON DISARMAMENT

Context:

UN Secretary-General Antonio Guterres has stressed that **disarmament is the only viable solution** to eliminate the threat of nuclear weapons.

What is Disarmament?

Disarmament refers to the **reduction or elimination of military weapons**, particularly nuclear, chemical, and conventional arms, with the goal of **enhancing global security and promoting peace**. It involves measures to **control, limit, or abolish weapons** of mass destruction and conventional weaponry, often through treaties, negotiations, and international agreements.

Six areas for action for Nuclear Disarmament:

1. **Dialogue to work together** for transparency and prevent accidental use
2. **Threats to use nuclear weapons** should stop
3. Nuclear weapon States must **re-affirm moratoria on nuclear testing**
4. Nuclear weapon states must **fulfil their disarmament commitments**
5. A joint **no-first-use agreement**
6. **US and Russia should resume talks** to reduce nuclear stockpiles under New START treaty

Key treaties for Nuclear disarmament:



- **The new START Treaty** is a nuclear arms reduction agreement between the US and Russia signed in 2010.
- **Treaty on the Prohibition of Nuclear Weapons (TPNW)- 2017:** Prohibits development, testing, possession, and use of nuclear weapons (entered into force in 2021)
- India signed and ratified only the **Partial Test Ban Treaty** among the above.

39. E-SHRAM PORTAL

Context:

The **Supreme Court of India** has directed **all states and Union territories** to **issue ration cards to migrant laborers** registered on **the e-shram portal within two months**.

- This decision comes **after authorities failed to comply with previous directives given in April 2023, which granted a three-month window** for providing ration cards to laborers.
- Out of around 29 crore registrants on the e-shram portal, **around 8 crore do not have ration cards and do not receive subsidized food grains** under **National Food Security Act (NFSA) 2013**.

The e-Shram portal is a **centralized database that helps to implement social security services for unorganized workers**.

It also helps to **share information with stakeholders and provide a comprehensive database for national crises**.

The portal **uses Aadhaar to deliver social security benefits** and ensure that the **benefits are portable to migrant and construction workers at their workplaces**.

40. DEMOCRACY IN INDIA

Context:

The Indian PM recently addressed the **Summit for Democracy**, highlighting India's commitment to democracy and its contributions to global democracy.

What is Democracy?

Democracy is a system of government where power is vested in the hands of the people, allowing them to participate in decision-making through voting and representation.

The debate:

Western narrative claims that **democracy was invented in ancient Athens** before being rediscovered and spreading around the globe in modern times. India's historical references to democratic practices **challenge this narrative**.

India's Evolution of Democracy:

Era	Key Developments
Vedic Era (6000-1100 BCE)	Mention of representative bodies like Sabha, Samiti, and Sansad in Rigveda and Atharvaveda
Epics	Ramayana and Mahabharata emphasize governance for people's welfare and ethical governance. Bhagavad Gita offers ancient guidance on duties and morality
Mahajanpada and Gantantra (7th-8th Century BCE)	Mahajanapada governance models reflect people's collective governance. Texts like Ashtadhyayi highlight democratic institutions
Jainism (7th Century BCE)	Promotes pluralism and tolerance through Anekanatavada . Advocates peaceful co-existence, aligning with democratic principles
Buddhism (Since 500 BCE)	Bauddha Sangha exemplifies early democratic practices. Encourages open discussions and elections for leaders
People's Leader (Ancient India)	Election of Mahasammatta (Great Elect) for governance. Buddhist principles influence rulers, ensuring democratic values
Kautilya & Arthashastra (350-275 BCE)	Arthashastra emphasizes citizens' welfare and the ruler's responsibility. Advocates serving, not ruling
Megasthenes and Diodorus Siculus' Records (300 BCE)	Greeks note democratic governance in Indian states. Highlights India's aversion to slavery, an essential aspect of true democracy
Ashoka's Governance (265-238 BCE)	Emperor Ashoka promotes peace and well-being through democratic governance. Systematic ministerial elections ensure people's participation
Fa Xian's Records (5th Century CE)	Observe Indian respect for people, Rule of Law, and public welfare . Highlights democratic principles in Indian governance
Khalimpur Copperplate (9th Century CE)	Gopala's election by the people showcases principles of justice and order. Reflects democratic transition in governance
Shrenisangha System (876 CE)	Electing administrative officials, including guilds and town leaders. Illustrates democratic administration in India
Uthiramerur Inscriptions (919 CE)	Affirm democratic elections and local self-governance. Highlights early democratic practices in South India
Vijay Nagar Empire's Governance	'Sarv-sammati' principles promote participatory governance. Emphasizes self-governance at the village level
Padishah Akbar (1556-1605 CE)	Introduces "Sulh-i-Kul" to combat religious discrimination. Showcases inclusive governance and religious harmony
Chhatrapati Shivaji (1630-1680 CE)	Advocates for democratic governance and equal rights. Outlines duties for the Ashtha-Pradhan , ensuring participatory governance
Constitution Of India (1947 Onwards)	Establishes a modern, democratic Republic. Ensures equality and universal suffrage
Elections In Modern India (1952 Onwards)	Experiences numerous national, state, and local self-government elections . Reflects India's deep-rooted democratic ethos and peaceful transfers of power

About the Summit for Democracy:

The Summit for Democracy, **launched by the US in 2021**, is a platform for democracies worldwide to **share experiences, strengthen democratic institutions, protect human rights**, and combat corruption. It aims to promote collaboration among democratic nations and advance initiatives for democratic renewal, including efforts to enhance technology for democracy and defend free and fair elections.

41. PRESS INFORMATION BUREAU'S FACT CHECK UNIT

Context: The Ministry of Electronics and Information Technology notified the **Press Information Bureau's Fact Check Unit as the central government's fact-checking body** under the Information Technology Rules.

This move follows a **recent Bombay High Court decision** and precedes a Supreme Court hearing. The FCU will **vet online content related to the central government's business**, aiming to **identify false or misleading information**. While some view it

as a violation of freedom of speech, others argue it complies with the **Model Code of Conduct** and won't influence voters.

About PIB (formed 1919; HQ: New Delhi)
It is the nodal agency of the government to disseminate information on government policies, programmes, initiatives, and achievements. It has been notified under the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules 2021)**.

42. LADAKH'S STATEHOOD DEMAND

Context:

In Ladakh, thousands are protesting in sub-zero temperatures **demanding statehood job opportunities, land protection, and parliamentary representation**.

Background:

In 2019, the Government **revoked Article 370**, removing special status from Jammu and Kashmir, dividing it into Ladakh and Jammu and Kashmir. A year later, Leh and Kargil districts formed the **Leh Apex Body (LAB) and Kargil Democratic Alliance (KDA)** to address public concerns.

Demands of Ladakh:

1. **Statehood for Ladakh:** Seeking to elevate Ladakh from its current Union Territory status to a full-fledged state, granting it **greater political autonomy and decision-making powers**
2. **Reservation of Jobs:** The Ladakh administration responded to youth demands by **increasing ST reservation in direct recruitment from 10% to 45% in 2023**
3. **Creation of Separate Parliamentary Constituencies:** Demanding the establishment of **distinct Parliamentary constituencies for Leh and Kargil**, reflecting the unique demographic and geographical characteristics of each region.
4. **Ladakh's demand for the 6th Schedule:** Last year, in 2023, **a high-powered committee was formed in Ladakh** to address growing demands for its inclusion under the Sixth Schedule. Civil society groups seek protection of land, resources, and employment after Article 370's revocation. **The National Commission for Scheduled Tribes** had previously recommended Ladakh's inclusion in the **Sixth Schedule due to its tribal majority and unique cultural heritage**.

About 6th Schedule:

The Sixth Schedule, outlined in Article 244, establishes autonomous administrative divisions known as **Autonomous District Councils (ADCs)** within certain states. Currently, it applies to **tribal areas in Assam, Meghalaya, Tripura, and Mizoram**. Each autonomous district has a council with **legislative, judicial, and administrative powers**, including law-making on various matters such as land, forests, and village

administration. The governor organizes these districts, appointing some council members while others are elected. The councils can also manage **local infrastructure and collect revenue**

About Ladakh

It is a region administered by India as a union territory, and is located in the larger Kashmir region. It borders Tibet, Himachal Pradesh, Jammu and Kashmir, and China. Ladakh holds strategic importance, **historically serving as a trade hub**. **Leh and Kargil** are the largest towns, with diverse religious groups including **Muslims, Buddhists, and Hindus**. Established as a union territory in 2019, Ladakh is sparsely populated and shares cultural ties with Tibet. It is estimated that **more than 90% of Ladakh's population is tribal**. The primary Scheduled Tribes (STs) in Ladakh are **Balti Beda, Bot (or Boto), Brokpa (or Drokpa, Dard, Shin), Changpa, Garra, Mon and Purigpa**



Q. Under which Schedule of the Constitution of India can the transfer of tribal land to private parties for mining be declared null and void? (UPSC 2019)

- (a) Third Schedule
- (b) Fifth Schedule
- (c) Ninth Schedule
- (d) Twelfth Schedule

Ans: B

43. KEY REPORTS IN NEWS

Report Title	Key Findings	Recommendations
Lancet's 'Global Burden of Disease' Study	Global Total Fertility Rate (TFR) halved from 4.84 (1950) to 2.23 (2021)	Implement pro-natal policies like child-related cash transfers.
	India's TFR: 6.8 (1950), 1.91 (2021), projected to fall to 1.29 (2050) and 1.04 (2100)	Increase access to contraceptives and female education further
	In 47 countries fertility was below the replacement rate from 1950 to 2021	Invest in social security and healthcare.
	Improving access to contraceptives and female education are key factors driving declining fertility.	
Fourth Global E-waste Monitor (GEM) 2024 Report	Record global e-waste generation: 62 million tonnes in 2022, up 82% from 2010 and is expected to rise further by 32% to 82 million tonnes by 2030	Emphasize e-waste recycling . Increase awareness and regulations on e-waste management.
	E-waste generation is increasing five times faster than documented e-waste recycling	
	India is among the world's largest e-waste generators, producing 4137 million kg of e-waste .	
	The report is a collaboration between UNITAR's SCYCLE Programme, ITU, and Fondation Carmignac . UNITAR specializes in innovative learning solutions to enhance global decision-making and support country-level action for a better future.	
ILO's Report "Profits and Poverty: The Economics of forced labour"	Over 27 million people engaged in forced labour in 2021	Follow the ILO Protocol of 2014 to Forced Labour Convention, 1930
	Illegal profits from forced labour have risen by 37% since 2014.	Implement anti-forced labor laws
	In India brick kilns industry, and carpet weaving industry are some of the largest employers of bonded labour	
	International Labour Organization (ILO) is the only tripartite U.N. agency , since 1919. It brings together governments, employers and workers of 187 member States, to set labour standards, develop policies and devise programmes promoting decent work for all women and men	
WMO's State of the Global Climate 2023 report	2023 broke climate records (global average near-surface temperature reached 1.45°C above pre-industrial levels, making it the warmest year on record)	Transform the financial system for climate financing with an emphasis on concessional financing and de-risking
	Climate finance nearly doubled in 2021-22 compared to 2019-20. 90% increase in funds went to China, USA, Europe, Brazil, Japan, and India .	Mobilize domestic capital.
	Climate finance investments need to grow more than six times , by 2030 for a 1.5°C pathway	Improve data availability for better targeting of climate finance
	The World Meteorological Organization (founded 1950; HQ: Geneva; Parent organization: United Nations Economic and Social Council) is a specialized agency of the United Nations responsible for promoting international cooperation on atmospheric science, climatology, hydrology and geophysics.	

Income and Wealth Inequality in India, 1922-2023: World Inequality Lab (WIL) study	Inequality in India declined post-independence till the early 1980s , after which it began rising and has skyrocketed since the early 2000s .	Improve economic data quality
	The top 1% income share in India is among the highest globally.	Invest in health, education, and nutrition
	Richest owns over 40% of India's wealth .	Restructure the tax code to address income and wealth inequality e.g., a "super tax" of 2% on the net wealth of the wealthiest families can be imposed.
	World Inequality Lab (est. 2013; HQ: Paris, France) , is a research organization dedicated to studying global inequality dynamics. It operates with a network of over a hundred researchers covering nearly seventy countries and aims to extend the World Inequality Database	

44. BHASHANET PORTAL

Context:

The **Ministry of Electronics and Information Technology (MeitY)** and the **National Internet Exchange of India (NIXI)** have launched the **BhashaNet portal** during the **Universal Acceptance Day** event with support from the **Internet Corporation for Assigned Names and Numbers (ICANN)**.

- It is developed by the **Centre for Development of Advanced Computing with support of National Internet Exchange of India**.

Universal Acceptance (UA) is a **technical requirement that ensures that all domain names, email addresses, and top-level domains (TLDs) are treated equally**.

This means that all UA domain names can be **used by any internet-enabled device**, application, or system, regardless of script, language, or character length.

45. UNITING FOR CONSENSUS MODEL

Context:

India has criticized the **Uniting for Consensus (UfC) model** at the **United Nations** for opposing reforms to the **Security Council**, stating concerns **over a lack of representation from Africa and the Global South**, and **no change in permanent seat membership**.

The **Uniting for Consensus (UfC)**, also known as **the Coffee Club**, emerged in the **1990s** as a movement opposing the **expansion of permanent seats in the United Nations Security Council**.

This model is supported by a group of countries, primarily including **Italy, China, Argentina, and Pakistan, among others**.

UfC argues that **increasing the number of permanent members** could lead to **decreased efficiency and effectiveness in decision-making within the Security Council**.

46. POSTAL BALLOTS

Context:

The **Election Commission of India** has announced the **provision of postal ballots** for **absentee voters from essential services in Tamil Nadu**.

Workers from various sectors including **Mercantile Marine, Bharat Sanchar Nigam Limited, Chennai Metro Rail Limited, Ministry of Information and Broadcasting, Food Corporation of India, Zonal Office (South)**, and the **media industry** are eligible.

Currently, the following voters are also allowed to cast their votes through postal ballot:

- Service voters (armed forces, the armed police force of a state and government servants posted abroad)
- Voters on election duty
- Voters above 80 years of age or Persons with Disabilities (PwD)
- Voters under preventive detention

Procedure for Postal Ballots:

According to EC instructions, the **facilitation centre in charge of handling postal ballots is required to open the drop box daily** in the presence of party and candidate representatives. Each constituency's ballots are placed in a large envelope and then sent to the **Returning Officer (RO)** at the end of each voting day. The RO assumes custody of these bags, storing them securely in a designated **"special strong room"**

Procedure for Absentee Voters:

For absentee voters, Booth Level Officers (BLOs) deliver ballot forms to homes and collect filled forms within five days. Essential services personnel can vote at special centres for three days before polling. Postal ballots are sent to the **Returning Officer (RO) daily**. To ensure secure handling, postal ballots are transferred to a strong room at the counting centre before counting.

About Postal ballots:

It refers to a **method of voting where eligible voters receive their ballots by mail**, rather than **casting their votes in person at a polling station**. This allows voters who are unable to physically attend a polling station, such as those living abroad, military personnel, or individuals with disabilities, to participate in elections.

47. SECTION 153A OF THE INDIAN PENAL CODE

Context:

The Supreme Court, in a recent judgement, clarified that to constitute an offence under [Section 153A](#) of the Indian Penal Code, the **essential requirement is to incite enmity and disharmony among different groups or communities**.

What is Section 153A of the Indian Penal Code?

Section 153A of the IPC penalizes actions that promote hostility between groups based on **religion, caste, race, etc.** Offenders spreading hate or disharmony through words, images, or actions **face imprisonment for up to three years, fines, or both**. If the offence occurs in a place of **worship**, the punishment can **increase to five years in prison**.

The application of the law:

1. **Hate speech laws have been invoked** under different regimes to crack down on criticism of public functionaries and to arrest individuals.
 - a. For example, a **Marathi actor was arrested** (booked under Section 153A of the IPC) last year, for a Facebook post allegedly defaming an NCP leader.
2. **According to the NCRB data**, the rate of conviction for Section 153A is very low. In 2020, **1,804 cases were registered** (six times higher than in 2014), however, the conviction rate was 2%.
3. Also, the **registration of multiple FIRs** across different states drains the resources of the accused to secure legal representation.

Safeguards against misuse:

1. **Section 153A requires prior sanction** (before the trial begins, not at the stage of preliminary investigation) from the government for initiating prosecution.
2. **In the Arnesh Kumar v State of Bihar case (2014)**, the SC laid down a set of guidelines. For instance, the police cannot automatically arrest a suspect before investigation for crimes that carry a punishment of less than seven years.
3. **In 2021, the SC ruled that the state will have to prove intent** (to cause disorder or incite people to violence) to secure a conviction under Section 153A.

48. PREVENTIVE DETENTION

Context:

The Supreme Court emphasized the **need to prevent the arbitrary use of preventive detention powers, overturning a Telangana High Court decision**.

- It clarified that preventive **detention is meant to avert future harm, not as a form of punishment, and should be based on careful consideration of facts**.
- The court highlighted that **preventive detention is a severe measure and should not be invoked routinely or arbitrarily by authorities**.

The Supreme Court also underscored that **the grounds for detention must be clearly stated, and the decision should be based on a thorough examination of relevant facts**.

About Preventive Detention:

- Preventive detention entails the **detention of an individual without a trial or conviction by a court, aiming to prevent future offences rather than punish past ones**.
- Governments enact preventive detention laws **to ensure public safety and maintain social order**.
- In India, **Article 22 of the Constitution** provides **safeguards for individuals detained under such laws**.
- It **limits the duration of preventive detention to three months** unless **an Advisory Board approves an extension**.
- The detainee has the **right to know the grounds of detention** and **make representations against it**.
- Parliament **has exclusive power to enact preventive detention laws for defence, foreign affairs, or national security reasons**, while both Parliament and State Legislatures can enact laws for maintaining public order or essential services.
- Various laws in India, such as the **National Security Act (NSA) and the Unlawful Activities (Prevention) Act (UAPA)**, allow for preventive detention for up to 12 months without formal charges, with periodic review by an advisory board.

49. SLAPP SUITS AND INJUNCTIONS

Context:

The Supreme Court has cautioned courts against the **use of SLAPP suits** by powerful entities to **curb free speech**, particularly in cases involving **media platforms and civil society**.

What are SLAPP suits?

SLAPP suits, or Strategic Litigation Against Public Participation, are legal actions filed by entities, such as corporations or individuals, with the intent to **intimidate or silence critics**, typically activists, journalists, or members of the public, by **burdening them with costly legal proceedings**.

E.g., In 2000, the **Tata Group filed a SLAPP suit** against environmental activist Dr. Claude Alvares and others for publishing a book critical of the company's activities.

What is the case here?

In a recent order, the **Court set aside injunctions against Bloomberg Television Services India Pvt Ltd**, emphasizing the need to balance free speech rights with reputational concerns in defamation suits. The Court highlighted the potential misuse of **pre-trial injunctions** to stifle public debate and underscored the importance of exceptional caution in granting such injunctions.

What are Injunctions?

An injunction in India is **a legal remedy used to prevent a party from carrying out a specific action**, such as **intellectual property infringement** or breach of contract. It is a court order requiring a **party to do or cease certain actions and plays a crucial role** in legal battles. Violating an injunction can result in contempt of court charges.

An ex-parte injunction, issued without hearing from the other party, is granted in emergency situations to prevent irreparable harm.

50. GROUP OF FRIENDS (GOF)

Context:

India, leading the Group of Friends (GOF) comprising 40 member states, convened a **meeting to discuss strategies for strengthening legal frameworks against crimes targeting peacekeepers**.

- **India launched a new database hosted on the Unite Aware platform** to record **crimes against peacekeepers** and monitor accountability efforts.
- The meeting **underscores member states' commitment**, led by India, **to uphold the safety and dignity of peacekeepers worldwide**.

The **GOF was launched by India in 2022 to promote accountability for crimes against the Blue Helmets during its presidency of the UN Security Council**. **India, Bangladesh, Egypt, France, Morocco and Nepal are co-chairs of the GOF**, which comprises 40 member states.

GS-3

1. CENTRE FOR FOURTH INDUSTRIAL REVOLUTION (C4IR)

Context:

The World Economic Forum's Centre for Fourth Industrial Revolution (C4IR) was inaugurated during **BioAsia 2024 in Hyderabad**.

Aim: It aims to create **10,000 job opportunities in health tech**, support emerging companies, and generate novel ideas.

1. The focus areas include **real-world evidence, health-care analytics, and informatics**.
2. Initiatives like a **clinical registry, innovation sand-**

box, and data analytics lab are underway.

3. The centre aims to **develop industry-ready talent through skilling programs**.

What is C4IR?

C4IR stands for the Centre for Fourth Industrial Revolution. It is an initiative by the World Economic Forum (WEF) to establish centres that **focus on harnessing the potential of the Fourth Industrial Revolution (4IR) technologies** and driving collaboration between governments, businesses, and academia to address global challenges and opportunities.

About 4IR:

The Fourth Industrial Revolution (4IR), also known as the Digital Revolution, is characterized by the integration of technologies that blend the physical, digital, and biological realms. **Coined by Klaus Schwab, Founder and Executive Chairman of the WEF**, 4IR includes technologies such as **IoT, robotics, VR, AI, quantum computing, and 3D printing**. It brings about advancements in technology, boosts productivity and efficiency, contributes to economic growth, and facilitates good governance.

About WEF:

The World Economic Forum is an international non-governmental organization for public-private sector collaboration based in Cologny, Canton of Geneva, Switzerland. It was founded on 24 January 1971 by German engineer Klaus Schwab.

2. SEMICONDUCTOR MANUFACTURING

Context:

The Union Cabinet, led by the PM, approved the establishment of three semiconductor units as part of the **'Development of Semiconductors and Display Manufacturing Ecosystems in India' initiative**.

The approved units include:

1. **Semiconductor Fab in (Dholera) Gujarat**
2. **Semiconductor ATMP unit in Morigaon, Assam**
3. **Semiconductor ATMP unit for specialized chips in Sanand (Gujarat)**

Aim: These units are **poised to generate significant employment opportunities** and **accelerate** India's capabilities in **chip fabrication and advanced packaging technologies**

What are Semiconductor and its Fabrication?

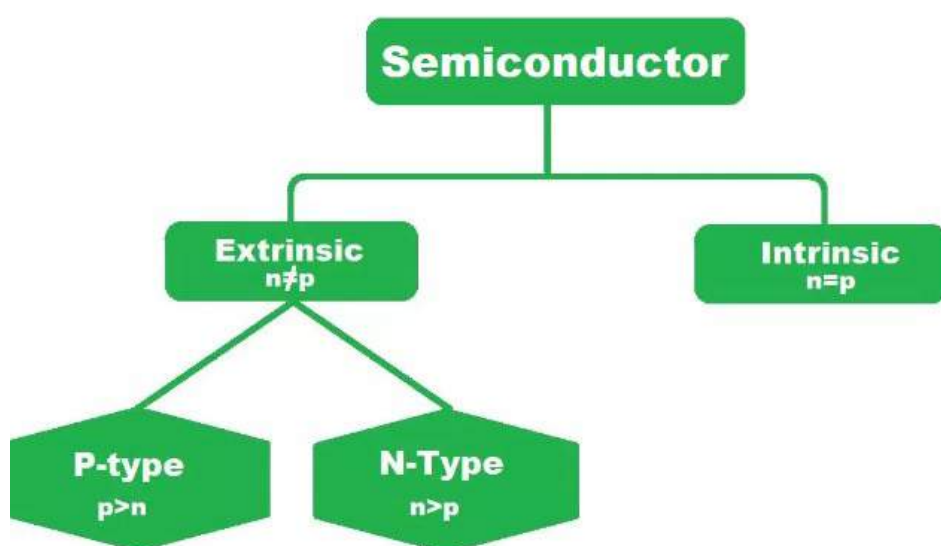
Semiconductors are materials that have **electrical conductivity between that of a conductor and an insulator**. They are crucial components in electronic devices, enabling the control and flow of electrical current.

Semiconductor fabrication, often referred to as "fab," is the process of manufacturing semiconductor devices, such as

integrated circuits (ICs) and transistors, on semiconductor wafers. This involves various steps including wafer preparation, deposition, lithography, etching, doping, and packaging.

What is a Semiconductor?

- ➔ A **semiconductor** is a material, whose conductivity properties lie between the conductor and insulator.
- ➔ Semiconductor Examples are: **Silicon, Germanium, Gallium Arsenide etc.**



- ➔ "n" stands for negative (free electrons)
- ➔ "p" stands for positive (holes)



3. INDIA'S GAGANYAAN MISSION

Context:

The Prime Minister announced the **names of the four astronauts undergoing training for India's Gaganyaan mission** during his visit to the Vikram Sarabhai Space Centre.

- The astronauts are Group Captain **Prashanth Balakrishnan Nair**, Group Captain **Ajit Krishnan**, Group Captain **Angad Pratap**, and Wing Commander **Subhanshu Shukla**.

The PM also inaugurated three major space infrastructure projects of ISRO during his visit:

Project	Description
PSLV Integration Facility (PIF)	Boosts frequency of Polar Satellite Launch Vehicle (PSLV) launches from 6 to 15 per year
	Caters to launches of Small Satellite Launch Vehicle (SSLV) and other small launch vehicles designed by private space companies.
	PSLV is a four-stage launch vehicle capable of launching satellites into Geosynchronous and Geostationary orbits
	SSLV is a 3-stage Launch Vehicle capable of launching satellites in low earth orbit at low cost
Semi-cryogenics Integrated Engine and Stage Test facility	Enables the development of semi-cryogenic engines and stages , which will increase the payload capability of present launch vehicles.
	Equipped with liquid Oxygen and kerosene supply systems to test engines up to 200 tons of thrust.

Trisonic Wind Tunnel at VSSC	Used for aerodynamic testing for characterization of rockets and aircraft during flight in the atmospheric regime.
	The Vikram Sarabhai Space Centre (VSSC) is the leading centre of the ISRO, named after Dr. Vikram A Sarabhai, the pioneer of the Indian space program. The Virtual Launch Control Centre (VLCC) at VSSC plays a crucial role in overseeing launches, and conducting system checks remotely for optimal mission performance. Top of Form

About Gaganyaan Mission:

Aspect	Description
About	The Gaganyaan mission is aimed at demonstrating ISRO’s human spaceflight capability by launching a human crew to an orbit of 400 km and safely bringing them back to Earth.
Launch Vehicle	The GSLV Mk III, also known as LVM-3 , will serve as the launch vehicle for the Gaganyaan mission. It has been reconfigured to meet human safety standards and is now called Human-Rated LVM-3 .
Astronaut Training	The astronauts selected for the Gaganyaan mission underwent training in Russia , where they will be acquainted with flying in weightless conditions.
Collaborative Endeavors	Various entities including the Indian Armed Forces, Defence Research Development Organization, Indian Meteorological Department, Indian maritime agencies, academic institutes , CSIR Labs, and industry partners are collaborating for the success of the Gaganyaan mission.
Aims & Objectives	The mission aims to demonstrate India’s capability to launch humans into low earth orbit and back safely, while also inspiring people to pursue careers in Science and Technology.
Integral Components of Spacecraft	The spacecraft comprises the Orbital Module (OM), Service Module (SM), and Crew Module (CM) . The OM orbits the Earth and consists of advanced avionics systems. The SM supports the CM while in orbit, providing necessary systems and mechanisms. The CM provides a human-friendly environment in space.
Mission Stages and Milestones	The mission involves stages such as the Integrated AirDrop Test (IADT) to test the Parachute Deceleration System, the Pad Abort Test (PAT) to check the spacecraft’s launch abort system, the Crew Abort Test Mission to simulate abort conditions, and the manned flight where a human astronaut will be launched and safely brought back to Earth.
Vyomitra	Vyomitra , a humanoid robot, will be on board the second uncrewed Gaganyaan mission to perform microgravity experiments and monitor module parameters. It simulates human functions and can detect environmental changes within the cabin.
Manned Flight	The final phase of the mission involves launching a human astronaut into space and safely returning them to Earth through a soft landing in the Arabian Sea off the coast of Gujarat . This phase is the culmination of the mission, following rigorous testing and preparation stages.

4. HARIT NAUKA INITIATIVE

Context:

PM Modi will inaugurate **India’s first green hydrogen fuel cell inland waterway vessel** as part of the **National Green Hydrogen Mission**.

What is Harit Nauka initiative?

The **Harit Nauka initiative is a program launched by the Ministry of Ports, Shipping, and Waterways** aimed at promoting the adoption of greener technologies in inland waterway vessels. It focuses on shifting inland vessels towards sustainable alternatives, such as hydrogen fuel cells, to reduce environmental impact.

This initiative aims to **establish the V.O.Chidambaranar Port as India’s first Green Hydrogen Hub Port**, with projects including a **desalination plant and hydrogen production** facility.

The **National Green Hydrogen Mission**, launched in 2023, seeks to make India a global hub for green hydrogen production, usage, and export.

5. INTERNATIONAL INTELLECTUAL PROPERTY INDEX

Context:

The **US Chamber of Commerce** released its **12th edition of the International IP (Intellectual Property) Index**, where India ranked **42 out of 55 countries** with an **overall score of 38.64%**.

- The **United States topped the list, followed by the United Kingdom and France.**
- The index assesses the **IP framework of the world's top economies**, noting 20 economies showing significant improvement.
- While **India's IP framework is strengthening**, it still lags behind the top performers.

The top 10 economies for IP rights include the **United States, United Kingdom, France, Germany, Sweden, Japan, Netherlands, Ireland, Spain, and Switzerland.**

Intellectual property (IP) is a category of property that includes **intangible creations of the human intellect**. It can include the **subject matter, methods, and tools created as part of research or studies.**

Some types of IP include:

Patents, Copyrights, Trademarks, Trade secrets, Publicity rights, Moral rights, and Rights against unfair competition.

IP is protected in **law by patents, copyright, and trademarks**. For example, a patent is an exclusive **right granted for an invention**. The patent owner can decide how or whether others can use the invention.





6. HAEMOPHILIA A

Context:

India has successfully conducted the **first human clinical trial for gene therapy targeting 'haemophilia A'.**

- The trials utilized a **novel technology involving a lentiviral vector to express an FVIII transgene in the patient's own haematopoietic stem cell**, leading to the **expression of FVIII from specific differentiated blood cells.**

Hemophilia A, also known as **classical haemophilia or factor VIII deficiency**, is a **hereditary bleeding disorder**. It's caused by a **mutation on the X-chromosome's Factor VIII gene**, which means that **only boys are affected**. In most cases, the **mutation is passed down from parent to child.**

MAIN TYPES OF HEMOPHILIA			
	Definition	Missing clotting factor	Prevalence
Hemophilia A	 Genetic bleeding disorder caused by mutations in the F8 gene	Factor VIII	<ul style="list-style-type: none"> • More common in men • 1 in every 5,000 male births
Hemophilia B	 Genetic bleeding disorder caused by mutations in the F9 gene	Factor IX	<ul style="list-style-type: none"> • More common in men • 1 in every 25,000 male births
Hemophilia C	 Genetic bleeding disorder caused by mutations in the F11 gene	Factor XI	<ul style="list-style-type: none"> • Affects men and women equally • 1 in every 100,000 people
Acquired hemophilia	 Autoimmune condition caused by the immune system's misdirected attack against clotting factors	Factor VIII in most cases	<ul style="list-style-type: none"> • Affects men and women equally; more common in older individuals • 1.5 in every million people

7. OBELISKS

Context:

A recent discovery by a team at Stanford University has unveiled a **new type of biological entity called obelisks**, found in **large numbers within the human mouth and gut.**

- These microscopic circular bits of **genetic material self-organize into a rod-like shape and contain one or two genes.**

About Obelisks:

- Obelisks are **situated somewhere between viruses and viroids**, with a **circular single-stranded RNA genome like viroids but containing genes that may code for proteins like viruses.**
- Named **obelisks due to their shape**, they are **distinct from known biological entities** and have been overlooked until now.

They are **not rare and are present in around 7% of gut microbiome datasets and 50% of mouth datasets**. Obelisks likely **rely on microbial host cells, potentially bacteria or fungi, for replication.**

8. 3 NEW MOONS DISCOVERED AROUND URANUS AND NEPTUNE

Context:

Three new moons, one around Uranus and two around Neptune, have been confirmed by the International Astronomical Union.



- Uranus' moon, S/2023 U1, is about 5 miles across making it one of the smallest known moons around any of the eight planets in the solar system, and will be named after a Shakespeare character.
- Neptune's moons, S/2002 N5 and S/2021 N1, will be named after the Nereids — the daughters of the sea god Nereus from Greek mythology.

Previously it was discovered that :

Saturn



Context: Saturn has regained its title as the planet with the most moons in the solar system. The discovery of 62 new moons brings Saturn's total to 145, surpassing Jupiter, which has 95 officially recognized moons.

	Jupiter	Saturn
		
Diameter	Largest Planet. More than twice as massive as all other planets combined	Second largest planet in the solar system
Orbital Period	11.9 Earth years	29.5 Earth years
Number of Moons	95	145
Why do they have so many moons?	Saturn and Jupiter have many moons due to their large size, gravitational influence, and the presence of debris and material in their respective regions of the solar system.	
Notable Features	Great Red Spot (giant storm), Galilean satellites (Io, Europa, Ganymede, Callisto)	Spectacular ring system with seven rings, including the moon Titan <small>Visit Insights IAS Daily CA</small>
Composition	Thick atmosphere of helium and hydrogen	
Exploration	Galileo (1989); Juno (2011); Europa Clipper (2024)	Visited by Pioneer 11, Voyagers 1 and 2, and Cassini (orbited Saturn)

9. NORTH ATLANTIC RIGHT WHALES

Context:

North Atlantic right whales, the most endangered of their species, are experiencing a decrease in size, impacting their ability to reproduce.

- A study found that smaller females had fewer calves, with body length significantly influencing the probability of giving birth.

The decline in size is attributed to stressors like climate change, reducing the availability of nutrients.

The North Atlantic right whale (Eubalaena glacialis) is a baleen whale and one of the world's most endangered large whales. They are filter feeders that primarily eat zooplankton, krill, and other small crustaceans. They use their baleen plates, which are comb-like structures in their mouths, to filter tiny organisms from the water.




10. NATIONAL ELECTRONIC FUNDS TRANSFER (NEFT)

Context:

Recently, the National Electronic Funds Transfer (NEFT) system processed a record 4.10 crore transactions, marking the highest number of transactions processed in a single day.

- The NEFT system, along with the Real Time Gross Settlement (RTGS) system, is managed by the Reserve Bank of India for settling retail and wholesale payments, respectively.
- Both NEFT and RTGS have been operating on a 24x7x365 basis.



DIFFERENCE BETWEEN NEFT, RTGS AND IMPS

BASIS OF COMPARISON	NEFT	RTGS	IMPS
Minimum transfer value	Re. 1	Rs. 2 lakh	Re. 1
Payment options	Online and offline	Online and offline	Online
Maximum transfer value	No limit	No limit	Rs.2 lakh
Settlement type	Half hourly basis	Real time	Real time
Inward transaction charges	No charges	No charges	Decided by the individual member banks and PPIs

paisabazaar

11. BHARAT TEX 2024

Context:

Bharat Tex 2024, India's largest textile event, concluded after four days of showcasing over 100 product announcements, international Memoranda of Understanding (MoUs), investment decisions, and research collaborations.

- The event attracted 3,000 buyers from over 100 countries and saw participation from over 10,000 artisans, weavers, students, factory workers, NGOs, and producer companies.

- Bharat Tex 2024 also served as a platform for launching various initiatives and projects, including Indi-aTEX and the Textile Grand Innovation Challenge, aimed at fostering innovation and sustainability in India's textile industry.

About IndiaTEX:
The project 'Accelerating the Transition of the Indian Textile Sector towards Circularity' (IndiaTex) is a four-year initiative funded by the Ministry of Foreign Affairs of Denmark and implemented in collaboration with the Government of India's Ministry of Textiles.

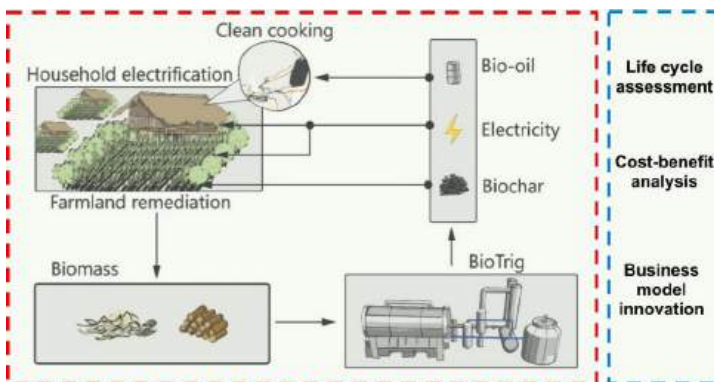
- IndiaTex aims to expedite the transition of the Indian textile sector towards circularity.
- The project, spanning from December 2023 to December 2027, will focus on working with industry stakeholders, including small and medium-sized enterprises (SMEs) and textile clusters.
- Specific objectives include supporting SMEs in calculating their Product Environmental Footprint (PEF), assisting SME brands in adopting circular business models, and collaborating with the Indian government to develop and implement circular textile policies.

12. BIOTRIG

Context:

A recent study introduces a waste management technology called 'BioTRIG,' utilizing pyrolysis at the community level in rural India.

- This process converts organic waste into useful products like bio-oil, syngas, and biochar fertilizer.
- The BioTRIG system aims to address various rural challenges, including indoor air pollution, soil degradation, and lack of reliable electricity.



13. REINTRODUCTION OF TIGERS

Context:

India and Cambodia Forge Alliance to Restore Tigers in Cambodia, drawing from India's expertise in Project Tiger.

The last record of a tiger in Cambodia was from a camera trap in 2007 and the big cats were declared "functionally extinct" in Cambodia in 2016, and are now extinct, requiring active reintroduction and reinforcement to rebuild the population.

World Tiger Day: 29th July



About Tigers (Panthera Tigris)
IUCN: Endangered
WPA: Schedule I
Cites: Appendix I
Tigers are the largest cat species and is both **flagship** and **Umbrella** species

Numbers: According to the tiger census of 2019, India has 2967 tigers, of which 526 are in Madhya Pradesh (highest).

Sub species: Traditionally eight subspecies of tigers have been recognized, out of which three are extinct— Caspian tiger, Javan tiger and Bali tiger.

Other sub species are Bengal Tigers, Amur tiger (Amur Rivers region of Russia and China, and North Korea), South China tiger, Sumatran tiger, Indo-Chinese tiger.

Largest Tiger Reserve: Nagarjunsagar Srisailem Tiger Reserve, Andhra Pradesh

Smallest: Bor tiger reserve in Maharashtra

Highest Density of Tigers: Jim Corbett National Park

To know more Visit Insights IAS Daily CA

14. SAMUDRA LAKSAMANA

Context:

India and Malaysia conducted the bilateral maritime exercise Samudra Laksamana from February 28 to March 2, 2024, in Visakhapatnam. The exercise involves the Indian Naval Ship Kiltan and the Royal Malaysian Ship KD Lekir.

Other exercises between India and Malaysia:

Exercise Harimau Shakti: This is a bilateral military exercise between the Indian Army and the Malaysian Army, aimed at enhancing cooperation and interoperability in counter-terrorism and jungle warfare.

15. STATE ENERGY EFFICIENCY INDEX (SEEI) 2023

Context:

Bureau of Energy Efficiency 22nd Foundation Day: Celebrated on March 1, 2024, the 22nd Foundation Day commemorates the establishment of the organization under the Ministry of Power, with the goal of reducing energy intensity in the Indian economy.

- The theme of the celebration is "Energy Transition through Electrification and Decarbonization in India".
- SEEI 2023 was released on this occasion

About SEEI 2023:

Aspect	Description
SEEI 2023	It assesses the performance of 36 states and UTs in Energy Efficiency (EE) implementation using 65 indicators distributed across seven demand sectors: Buildings, Industry, Municipal services, Transport, Agriculture, Distribution Companies (DIS-COM), and Cross-Sector Initiatives.

Objective	Driving decarbonization efforts in states and providing recommendations to aid states in promoting energy efficiency, contributing to the fulfilment of Sustainable Development Goals (SDGs) and Nationally Determined Contributions (NDC).
Developed by	Bureau of Energy Efficiency (BEE) in collaboration with the Alliance for an Energy-Efficient Economy (AEEE). Assesses the annual progress of states and Union Territories (UTs) in implementing energy efficiency measures
Front Runner Category	States scoring greater than 60 points: <u>Karnataka</u> (the only state with an active "Energy Conservation and Energy Efficiency Policy") followed by Andhra Pradesh.
Achiever Category	States scoring between 50-60 points in the index. 15 states improved scores compared to SEEI 2021- 22 with Maharashtra and Haryana showing the most improvement.
About BEE	The Bureau of Energy Efficiency (BEE) was established in 2002 under the Energy Conservation Act, 2001, and is headquartered in New Delhi. It assists in formulating policies and strategies focusing on self-regulation and market principles. The Energy Conservation Act assigns regulatory and promotional roles to BEE.

16. WORLD POVERTY CLOCK

Context:

India has made significant progress in **reducing extreme poverty, with less than 3% of its population** now living below the poverty line, according to the latest data from **the World Poverty Clock**.

- This achievement aligns with the **United Nations' Sustainable Development Goal (SDG) of ending extreme poverty by 2030**.
- The **World Poverty Clock monitors progress against ending extreme poverty**, funded by organizations like IFAD and the Federal Ministry for Economic Cooperation and Development of Germany.

Key Findings:

- It calculates **poverty rates based on income levels, with the poverty line set at \$2.15 a day**.
- As a result, the **number of people living in extreme poverty in India has decreased to approximately 3.44 crore in 2024 from 4.69 crore in 2022**, representing a decline **to 2.4% of the total population**.
- Additionally, a recent **NITI Aayog discussion paper highlights the decline in multidimensional poverty in India, from 29.17% in 2013-14 to 11.28% in 2022-23**.

The **international poverty line of \$2.15 a day is used to measure progress towards the World Bank's target of reducing extreme poverty to less than 3% by 2030**, while SDG target 1.1 aims for zero poverty by 2030.

17. WTO BACKS REMITTANCE COST CUT

Context: India's proposal to **reduce the cost of cross-border remittances** has **received support from many World Trade Organization (WTO) members, except the US**.

- The initiative aims **to lower remittance costs to less than 3 per cent**, in line with UN Sustainable Development Goals.
- Lower costs could **boost remittance inflows, reduce reliance on informal channels, and benefit Indian businesses**, especially the Unified Payments Interface (UPI) for global expansion.
- India received **\$125 billion in remittances in 2023**, with associated costs **reaching \$7-8 billion**.
- Lowering remittance costs will **benefit the Indian diaspora, and MSMEs, and increase competitiveness in export**.

Remittance refers to the **transfer of money or funds from one individual or entity to another, typically across borders or from one country to another**. Remittances are **often sent by migrants who are working abroad to their families or relatives in their home countries**.

18. NATIONAL URBAN CO-OPERATIVE FINANCE AND DEVELOPMENT CORPORATION LIMITED

Context:

The Home Minister launched the **National Urban Co-operative Finance and Development Corporation Limited (NUCFDC)**, serving as the **umbrella organization for Urban Co-operative Banks (UCBs)**.

- The initiative aims to **modernize and strengthen the UCB sector, benefiting both banks and customers**.

The **National Urban Co-operative Finance and Development Corporation (NUCFDC)** was established based on the recommendation of the **Vishwanathan Committee on Primary (Urban) Co-operative Banks**, formed by the Reserve Bank of India (RBI)

NUCFDC is registered with the **RBI as a non-deposit-taking Non-Banking Financial Company (NBFC)**, and UCBs can **voluntarily subscribe to its capital**

The key objectives of NUCFDC include **expanding the number of credit societies and UCBs, facilitating dialogue between banks and regulators, providing liquidity to UCBs, establishing IT infrastructure for shared use by members to enhance service offerings, and more**.

19. SWACHHATA GREEN LEAF RATING INITIATIVE

Context:

The **Swachhata Green Leaf Rating (SGLR) initiative**, launched by **the Department of Drinking Water & Sanitation in collaboration with the Ministry of Tourism**, aims to **elevate hygiene and sanitation standards** in India's tourism industry.

- **Bison Resorts in Madhai, Madhya Pradesh**, received the **first Five Swachhata Green Leaf Rating Certificate**, setting a benchmark for responsible tourism practices.

The SGLR program aligns with the **Travel for LiFE program**, **aiming to foster sustainable tourism practices for economic viability and environmental resilience**.

20. APP DELISTING

Context:

The Indian government, strongly opposes **Google's recent delisting of Indian apps from its Play Store due to a dispute over service fee payments**.

- The government emphasizes the **importance of protecting the Indian start-up ecosystem and asserts that their fate cannot be determined solely by big tech companies** like Google.

IAMAI (Internet and Mobile Association of India), an industry association, condemned app removals, raising **digital monopoly** concerns. Recommendations from the Standing Committee on Finance include categorizing leading digital market players as Systemically Important Digital Intermediaries (SIDIs) and **enacting the Digital Competition Act**.

Measures suggested to address digital monopolies include:

1. Strengthening the **Competition Commission of India (CCI)**
2. Implementing **Consumer Protection (E-Commerce) Rules, 2020**
3. Enforcing the **Digital Personal Data Protection Act, 2023**, for data privacy and security

App delisting refers to the **removal or exclusion of an application (app) from an online platform** or marketplace **where it was previously available for download or purchase**.

This action is **typically taken by the platform operator, such as Google Play Store or Apple App Store, for various reasons**, including violations of **platform policies, legal issues, or disputes between the platform and the app developer**.

When an app is delisted, it becomes **inaccessible for users to download or use through the platform, and it may also lose visibility and exposure to potential users**.

21. STATUS OF LEOPARDS IN INDIA

Context:

The report on the **Status of Leopards in India was recently released by the Union Minister for Environment, Forest and Climate Change**.

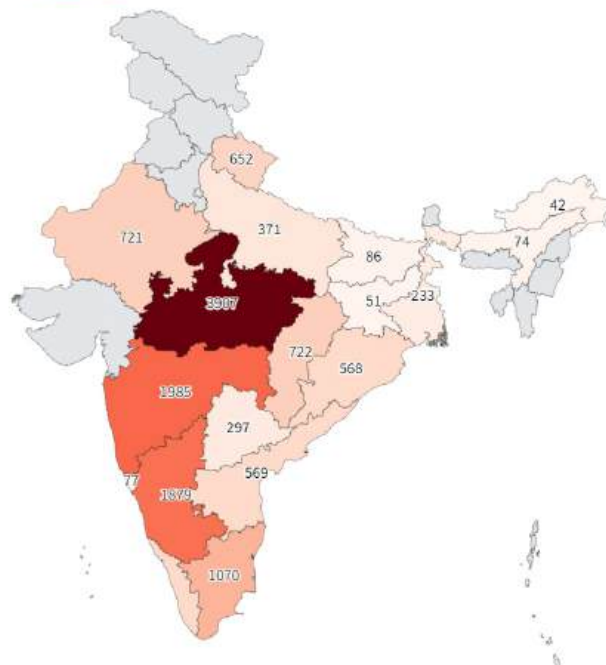
The fifth cycle leopard population estimation, conducted by the **National Tiger Conservation Authority** and Wildlife Institute of India, revealed key findings:

1. **Overall population:** India's leopard population increased by **8%** from 12,852 in 2018 to 13,874 in 2022.
2. **Regional variation:** Central India's leopard population remains stable or slightly growing, while the Shivalik hills and Gangetic plains experienced a decline.
3. **State-level distribution:** **Madhya Pradesh** has the highest number of leopards (3,907), followed by Maharashtra, Karnataka, and Tamil Nadu.
4. **Benefits From Tiger Conservation Efforts:** The Central India and Eastern Ghats landscape, home to the largest leopard population, is benefiting from tiger conservation efforts.
5. **Common Threats:** Threats include poaching, habitat loss due to human activities, and road accidents.

Leopard count in states

The estimated leopard population in 2022 is 13,874

0 3907



About IBCA:

The **International Big Cat Alliance (IBCA)** is a **coalition of 97 countries (HQ: India)**, conservation partners, and scientific organizations dedicated to conserving big cat species and their habitats.

- Last year, the government, marking the **50th anniversary of Project Tiger**, announced the establishment of the **IBCA**.

22. E-KISAN UPAJ NIDHI



About International Big Cat Alliance (IBCA)

Purpose	Description
Purpose	Protection and conservation of the 7 major big cats- tiger, lion, leopard, snow leopard, puma, jaguar and cheetah
Member countries	97 range countries and other interested nations and organs.
Activities	Advocacy, partnerships, knowledge portal, capacity building, eco-tourism, expert groups and finance tapping
Governance structure	General Assembly, Council, and Secretariat
Funding	\$100 million grant assistance by India for the first 5 years; later through membership fees, contributions from bilateral and multilateral institutions, and the private sector
Previous initiatives	India had in 2019 called for an Alliance of Global Leaders to curb poaching and illegal wildlife trade in Asia.
Importance of saving the tiger	India is the only country in the world to have 5 big cats in wild (all except pumas and Jaguars). Big cats are umbrella and flagship species whose loss can set off a "trophic cascade," (prey populations may explode, resulting in overgrazing and degrading the health of the landscape). India is home to 75% of global tigers. Visit Insights IAS Daily Current Affairs

Context:

Union Minister for Consumer Affairs, Food & Public Distribution launched the '**e-Kisan Upaj Nidhi**' initiative, aiming to **ease warehousing logistics for farmers and ensure fair prices for their produce.**

- The initiative will **reduce security deposit charges at WDRA-registered warehouses from 3% to 1%, encouraging small farmers to utilize them.**
- The platform can **prevent distress sales by farmers, offering improved post-harvest storage opportunities.**
- The initiative facilitates **simplified digital processes for farmers to store produce at WDRA warehouses for six months at 7% interest per annum.**

23. DRY ICE

Context:

The Gurugram Police arrested the manager of an eatery that **served dry ice instead of mouth freshener**, resulting in their **hospitalization with severe corrosive injuries to the oral cavity and food pipe.**

Dry ice is solid carbon dioxide (CO₂) formed by **compressing and cooling carbon dioxide gas**. Unlike regular ice, **which melts into liquid water, dry ice undergoes sublimation, transitioning directly from a solid to a gas without passing through a liquid phase.**

This sublimation process **releases large volumes of CO₂ gas, making dry ice useful for applications such as cooling, preservation, and creating special effects like fog or smoke.**

However, dry ice can be hazardous if mishandled or ingested. When in contact with moisture in the **mouth or digestive tract, dry ice sublimates rapidly, releasing CO₂ gas and potentially causing serious internal injuries, such as burns, bloating, vomiting,** and even life-threatening complications like stomach or intestinal perforation.

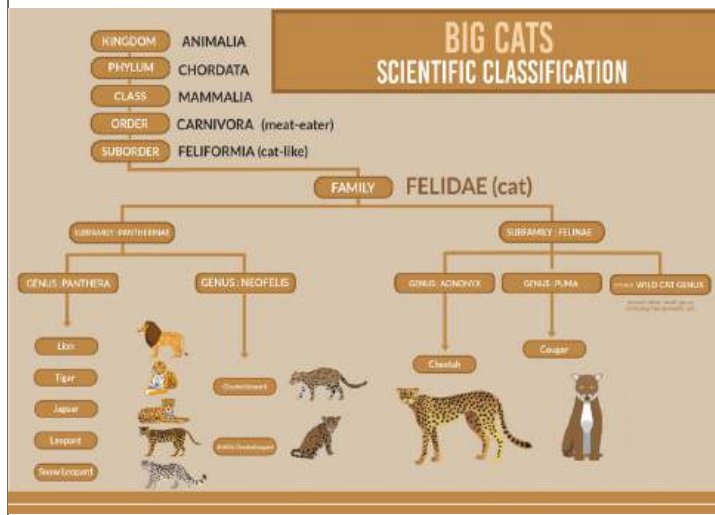
Dry Ice Safety

Anyone can take advantage of the many benefits of dry ice, but there are several safety techniques to keep in mind:

- Wear heavy gloves before handling dry ice, as it can cause frostbite if it's touched directly.
- While it's safe to use dry ice near food, it should never be ingested, as it can cause internal frostbite.
- Only use dry ice in well-ventilated areas and don't let the concentration of carbon dioxide in the air reach 5% or higher.

About Leopard:

The leopard (IUCN: Vulnerable; CITES Appendix-I; Schedule-I in WPA), **scientifically known as Panthera pardus**, is the **smallest member of the Big Cat family** and is **highly adaptable** to various habitats. It is **nocturnal and preys on smaller herbivores like chital and wild boar**. **Melanism**, resulting in black skin and spots, is common but often mistaken for a different species called the black panther. Leopards inhabit a wide range **from Africa to Asia**, including the Indian sub-continent.



Prelims Links:

Q. Consider the following: (UPSC 2012)

1. Black-necked crane
2. Cheetah
3. Flying squirrel
4. Snow leopard

Which of the above are naturally found in India?

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

Ans: B

24. INDIA'S 1ST GREEN HYDROGEN STEEL PLANT

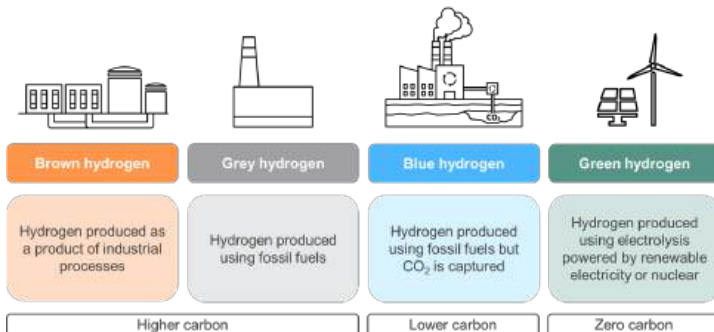
Context:

The Union Minister of Steel inaugurated **India's 1st Green Hydrogen Plant in the Stainless Steel Sector**, located at **Jindal Stainless Limited, Hisar**.

It is the **world's first off-grid Green Hydrogen plant** for the stainless steel industry and features rooftop & floating solar. The initiative underscores India's commitment to green growth and job creation, driving towards the target of **net zero carbon emissions by 2070**.

Related Government Initiatives include:

- Steel Scrap Recycling Policy, 2019:** Enhances availability of domestically generated scrap to reduce coal consumption in steel making.
- National Green Hydrogen Mission:** Ministry of New and Renewable Energy (MNRE). Aims to make **India a Global Hub** for the production, usage and export of Green Hydrogen and its derivatives
- Motor Vehicles (Registration and Functions of Vehicles Scrapping Facility) Rules September 2021:** Increases availability of scrap in the steel sector.
- NEDO Model Projects:** Japan's New Energy and Industrial Technology Development Organization (NEDO) projects for energy efficiency improvement in steel plants.



25. INDIA'S FIRST INDIGENOUS FAST BREEDER REACTOR

Context:

PM witnessed **core loading at India's first indigenous Fast Breeder Reactor** at Kalpakkam, Tamil Nadu.

- This reactor, developed by BHAVINI**, marks a significant step in India's nuclear capabilities.

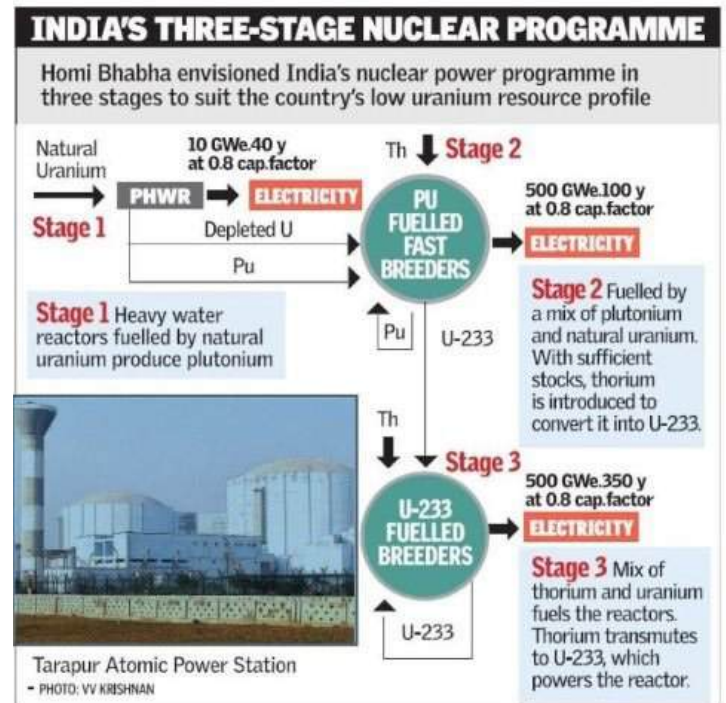
What is Core Loading?

Core loading is the **process of placing nuclear fuel assemblies into the core of a nuclear reactor**. This fuel **comprises enriched uranium or plutonium pellets** housed in metal tubes **called fuel rods**. Core loading is a **critical step in initiating the reactor's operation**

What is FBR?

A **Fast Breeder Reactor (FBR)** is a **type of nuclear reactor** that uses **fast neutrons** to cause the **fission of uranium-238** (unlike conventional nuclear reactors that use slow neutrons). The **term "breeder" refers** to the ability of these reactors to produce more fissile material (Plutonium-239) than they consume.

FBR is the key to **India's three-stage nuclear power programme**. Prototype Fast Breeder Reactor (PFBR) is capable of reprocessing both carbide and oxide fuels discharged from the fast reactors. Once commissioned, **India will only be the second country after Russia** to have commercial operating FBR. It initially employs **Uranium-Plutonium Mixed Oxide (MOX)** fuel and **liquid sodium coolant**. It is set to be **operational by December 2024**. By producing more plutonium than the fuel it consumes, PFBR reduces nuclear waste and is relatively safer than conventional reactors.



About

BHAVINI:

Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) is a **government company under the Department of Atomic Energy (DAE)**. Established in **2003**, its primary goal is to construct and operate Fast Breeder Reactors (FBRs) for electricity generation. BHAVINI has built the **500 MWe Prototype Fast Breeder Reactor (PFBR)** at Kalpakkam, representing India's energy security future with technology from the **Indira Gandhi Center for Atomic Research (IGCAR)**.

26. NATIONAL DOLPHIN RESEARCH CENTRE

Context: The **National Dolphin Research Centre (NDRC)**, India's first dolphin research facility, was **inaugurated in Pat-**

na by Bihar.

- The centre aims **to study Gangetic dolphins and understand the river ecosystem**. It is located on the **Ganges within the Patna University campus**.

Protection Status of Gangetic Dolphins:

1. International Union for the Conservation of Nature (IUCN): Endangered
2. Indian Wildlife (Protection) Act 1972: Schedule I
3. Convention on International Trade in Endangered Species (CITES): Appendix I
4. Convention on Migratory Species (CMS): Appendix 1

27. INTEROPERABLE PAYMENT SYSTEM

Context:

The Reserve Bank of India (RBI) plans to launch an **interoperable payment system for internet banking in 2024**.

- This system, expected to be launched in the current calendar year, **aims to expedite fund settlements for merchants and enhance online transactions**.
- The interoperable system will be implemented by **NPCI Bharat BillPay Ltd (NBBL)**, a subsidiary of the **National Payments Corporation of India (NPCI)**, following **RBI approval**.
- It will **enable customers to make net banking payments to businesses regardless of whether their banks and the merchants' payment aggregators are integrated**.

Currently, **online merchant transactions rely on non-interoperable payment aggregators**, requiring separate integration with each aggregator, **leading to delays and settlement risks**.

Interoperability is the **basic ability of multiple digital systems, applications and databases to connect and communicate with each other**.

Payment platforms leverage **financial technology to connect and share data** among ecosystem partners like **banks, payment gateways, payment processors, merchants and consumers**.

28. CITY-SPECIFIC ZERO CARBON PLAN

Context: Nagpur has initiated **India's first city-specific Zero Carbon Buildings Action Plan (ZCBAP)**, aiming to **achieve net-zero carbon emissions from buildings by 2050**.

- The plan covers **public buildings, affordable housing, commercial buildings, and homes**, focusing on decarbonization and sustainable development.
- Developed by **Nagpur Municipal Corporation (NMC) and Nagpur Smart and Sustainable City Development Corporation Limited (NSSCDCL)**, with support from international partners, **the ZCBAP aligns with India's climate goals and global commitments**.
- It addresses **GHG emissions reduction through building materials, design, construction, management, and deconstruction**, targeting a significant

portion of Nagpur's energy consumption and emissions.

29. METHANESAT

Context:

MethaneSAT, launched aboard a **SpaceX Falcon9 rocket**, is a satellite designed to **track and measure methane emissions globally**.

- MethaneSAT aims to **monitor the oil and gas sector**, providing data on **emission sources, trends, and changes over time**.

About MethaneSAT:

- Developed by the **Environmental Defense Fund (EDF)** in partnership with **Harvard University**, the **Smithsonian Astrophysical Observatory**, and the **New Zealand Space Agency**, **MethaneSAT will orbit the Earth 15 times a day, collecting data that will be made publicly available in near real-time**.
- Equipped with advanced technology, **including a high-resolution infrared sensor and spectrometer**, MethaneSAT can **detect methane concentrations as small as three parts per billion and identify both large and small emitters**.

Methane is a **colourless, odourless, flammable gas** that's the **main component of natural gas**. It's also a **greenhouse gas (GHG) that affects the Earth's climate system**.

30. INS JATAYU (LAKSHADWEEP)

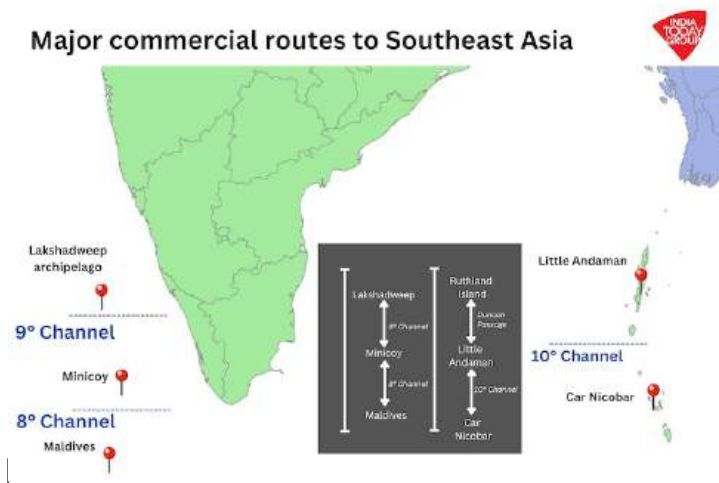
Context:

INS Jatayu, **India's new naval base on Minicoy Island in Lakshadweep**, signifies a crucial step in bolstering security infrastructure in the strategic archipelago. It is the second naval base in Lakshadweep. Situated in a strategically important location, the base strengthens India's operational capability in the region, aiding anti-piracy and anti-narcotics operations in the western Arabian Sea.

About Lakshadweep

It is an **archipelago consisting of 36 islands** (divided into three subgroups: Laccadive Islands, Amindivi Islands, and Minicoy), **including 12 atolls, three reefs, and five submerged banks**. Situated between the **Arabian Sea and the Laccadive Sea**, the islands are located approximately **220–440 km off the Malabar Coast** of mainland India. Divided into three subgroups, the islands cover a total land area of about 32 km², with a coastline of 132 km and a lagoon area of 4,200 km². The territory, forming part of the **Lakshadweep–Maldives–Chagos group of islands**, sits atop the **Chagos-Lakshadweep Ridge**, a vast undersea mountain range. The islands' formation is attributed to the subsidence of volcanic islands, resulting in the growth of **fringing reefs**.

Major commercial routes to Southeast Asia



31. UDGAM PORTAL

What is the UDGAM portal?

Developed by RBI, it stands for **Unclaimed Deposits-Gateway to Access inforMation**. It serves as a **centralized platform for the public to search for unclaimed deposits across multiple banks**.

The portal allows users to search for various types of accounts covered by the **Depositor Education and Awareness (DEA) Fund of RBI**. Users are required to register on the portal and provide specific inputs depending on whether they are searching for individual or non-individual accounts. While the portal facilitates the search for unclaimed deposits, **it does not enable users to settle or claim these deposits directly**; claims must be made directly with the respective bank.

As of March 4, 2024, **30 banks are part of the UDGAM portal, covering approximately 90% of unclaimed deposits in the DEA Fund**. Each unclaimed deposit is assigned a **unique Unclaimed Deposit Reference Number (UDRN)** generated by banks, ensuring seamless settlement of claims.

32. KOLKATA UNDERWATER CORRIDOR

Context:

The Prime Minister inaugurated the **Howrah Maidan-Esplanade section of Kolkata Metro's East-West corridor**, marking India's **debut into underwater metro services**.

- The **underwater tunnel, spanning 520 meters beneath the Hooghly River**, will facilitate swift travel.
- Key points about the metro project include its **status as India's first transportation tunnel beneath a river, boasting the country's deepest metro station, Howrah Metro station**.
- The tunnel, **akin to Eurostar's London-Paris corridor**, lies **13 meters below the riverbed and 33 meters below ground level**.

33. PENICILLIN G

Context:

India is set to **restart the manufacturing of the common antibiotic Penicillin G** after three decades, with **Hyderabad-based Aurobindo Pharma** leading the initiative.

- The **halt in Penicillin manufacturing in India during the '90s was primarily due to cheaper Chinese products** flooding the market, rendering Indian production unviable.

About Penicillin G:

Benzylpenicillin (Penicillin G) is a **narrow-spectrum antibiotic** used to **treat infections caused by susceptible bacteria**. It is a **natural penicillin antibiotic** that is **administered intravenously or intramuscularly** due to poor oral absorption.

The government's **Production Linked Incentive (PLI) scheme**, launched during the pandemic to **promote domestic manufacturing**, has played a **crucial role in restarting production by offering incentives to companies on incremental sales**.

An **active pharmaceutical ingredient (API)** is the main **ingredient in a medicine that causes the desired effect**.

34. FRONTIER TECHNOLOGY LABS

Context:

Atal Innovation Mission (AIM) and Meta have collaborated to launch **Frontier Technology Labs (FTLs)** in schools across India, aiming to **democratize access to future technologies and empower youth to innovate**.

- These labs, an **advanced version of Atal Tinkering Labs (ATLs)**, will provide **state-of-the-art infrastructure for students** to engage with technologies like **Artificial Intelligence, Augmented & Virtual Reality, Blockchain, Cybersecurity, Robotics, 3D Printing, and the Internet of Things**.
- Through workshops, interactive sessions, and project-based learning, **students will learn to use AI tools effectively, explore AR & VR, and address cybersecurity challenges**.

The initiative aligns with AIM's vision to **foster a culture of innovation and entrepreneurship in schools**. These labs will be managed by Meta's partner **1M1B (One Million for One Billion)**.

35. PINE NEEDLES-BASED FUEL-MAKING TECHNOLOGY

Context:

CSIR-Indian Institute of Petroleum (IIP) and UCOST have signed a Memorandum of Understanding (MoU) under the **"Adarsh Champawat" mission**.

- The MoU aims to **deploy technology for producing fuel from pine needles**.
- The technology involves, **Briquetting, the process of**

converting biomass residues into a fuel. Briquetting uses **compaction methods for the densification of waste materials and converts them into fuel.**



About Pine Trees:

Pine trees are **evergreen, coniferous trees or shrubs that can grow up to 260 feet tall.** They are native to northern temperate regions but are found all over the world. Pines are a **key part of taiga, coniferous, and mixed forests.**

36. CYCAS CIRCINALIS

Context:

Cycas circinalis, also known as Eenthu Pana in Kerala, is facing extinction in northern Kerala due to an unknown and fast-spreading plant disease.

- These trees, known for their **medicinal and nutritional properties**, are dying out **without a focused research and action plan.**

Cycas circinalis, also known as **the queen sago or sago palm**, is a species of **cycad native to southern India and Sri Lanka.** It is an **evergreen shrub that can grow up to 6 meters tall and can tolerate full sun or shade.** It is found in **dense, dry, scrubby woodlands** in hilly areas in the states of Kerala, Karnataka, Tamil Nadu, and the south of Maharashtra



37. UNCOVER PROGRAM

Context:

Recent research (under **JSWT’s UNCOVER Program**), utilizing a massive galaxy cluster as a magnifying glass, suggests that small, faint dwarf galaxies likely produced enough ionising light to end the Dark Ages, contradicting previous theories favouring larger galaxies or exotic objects like black holes.

About 400,000 years post Big Bang, the universe was dark with dense hydrogen gas. Over time, **gravity formed clumps that eventually ignited the first stars.** Their light initially struggled to escape the gas fog but eventually cleared it, marking the “epoch of reionisation.”

Observations from the **James Webb Space Telescope** confirmed that these faint galaxies emitted **significantly more ionising light** than expected, suggesting they played a substantial role in the reionisation epoch.

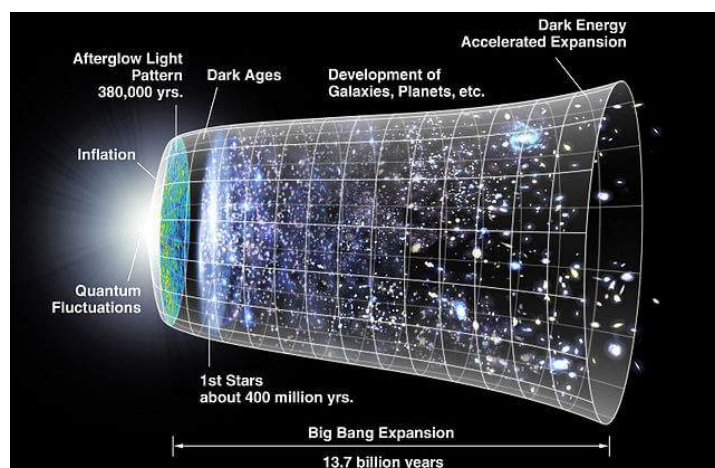
What is the Uncover program?

The UNCOVER program is part of the **James Webb Space Telescope (JWST) initiative** aimed at uncovering insights about the early universe. Specifically, UNCOVER, which stands for **Ultra-deep NIRCam and NIRSpec Observations Before the Epoch of Reionization**, focuses on two main goals:

1. Identifying first-light galaxies **during the Dark Ages**
2. Studying ultra-low luminosity galaxies responsible for the **epoch of reionization.**

What is the Dark Ages in the Universe?

The “Dark Ages” in the universe refers to a period about **400,000 years** after the Big Bang when the cosmos was largely dark. During this time, the universe was filled with dense hydrogen gas, with no sources of light. This period ended with the **emergence of the first stars**, which slowly ignited and began emitting light, eventually leading to the “**epoch of reionization**” as more stars formed and their light cleared away the hydrogen gas, creating the transparent universe we observe today.



38. INDIAAI MISSION

Context:

The Union Cabinet has **approved the IndiaAI Mission** for the next five years, focusing on **bolstering Artificial Intelligence (AI) innovation**.

About IndiaAI Mission	Description
	The IndiaAI Mission is a strategic initiative that aims to catalyze AI innovation, democratize computing access, provide startup capital, ensure ethical AI, and drive inclusive growth in India’s AI ecosystem.
Purpose	Address the shortage of computing hardware in unlocking opportunities around generative AI by subsidizing private companies to establish AI computing capacity in India
	To establish a comprehensive ecosystem that catalyzes AI innovation through strategic programs and partnerships across the public and private sectors.
	Drive responsible, inclusive growth of India’s AI ecosystem
	Create highly skilled employment opportunities to harness the demographic dividend
	Demonstrate the potential of transformative technology for societal good .
Implementation	Led by the ‘IndiaAI’ Independent Business Division under Digital India Corporation .
Funding	Approved with an outlay of Rs 10,372 crore for the next five years
Components	IndiaAI Compute Capacity: One-stop solution for critical resources required for AI innovation.
	Under this, the government will establish a computing capacity of more than 10,000 GPUs and develop foundational models with a capacity of more than 100 billion parameters trained on datasets covering major Indian languages for priority sectors like healthcare, agriculture, and governance
	IndiaAI Innovation Centre: Focuses on developing and deploying indigenous Large Multimodal Models (LMMs).
	IndiaAI Datasets Platform: Offers seamless access to non-personal datasets for Indian startups and researchers.
	IndiaAI Application Development Initiative: Concentrates on adopting impactful AI solutions for large-scale socio-economic transformation
	IndiaAI FutureSkills: Aims to mitigate barriers to entry into AI programs
	IndiaAI Startup Financing: Supports and accelerates deep-tech AI startups by providing funding
	Safe & Trusted AI: Facilitates the implementation of Responsible AI projects.
What is AI?	Artificial Intelligence (AI) refers to the capability of computers or robots to perform tasks typically requiring human intelligence and judgment . While AI systems may not replicate the full range of human abilities, they can excel in specific tasks.
	Machine Learning (ML) is a subset of AI, and Deep Learning (DL) techniques enable automatic learning from large volumes of unstructured data like text, images, or video.
Other Government Schemes for AI	INDIAai; Global Partnership on Artificial Intelligence (GPAI); US India Artificial Intelligence Initiative; Responsible Artificial Intelligence (AI) for Youth; Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform.

39. NATIONAL CREATORS AWARD

Context: The Prime Minister presented the **inaugural National Creators Award**, celebrating the **talent and impact of content creators in various fields**.

- The award ceremony, honoured **winners across storytelling, social change advocacy, education, gaming, and other domains**.

The creator economy is a **modern economic landscape** where **content creators can use digital platforms** to produce and distribute content. It’s also known as **the influencer economy**.

In the creator economy, **creators can monetize their content through:**

Advertising, Sponsorships, Subscriptions, Merchandise sales, Crowdfunding, Brand deals, Ad share revenue, Affiliate

links, Monetary tips, and Courses.

The creator economy involves **creators, audiences, digital platforms, marketers, and agencies**. It's centred around social media channels where users and creators interact to form online communities.

40. 'MEASLES AND RUBELLA CHAMPION' AWARD

Context:

India has been honoured with the **prestigious Measles and Rubella Champion Award** by **The Measles and Rubella Partnership** at the **American Red Cross Headquarters** in **Washington D.C., USA**.

- The partnership, comprising various organizations dedicated to **reducing global measles deaths and preventing rubella illness**, applauds India's commitment to **public health and leadership in controlling these infectious diseases, particularly among children**.

Measles is a **highly contagious disease** that can **cause death in young children**. It can cause **brain damage, deafness, and blindness**. The **measles-mumps-rubella (MMR) vaccine** is safe and highly effective in **preventing rubella**. The WHO recommends **two doses of the measles vaccine to ensure immunity and prevent outbreaks**.

Rubella is a **contagious viral infection that can cause birth defects**. It's also known as **German measles or three-day measles**. Rubella is **not as infectious or as severe as measles**. It's caused by the **rubella virus and spreads when people breathe in virus-infected fluid or direct contact** with nasal or throat secretions of infected individuals.

41. CHIPIN CENTRE

Context:

The ChipIN Centre, a hub for chip designers in India, received a boost from leading semiconductor industry players, **aiming to empower the semiconductor design community in the country**.

- The centre offers **state-of-the-art Electronic Design Automation (EDA) tools** to students at various academic levels.

These initiatives aim to realize **India's vision of becoming a semiconductor hub by fostering chip design innovation and entrepreneurship**.

A **semiconductor** chip, also known as an **integrated circuit (IC) or microchip**, is a small electronic device that contains **multiple interconnected electronic components**.

Semiconductor chips are made up of **electronic components such as transistors, resistors, and capacitors**. These components are etched onto a **small piece of semiconductor material, usually silicon**. Semiconductors are tiny electrical

switches that act like electrical currents on or off.

42. PARASITOID WASP

Context:

Entomologists from the **Ashoka Trust for Research in Ecology and the Environment (ATREE)** have discovered a **new species of parasitoid wasp** in the **Western Ghats region of Karnataka**.

- Named **Taeniogonalos deepaki**, it was discovered in the Belgaum region and named after the **medical doctor and nature enthusiast Deepak Deshpande**, who collected the specimen.



Parasitoid wasps are a group of insects **that lay their eggs inside other insects to complete their life cycle**.

Parasitoid wasps are important **biological control methods for gardeners**. They are useful in **controlling both native pests and invasive species**. They feed on the **eggs, larvae, and sometimes pupae of many insects**, including aphids, caterpillars, and other honeydew-producing sucking insects.

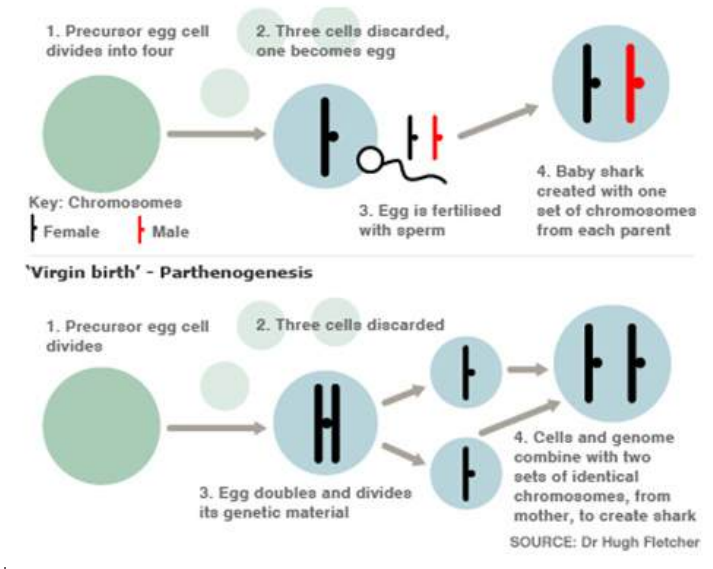
43. PARTHENOGENESIS

Context: Researchers genetically modified the **Drosophila melanogaster fruit fly**, typically a sexually reproducing species, to reproduce asexually.

- They identified **44 genes in another fruit fly species, Drosophila mercatorum, responsible for parthenogenesis** and modified the **D. melanogaster genome to express these genes**, resulting in **1.4% of eggs being parthenogenetic**.

This breakthrough **could influence pest control strategies** by releasing **males sterilized by irradiation or edited genomes to reduce progeny numbers**, although it may inadvertently select for facultatively parthenogenetic individuals, limiting long-term effectiveness.

Parthenogenesis is a form of **asexual reproduction where an embryo develops from an unfertilized egg cell**.



44. PARROT FEVER

Context:

Parrot fever, also known as **psittacosis**, is a respiratory bacterial infection caused by the bacterium *Chlamydia psittaci*.

- The infection primarily **affects birds, such as parrots, pigeons, and poultry**, but can be **transmitted to humans through inhaling particles from bird feathers or droppings**.
- Symptoms include **fever, headache, chills, muscle pains, coughing, difficulty breathing, and gastrointestinal symptoms**.
- Treatment involves **antibiotics, such as doxycycline or tetracycline, along with supportive care and symptomatic relief**.
- Prevention includes **proper hygiene practices, such as handwashing and avoiding close contact with sick birds**.

45. IP/MPLS ROUTER

Context:

India has launched **its fastest and indigenously designed IP/MPLS (Multiprotocol Label Switching) router**.

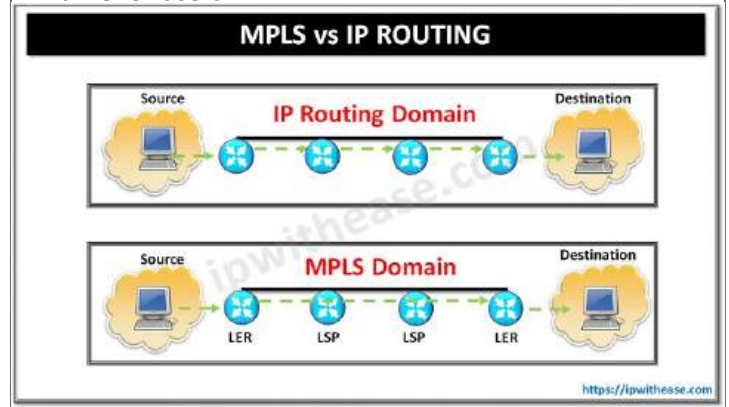
- MPLS is a **routing technique in telecommunications networks** that directs data based on **labels rather than network addresses**.

With a **capacity of 2.4 Terabits per second (TBPS)**, this secure core router represents a **significant achievement for India**, showcasing the **country's technological innovation and self-reliance**

About IP/MPLS Router System:

- **IP MPLS, or Internet Protocol Multi-Protocol Label Switching**, is a routing system that **enables rapid data switching between nodes based on labels rather than destination addresses**, reducing processing time.
- It **improves traffic speed by assigning labels to data packets**, allowing for **end-to-end circuits across different transport mediums and protocols**.

- MPLS is not a protocol itself but a **protocol-independent solution that enhances network connectivity and scalability**.
- Unlike traditional IP routing, **MPLS switches traffic based on predetermined paths known as label switch paths**, optimizing network performance and reducing downtime for users.

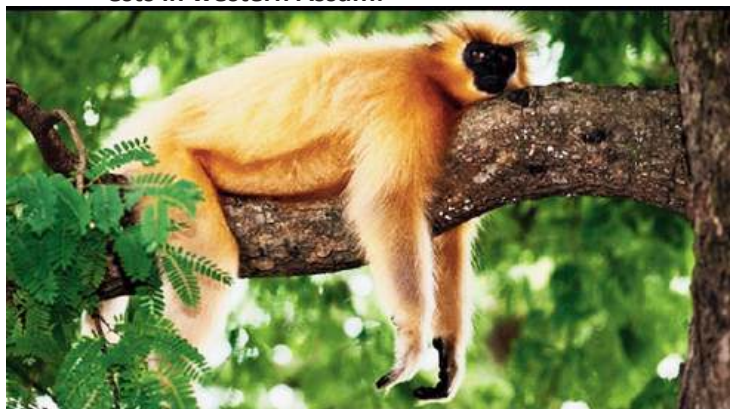


46. GOLDEN LANGUR

Context:

The latest survey estimates that there are **approximately 7,396 golden langurs in India**.

- The survey was carried out in two phases, **covering the Manas Biosphere Reserve and fragmented forests in western Assam**.



The **golden langur (Trachypithecus geei)** is a small, arboreal primate that lives in the trees of **northeastern India and southern Bhutan**. It is also known as the **golden leaf monkey**.

Golden langurs are **endangered (IUCN)** and listed in **Appendix I of CITES**.

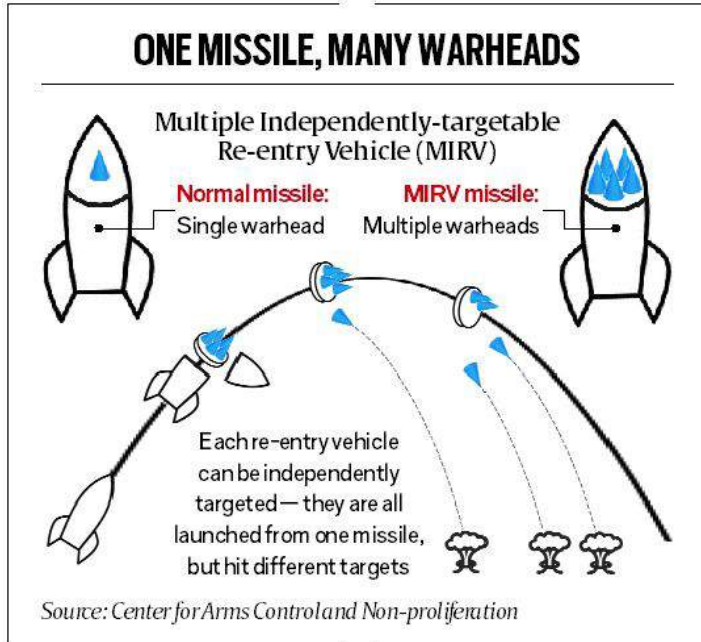
Their habitat is restricted to the region surrounded by four geographical landmarks: the foothills of **Bhutan (North)**, **Manas River (East)**, **Sankosh River (West)**, and **Brahmaputra River (South)**

47. MISSION DIVYASTRA - AGNI-5 BALLISTIC MISSILE

Context: India successfully tested a **new version of the Agni-5 ballistic missile** capable of **carrying multiple warheads**, each capable of **striking separate targets, enhancing the**

country's nuclear strike capability.

- The Agni-5, **developed indigenously by DRDO**, has a range of over 5,000 km and uses **MIRV (Multiple Independently Targetable Re-entry Vehicle) technology**.
- MIRV-equipped missiles can target multiple locations, significantly boosting India's strategic deterrence against adversaries like China.
- The **United States, Russia, China, the United Kingdom and France** already possess MIRV Technology



48. YAOUNDE DECLARATION

Context:

The Yaounde Declaration **marks a significant commitment by 11 African countries to end malaria deaths**, acknowledging the urgent need for action given the alarming rise in cases.

These countries, including **Burkina Faso, Cameroon, Ghana, Nigeria, and Uganda**, collectively bear the highest burden of malaria infections and deaths globally. The declaration emphasizes the importance of **addressing root causes such as changing vector behaviour, improving access to health services, and combating insecticide and drug resistance**.

The Yaounde Declaration includes a **commitment by African countries to allocate 15 per cent of annual budgets** for the health sector. It aligns with the **WHO's "High burden to high impact" approach**, which is built on four pillars:

1. political will to reduce malaria deaths
2. strategic information to drive impact
3. better guidance, policies, and strategies
4. coordinated national malaria response

49. IRDAI NEW REGULATION

Context:

The Insurance Regulatory and Development Authority of India (IRDAI) exercising powers under the **Insurance Act, 1938 and IRDA Act, 1999**, has framed regulations (IRDAI (Protection of Policyholders' Interests and Allied Matters of Insurers) Regulations, 2024) consolidating **8 separate regulations into a unified framework**.

The main objective: It is to **protect the interests of policyholders** and ensure insurers and distribution channels fulfil their obligations.

Key measures include A **30-day free-look period** for policy returns, compulsory nominee information collection for life insurance, electronic policy offerings with data privacy safeguards, prevention of mis-selling and unfair practices, and **establishment of grievance redressal systems** in insurer offices.

About IRDAI:

IRDAI (HQ: Hyderabad; est 1999), safeguards insurance customers' interests as **a statutory body under the IRDA Act 1999**. It operates under the **Ministry of Finance**, overseeing and developing the insurance industry. Its powers and functions are defined by the IRDAI Act, 1999 and Insurance Act, 1938.

IRDAI's "Vision Insurance for All" initiative aims for comprehensive coverage by 2047, allocating states and union territories to insurers for increased penetration. In 2023, IRDAI plans to launch **"Bima Trinity" - Bima Sugam, Bima Vistar, Bima Vaahaks** - with insurers to streamline insurance activities.

About the Insurance Sector in India:

India has a **low insurance penetration at 4.2% and an insurance density of \$91 in 2021 (from USD 11 in 2001)**. India's insurance market is forecasted to become **one of the fastest-growing globally** in the next decade, as per the Economic Survey. In 2023, India ranked as the **10th largest insurance market** globally and is projected to climb to the **6th position** by 2032.

50. SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI) INDEX PROVIDERS REGULATIONS, 2024

Context:

The Securities and Exchange Board of India (Sebi) mandates the **registration of index providers managing "significant indices"** based on Indian securities to enhance transparency in financial benchmark governance.

What are Indices?

Indices are **statistical measures used to track the performance of a group of assets or securities** in a particular market. They serve as benchmarks or indicators for investors to **assess the overall performance** and trends of a specific segment of the market. Indices are often composed of **stocks, bonds, commodities**, or other financial instruments, and they provide a way to monitor the ups and downs of various sectors or the entire market.

Common examples of indices include the Sensex, Nifty 200(India); **S&P 500, Dow Jones Industrial Average, and NASDAQ Composite** in the United States, which track the performance of large-cap stocks traded on major exchanges.

What does the regulation Say?

1. The regulations **require index providers like NSE Indices and Asia Index (AIPL)** to register with Sebi, along with making their methodology documents public and adhering to a code of conduct.
2. **Global index providers such as MSCI, Nasdaq, and FTSE Russell** may not need to register unless their indices are widely used by domestic asset managers.

What is the Blue Leaders alliance?

It is **a coalition of 24 countries advocating for urgent action to address the threats** facing the global ocean, including the climate crisis, overfishing, pollution, and other challenges. Key members include Belgium, Costa Rica, Ecuador, Germany, Italy etc. India is not a member, but it endorsed the treaty's implementation at the **G20 New Delhi Leaders' Declaration in 2023**

Aim: Blue Leaders aim to achieve two main objectives:

- a) Establishing a new international target to **safeguard at least 30% of the global ocean with highly and fully protected marine areas by 2030.**
- b) **Successfully concluding a new High Seas Treaty** to create fully and highly protected marine areas in the high seas and enhance management of human activities outside these areas.

Efforts are underway to bring the **BBNJ (Biodiversity Beyond National Jurisdiction) Treaty** into force by 2025, with **only two countries having ratified it so far.**

To know about **BBNJ: UN adopts first ever High Seas Treaty: Click Here**

51. KARNATAKA BANS HARMFUL DYES

Context:

Karnataka bans harmful dyes in **Gobi Manchurian, cotton candy**, imposing imprisonment of up **to seven years and fines of up to Rs 10 lakh** for violators.

Chemicals banned:

Chemical	Description	Colour Produced
Tartrazine	Can induce allergic or pseudo-allergic reactions.	Yellow
Sunset Yellow	Can cause allergic or pseudo-allergic reactions.	Yellow
Carmoisine	May lead to skin rashes and respiratory allergies.	Red
Rhodamine B	Considered carcinogenic; commonly used in textile dyeing and the paper industry.	Pink

Tamil Nadu and Puducherry had previously banned cotton candy sales due to similar concerns.

52. BLUE LEADERS ALLIANCE

Context:

The Blue Leaders High-Level Event on Biodiversity Beyond National Jurisdiction took place in Belgium recently.

53. INFAAR 2019-22 REPORT

Context:

The FAO and ICAR **released the first national report on AMR surveillance (INFAAR 2019-22 Report)** in India's fisheries and livestock sectors.

What is INFAAR?

ICAR, supported by FAO, initiated **INFAAR (Indian Network for Fishery and Animal Antimicrobial Resistance) in 2017** to monitor AMR in the aquaculture and veterinary sectors.

What is AMR?

AMR stands for Antimicrobial Resistance. It occurs when microorganisms like bacteria, viruses, fungi, etc., evolve and become resistant to antimicrobial medicines, rendering them ineffective in treating infections. For instance, **oxytocin misuse** in the dairy industry contributes to this issue.

Key findings of the INFAAR Report:

1. **Staphylococcus** displayed notably **high resistance (60% or higher)** to penicillin in the fisheries sector.
2. **Higher resistance was noted in the livestock sector**, particularly among E coli and Staphylococci.
3. **Antibiotic usage** might be elevated among organized and **contractual farming practices.**

The (INFAAR) collected data from 2019-2022, covering 3 aquaculture systems and major food-producing animals.

Anti-Microbial Resistance

CAUSES OF ANTIBIOTIC RESISTANCE

- Over-prescribing of antibiotics
- Patients not taking antibiotics as prescribed
- Unnecessary antibiotics used in agriculture
- Poor infection control in hospitals and clinics
- Poor hygiene and sanitation practices
- Lack of rapid laboratory tests

Consequences of AMR

- Greater number of AMR deaths (currently 5mn per year)
- Routine treatment becomes riskier to perform
- Economic loss

Steps taken

India	Global
<ul style="list-style-type: none"> Chennai declaration (2012): It promotes antibiotic stewardship Red-line campaign National action plan on AMR (2017-21) 	<ul style="list-style-type: none"> EU: ban on preventive mass medication in animals using antibiotics or other drugs. UN: One Health Approach WHO: AWaRe Classification of antibiotics

Snakebite envenoming is a significant health issue in India, causing around 50,000 deaths annually. The NAP-SE aims to reduce mortality and complications due to snakebites through a comprehensive approach involving healthcare, wildlife, tribal, and animal health components.

Key strategic actions include:

1. Strengthening anti-venom availability at all health facilities
2. Surveillance, emergency care, and inter-sectoral coordination
3. States to develop their action plans tailored to their needs, with designated nodal officers for coordination and monitoring

Other initiatives:

1. AMR Surveillance Network
2. National One Health Program for Prevention and Control of Zoonoses
3. Integrated One Health Surveillance Network for Antimicrobial Resistance
4. GLASS IT Platform is a web-based platform for global data sharing on AMR
5. Operation Amrith (AMRITH – Antimicrobial Resistance Intervention For Total Health)

Snakebites in India

A significant number of snake bites in India are attributed to the widely distributed **Big Four** species.

As of 2023, India only has polyvalent antivenom to neutralise venoms of the Big Four.

Indian cobra (Naja naja)	Saw-scaled viper (Echis carinatus)	Russell's viper (Daboia russelii)	Common krait (Bungarus caeruleus)
Found in forests, grasslands, and agricultural lands; Mostly diurnal.	Found in both desert areas and dense grassland; Mostly nocturnal.	Found in large variety of habitats, often in urbanized areas; Mostly nocturnal.	Usually seen in scrub jungle and sandy areas; Mostly nocturnal.

54. NATIONAL ACTION PLAN FOR PREVENTION AND CONTROL OF SNAKEBITE ENVENOMING (NAP-SE)

Context:

The Union Health Ministry launched the **National Action Plan for Prevention and Control of Snakebite Envenoming (NAP-SE)**, aiming to **halve snakebite deaths by 2030** through a 'One Health' Approach.

The plan includes:

1. **Launching of IEC materials:** Booklet, Posters, and Video for Snakebite Awareness.
2. **Introduction of Snakebite Helpline** in five pilot States.
3. Launch of **National Rabies Control Programme Website**.
4. **Onboarding National One Health Programme** for Zoonoses on Integrated Health Initiative Platform.

55. RPTUAS

Context:

The Department of Pharmaceuticals under the Ministry of Chemicals and Fertilizers has announced the **Revamped Pharmaceuticals Technology Upgradation Assistance Scheme (RPTUAS)**.

What is RPTUAS?

Revamped Pharmaceuticals Technology Upgradation Assistance Scheme aims to enhance the **quality and safety of pharmaceutical products** manufactured in India. The scheme offers support to pharmaceutical manufacturing units **for technology and quality upgradation**.

PTUAS is a component of the **Strengthening of Pharmaceutical Industry (SPI) Scheme**. SPI Scheme aimed to strengthen the existing infrastructure facilities to make **India a global leader in the Pharma Sector**. RPTUAS is the successor of PTUAS under SPI.

Key features:

1. **Broadened Eligibility:** Previously, the scheme only included MSME Pharma units, now the incentive is available to any pharmaceutical manufacturing units based on turnover criteria:
 - a. **Turnover less than Rs 50 crore:** Incentive of

20% of investment under eligible activities.

- b. **Turnover from Rs 50 crore to less than Rs 250 crore:** Incentive of 15% of investment under eligible activities.
 - c. **Turnover from Rs 250 crore to less than Rs 500 crore:** Incentive of 10% of investment under eligible activities.
2. **Flexible Financing:** It offers flexible financing options, including **subsidies on a reimbursement basis**, to diversify financing options for participating units.
 3. **Support for Compliance:** Supports technological upgrades aligned with revised Schedule-M and WHO-GMP standards, covering various improvements such as **HVAC systems, testing laboratories, and clean room facilities**.
 - a. Schedule-M of the Drugs and Cosmetics Rule, 1945 provides **good manufacturing practices (GMP) for pharmaceutical products**
 4. **Dynamic Incentive Structure:** Provides incentives based on the average turnover for the last three years, with a **maximum incentive of Rs one crore per unit**.
 5. **Integration with State Schemes:** Allows integration with state government schemes to provide additional assistance, fostering collaboration between central and state initiatives.
 6. **Enhanced Verification:** Introduces a robust verification mechanism through a **Project Management Agency** to ensure transparency, accountability, and efficient resource allocation.

Incidents of issues with Indian pharma products:

1. **Quality Control Concerns:** E.g., Four types of medicine, made in India, caused the deaths of at least 70 children in Gambia in 2022
2. **Regulatory Violations:** E.g., Sun Pharmaceutical Industries received a warning letter from the FDA for failing to comply with GMP regulations at its Halol plant.
3. **Drug Recalls:** E.g., Dr Reddy's Laboratories recalled over 3,342 bottles of hypertension drugs in the US due to the presence of impurities.
4. **Counterfeit Drugs:** As per a report, fake drugs constituted over \$4 billion of the total \$14–17 billion of the Indian domestic drug market
5. **Export Bans:** E.g., EU banned the import of over 700 generic drugs manufactured in India due to concerns about data integrity and manipulation.

56. UCPMP 2024

Context: The Department of Pharmaceuticals issued the **Uniform Code for Pharmaceutical Marketing Practices (UCPMP) 2024**, setting guidelines for interactions between pharmaceutical companies and healthcare professionals.

Aim: It aims to regulate unethical practices in the pharmaceutical industry.

Key Provisions of UCPMP 2024:

Provisions	Description
1. Prohibits gifts	Companies cannot offer gifts benefiting healthcare professionals or their family members personally.
2. Restriction on Traveling facilities	Travel and vacation benefits are limited unless related to Continuing Medical Education (CME) events
3. Financial limitations	Financial benefits or perks are restricted for individuals qualified to prescribe or supply drugs.
4. Ban on CME workshops abroad	Prohibits conducting CME workshops in foreign countries.
5. Drugs promotion directive	Drug promotion must adhere to marketing approval terms.
	Claims of effectiveness are backed by current evidence.
	Terms like 'safe' must not be used without qualification.
6. Rules violation & adherence directive	Drugs can't be labelled as 'new' if available for over a year.
	Violations handled by Ethics Committees for Pharma Marketing Practices (ECPMP).
	CEOs of drug companies are responsible for compliance.
	Annual self-declarations of adherence are required.

These guidelines, first issued by the Central Government in December 2014, provide **recommendations to the pharmaceutical industry for drug and medical device promotion**. They are **voluntary and not legally binding** on companies. In 2022, the Central Board for Direct Taxes (CBDT) accused **Dolo-650 tablet makers of spending Rs 1,000 crore** on distributing freebies to doctors.

Ethical issues: Pharmaceutical companies **providing freebies to doctors raise** ethical concerns as they can influence prescription behaviour, potentially compromising patient care. This practice may lead to **biased prescribing, prioritizing drugs** based on benefits to the prescriber rather than patient needs, and can **erode trust in the medical profession**.

57. CALLING NAME PRESENTATION (CNAP)

Context: CNAP, or Calling Name Presentation, is a **proposed Caller ID service by TRAI** to reduce incessant spam and Unsolicited Commercial Communication (UCC).

Aim: It aims to show the caller's name when receiving a call, similar to services like Truecaller. Unlike crowd-sourced services, CNAP will rely on verified information from Customer Application Forms (CAFs) filled by subscribers.

TRAI recommends telecom providers maintain a database linking phone numbers with customer names from CAFs. This initiative has raised privacy concerns among industry players, with suggestions for opt-in mechanisms and limitations to protect user privacy. Unlike Truecaller, CNAP's database will be based on verified information, potentially providing more accurate caller identification.

58. STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE (SIPRI) REPORT

Context:

India emerged as the world's top arms importer for the period 2019-23, with a 4.7% increase compared to 2014-18, as per the Stockholm International Peace Research Institute (SIPRI)

Key findings:

For Exports:

1. The USA is the largest arms exporter > France, for the first time, was the second biggest arms exporter > Russia
2. The U.S. increased its arms exports by 17%, while Russia's exports fell by over half.

For Import:

1. India was the world's top arms importer: Russia remained India's main arms supplier (accounting for 36% of its arms imports), However, its share decreased to less than 50% for the first time in 6 decades.
2. Ukraine emerged as the largest European arms importer in 2019–23.
3. Nine of the top 10 arms importers were in Asia and the Middle East.

About SIPRI:

The Stockholm International Peace Research Institute (SIPRI) (founded in 1966; HQ: Solna (Sweden)), is an Independent international institute and global think tank, that provides data, analysis, and recommendations on armed conflict, military spending, arms trade, disarmament, and arms control. Its research, based on open sources, targets decision-makers, researchers, media, and the public, aiming to foster an understanding of conditions for peaceful conflict resolution and sustainable peace.

Context:

The Electric Mobility Promotion Scheme 2024 (EMPS 2024) is introduced by the Ministry of Heavy Industries to boost the adoption of electric vehicles (EVs) in India, specifically targeting the electric two-wheeler and three-wheeler segments.

- EMPS 2024 offers subsidies or demand incentives for electric two-wheelers and three-wheelers, including registered electric rickshaws and carts, as well as L5 models.
- The L5 category includes electric three-wheelers with a maximum speed of over 25kmph and motor power exceeding 0.25kW.

60. DEVIN AI

Context:

Cognition, a start-up, has developed an AI named Devin, which claims to possess remarkable capabilities in handling coding projects independently.

Feature of Devin AI:

- Devin is said to be capable of writing complex code, identifying and correcting errors, and managing entire development projects, all without human intervention.
- Unlike previous AI coding assistants, such as OpenAI's Copilot, Devin is designed to operate as a self-sufficient software engineer.
- Users can interact with Devin through a chat interface, providing instructions for tasks.
- The AI then plans, executes, tests, and updates the user in real time.
- Devin has demonstrated its prowess in various tasks, including deploying web apps, fine-tuning language models, and resolving real open-source software issues.

61. ATMOSPHERIC TESTBED FACILITY

Context:

India inaugurated an atmospheric testbed facility near Bhopal and a Coastal Research Laboratory (CRL) in Visakhapatnam.

What is Atmospheric Testbed Facility?

About Atmospheric Research Testbed	Description
Establishment	Indian Institute of Tropical Meteorology (IITM), MoES at Silkheda to study cloud systems and monsoon patterns, aiding in climate forecasts

59. EMPS SCHEME FOR ELECTRIC MOBILITY

Instrumentation	An extensive set of remote-sensing and in-situ instruments providing continuous observations of convection, clouds, precipitation, soil moisture, radiation, and microphysics. A Ka-band cloud radar and a C-band Doppler weather radar will aid in tracking the movement of rain-bearing systems in the area.
Phases	First phase: Set up in central India to study convection, land-atmosphere interactions, and precipitation processes. Second phase: Planned for the north-east/eastern part of the country to study severe thunderstorm processes .
Objectives	Better understanding of processes governing monsoon convection and land-atmosphere interactions. Organizing intense observational campaigns and model runs to improve physical parameterizations related to convection and land surface processes Outreach, Training, and Dissemination of ART-CI data sets .
Instruments	Approximately 25 high-end instruments were installed for aerosol studies, cloud measurements, rain radar, and weather radar to track rain-bearing systems.

62. PB-SHABD

Context:

The government has **unveiled PB-SHABD, a news-sharing initiative by Prasar Bharati, DD News, and Akashvani News**, along with an updated News on the Air mobile app.

About PB-SHABD

It is a **news-sharing initiative** to provide **news stories in major Indian languages across fifty categories**. The service offers clean feeds curated from across the country, free for the first year, and without the Doordarshan logo. The revamped websites and apps of Doordarshan News and All India Radio will provide **personalized news feeds, push notifications, multimedia integration**, live streaming, social media sharing, and more.

Aim: It aims to **revolutionize the news industry** by offering accurate and meaningful content to print and electronic media nationwide, benefiting smaller news organizations.

63. SMALL AND MEDIUM REITS

Context:

The SEBI recently amended the **REIT Regulations of 2014** to allow for the creation of small and medium real estate investment trusts, known as **SM REITs or micro REITs**.

About SM REITs:

Key Points	Description
Definition	SM REITs are specialised real estate investment trusts focusing on smaller and medium-sized properties, distinct from conventional REITs.
Aim	To regulate fractional ownership and protect investors
Regulations	Sebi sets regulations for SM REITs, including minimum subscription size, asset value for listing, leverage limits, and minimum unit holder requirements. SM REITs are to have a minimum subscription size of ₹10 lakh per unit and a minimum of 200 unit holders . The investment manager must have a net worth of ₹20 crore , and a trustee will oversee operations SM REITs can list assets ranging from ₹50 crore to ₹500 crore and focus on smaller properties, unlike traditional REITs.
Benefits & Risks	SM REITs offer retail investors diversification, access to high-value assets, reduced management burden , regular income, and potential capital appreciation. However, they also carry risks such as market volatility and regulatory compliance.
Impact of Macroeconomic Factors	Economic factors like interest rates, inflation, and market conditions significantly influence SM REITs. Strong economic growth and favourable market conditions can lead to higher occupancy rates, rental income, and property values for SM REITs.
Global Experience	SM REITs exist worldwide, catering to niche markets and specialised real estate segments.

64. LYME DISEASE

Context:

Lyme Disease, a **tick-borne** illness **caused by the *Borrelia burgdorferi* bacterium**, was diagnosed in a 56-year-old man from Koovappady, Ernakulam.

About the Disease:

Aspect	Description
About Lyme Disease	It is a vector-borne infectious disease caused by the bacterium <i>Borrelia burgdorferi</i> .
Transmission	Primarily transmitted to humans through the bite of infected black-legged ticks .
	Cannot spread between humans , from pets to humans, or through air, food, or water.
	Lice, mosquitoes, fleas, and flies also do not transmit it .
Prevalence	Prevalent in wooded and grassy areas worldwide , especially during warmer months.
	Most commonly reported in North America, Europe, and some parts of Asia .
Symptoms	Early symptoms appear between 3 to 30 days after an infected tick bite .
	Manifests with fever, headache, fatigue, and a characteristic "bull's-eye" rash (erythema migrans).
	Erythema migrans serves as a hallmark sign for early diagnosis.
Complications	Left untreated, it can lead to severe complications affecting joints, heart, and nervous system .
Treatment	Standard treatment involves antibiotics like doxycycline or amoxicillin , especially in the early stages.
	Intravenous antibiotics may be required in later stages.

LYME DISEASE SYMPTOMS



65. GLOBAL METHANE TRACKER 2024 REPORT

Context:

The International Energy Agency (IEA) released its **annual Global Methane Tracker 2024 report**

Key Findings of the Report	In 2023, methane emissions from the energy sector remained close to a record high .
	Fossil fuel production and usage, alongside bioenergy , contributed to nearly 120 million tonnes (Mt) of emissions, with approximately 70% originating from the top 10 emitting countries.
	Among these, the United States leads in methane emissions from oil and gas operations, followed by Russia, while China ranks highest in the coal sector.
Recommendations of the Report	Achieving a 75% reduction in methane emissions by 2030 necessitates an estimated investment of around US \$170 billion
	Improved tools for emission tracking , like satellite imagery, have enhanced transparency, yet systematic and transparent data utilization is essential to reduce emission
About Methane	Odorless, colourless, and flammable gas; second-largest contributor to global warming after Carbon Dioxide and primary contributor to the formation of ground-level ozone .
Global Initiatives to Control Methane	International Methane Emissions Observatory , Global Methane Pledge (India is not part of it), Global Methane Initiative, MethaneSAT
Indian Initiatives	GobarDhan scheme , National Biogas and Organic Manure Programme.
About IEA	IEA (HQ: Paris; Founded in 1974) is an autonomous intergovernmental organization to ensure the security of oil supplies. Membership: 31 countries. World Energy Outlook is Published every year and provides critical analysis and insights on trends in energy demand and supply.

66. NATO'S DIANA PROGRAM

Context: Finland has joined **NATO's DIANA (Defence Innovation Accelerator for the North Atlantic) program**, marking a significant opportunity for Finnish companies to expand globally.

What is this program?

The DIANA program, established by NATO, aims to **accelerate dual-use innovation** capacity across the Alliance. It offers resources, networks, and guidance to companies for developing deep technologies. DIANA addresses critical defence and security challenges, including operating in denied environments and enhancing collective resilience. **All NATO nations are members of DIANA.**

67. INDIA'S E-VEHICLE POLICY: KEY HIGHLIGHTS

Context:

The Union Government has **approved an E-Vehicle policy** aimed at positioning India as a **manufacturing hub for electric vehicles (EVs)** with cutting-edge technology.

Aspect	Details
Policy Objective	Promote India as a manufacturing destination for electric vehicles (EVs) with advanced technology
Implementation	The Project Management Agency (PMA) will be responsible for providing secretarial, managerial and implementation support and carrying out other responsibilities as assigned by the Government of India (GoI)
Ministry	Ministry of Heavy Industries
Eligibility Criteria	Minimum Investment Requirement: Rs 4150 Cr (approximately USD 500 Mn)
	Maximum Investment: No cap on maximum investment
	Manufacturing Timeline: Set up manufacturing facilities within 3 years
	Domestic Value Addition (DVA) criteria during manufacturing: 25% within a period of 3 years, and 50% within 5 years from the date of issuance of approval letter by the Ministry of Heavy Industries/ PMA
	The Bank guarantee will be returned only when 50% DVA is attained an investment of at least Rs 4,150 crore has been made, or to the extent of duty foregone in 5 years, whichever is higher.
	Performance Criteria: All electric passenger vehicles shall meet the performance criteria of the Production Linked Incentive (PLI) Auto scheme.
Tenure of the Policy	5 years or as notified by GoI.

Key Benefits	Encourages technological advancements in EV manufacturing; Fosters Make in India initiative; Promotes healthy competition among EV players; Reduces crude oil imports and trade deficit; Mitigates air pollution, particularly in urban areas; Positive impact on health and environment
Other Initiatives to Promote EV	Faster Adoption and Manufacturing of EVs (FAME) India scheme: Phase I was launched in 2015 and Phase II was launched in 2019.
	EV 30@30 initiative for the deployment of EVs and target at least 30 per cent of new EV sales by 2030
	PLI Scheme for Automobile and Automotive Components (PLI-Auto) in 2021, as financial incentives to promote domestic manufacturing and draw investments into the value chain of the automotive manufacturing industry.

68. KISAN CREDIT CARD (KCC) FISHERIES SCHEME

Context:

The Department of Fisheries has integrated the Kisan Credit Card (KCC) Fisheries scheme onto the **JanSamarth Portal**, promising enhanced access to credit for fishers, fish farmers, and stakeholders nationwide.

JanSamarth is an innovative online platform facilitating direct connections between lenders and beneficiaries. Citizens can **access loans** under select Central government schemes through this platform. In 2018-19, the **Kisan Credit Card (KCC) facility was extended to fishers and fish farmers** to address their working capital needs. The scheme covers various categories of farmers, including individuals, joint borrowers, Joint Liability Groups, and Self Help Groups. It offers an **annual interest subvention of 2%**, with an additional subvention of 3% for prompt repayment.

Key Points about Kisan Credit Cards (KCC):	
1.	Introduction: The KCC scheme was launched in 1998 to provide timely credit support to farmers for cultivation and other needs.
2.	Implementing Agencies: Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks, and Cooperatives are involved in implementing the scheme.
3.	Features: KCC comes with an ATM-enabled RuPay debit card , simplified procedures, and built-in cost escalation. Aadhaar linkage is mandatory for interest subvention.
4.	Objectives: KCC aims to meet short-term credit requirements for cultivation, post-harvest expenses, marketing,

- consumption, maintenance of farm assets, and investment in agriculture and allied activities.
- Financial Provisions:** The government provides interest subvention and prompt repayment incentives to farmers to ensure agricultural credit availability at a reasonable cost.
 - Achievements:** Around 25 lakh applications for Fishery KCC have been sanctioned. The government **aims to cover 2.5 crore farmers** under the KCC scheme through a special saturation drive.

Prelims Links:

Q. Under the Kisan Credit Card scheme, short-term credit support is given to farmers for which of the following purposes? (UPSC 2020)

- Working capital for maintenance of farm assets
- Purchase of combine harvesters, tractors and mini trucks
- Consumption requirements of farm households
- Post-harvest expenses
- Construction of family house and setting up of village cold storage facility

Select the correct answer using the code given below:

- 1, 2 and 5 only
- 1, 3 and 4 only
- 2, 3, 4 and 5 only
- 1, 2, 3, 4 and 5

Ans: B

It categorizes AI systems into four levels of risk	Unacceptable risk (Prohibition)
	High-risk (Requires conformity assessment and monitoring)
	Specific Transparency risk (Require information and transparency obligations)
	Minimal risk (No specific regulations)
	High-risk AI models are required to undergo conformity assessments, transparent reporting, and mitigation measures to address potential biases, such as racial and gender bias
Prohibition	The Act also prohibits the use of real-time remote biometric identification in publicly accessible spaces, except for limited exceptions
Steps by India to Promote AI	Advisory on labelling and approval for AI model deployment
	India AI Mission
	National AI Strategy, 2018
Global Initiatives to Promote AI	INDIAai
	Bletchley Declaration for AI
	Global Partnership on AI (GPAI) New Delhi Declaration
	Hiroshima AI Process (HAP) by G7

69. ARTIFICIAL INTELLIGENCE ACT (AI ACT, 2024)

Context:

The European Parliament has passed a **groundbreaking law, the Artificial Intelligence Act (AI Act, 2024)**, establishing comprehensive regulations for AI. It's the **first law of its kind globally**, recognizing different levels of AI and their potential harms.

EU's AI Act Key Highlights:

Highlights	Description
Aim	The EU's AI Act represents a comprehensive effort to protect fundamental rights, democracy, and environmental sustainability while fostering innovation in high-risk AI applications.

70. 'ETHANOL 100'

Context:

The Petroleum Ministry has **launched 'ETHANOL 100'**, a groundbreaking automotive fuel, at the IndianOil Retail Outlet.

Ethanol 100 offers **a cleaner, greener fuel option with its blend of 92-94% ethanol, 4-5% motor spirit, and 1.5% Co-solvent higher saturated alcohol**. It reduces greenhouse gas emissions by **around 63%** and is ideal for high-performance engines due to its high-octane rating. Additionally, its adoption leads to significant savings in foreign exchange.

India's Ethanol Blending Program **aims to promote the blending of ethanol with gasoline** to reduce dependency on fossil fuels and mitigate environmental impact. The program **incentivizes ethanol production and blending**, with a target of **achieving 20% ethanol blending in petrol by 2025-26 (as per National Policy on Biofuel-2018)**

Prelims Link:

Q. According to India's National Policy on Biofuels, which of the following can be used as raw materials for the production of biofuels? (UPSC 2020)

- Cassava
- Damaged wheat grains

3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

Select the correct answer using the code given below:

- (a) 1, 2, 5 and 6 only
- (b) 1, 3, 4 and 6 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4, 5 and 6

Ans: A

71. NIA'S CCMS PLATFORM LAUNCHED

Context:

Union Home Ministry launched a newly developed Digital Criminal Case Management System (CCMS) by the National Investigation Agency (NIA)

What is CCMS?

It is a **browser-based software designed to assist State Police forces** in investigations and prosecution. It aims to **enhance coordination in terrorism and organized crime cases**, improve justice delivery, standardize investigations, and streamline terror-related data compilation. The CCMS facilitates cooperation between **central and state agencies, including Anti-Terror Squads, and supports the implementation of new criminal laws.**

Additionally, the Ministry of Home Affairs (MHA) **launched the 'Sankalan' app** by the National Crime Records Bureau, serving as a guide to navigate through new criminal laws.

About NIA:

The National Investigation Agency (founded 31st Dec 2008; HQ: New Delhi; Under Home Ministry) is the primary anti-terror investigation task force of India. The agency is empowered to deal with the investigation of terror-related crimes across states without special permission from the states under a written proclamation from the Ministry of Home Affairs. It has the authority to take over cases from state police forces and other agencies. It seeks the sanction of the Central government for prosecuting accused individuals under the **Unlawful Activities (Prevention) Act (UAPA)** and other scheduled offences.

72. PRIVATE PLACEMENT OF SECURITIES

Context:

Sebi has decided to **repeal certain circulars related to the private placement of securities**, which provided relaxation for allotment.

What is Private Placement of Securities?

Private Placement of Securities refers to the **process of selling stocks, bonds, or other securities directly to a select group of investors**, rather than making them available to

the general public. This method is often used by companies to **raise capital without having to go through the extensive regulatory requirements** associated with a public offering.

Private placement includes preferential allotment and qualified institutional placement (QIP):

1. **Preferential allotment involves issuing new shares** to existing shareholders or a specific group at a price below market rate, often to reward or retain them. It's regulated by SEBI and the Companies Act, requiring shareholder approval.
2. **Qualified Institutional Placement (QIP)** is for listed companies, allowing them to issue shares to institutional buyers like mutual funds and banks without a public offering. It's used to raise capital swiftly for expansion or other corporate needs, following SEBI guidelines.

73. INDIA'S FIRST OIL PALM PROCESSING UNIT (ARUNACHAL PRADESH)

Context:

India's first integrated **Oil Palm Processing Unit by 3F Oil Palm** has commenced operations in Arunachal Pradesh, marking a significant milestone in the country's journey towards self-reliance in edible oils.

About Palm oil:

- **Derived from the fruit of oil palms**, used in cooking, cosmetics, processed foods, biofuel, etc.
- **Indonesia and Malaysia produce 90%** of global palm oil, with Indonesia leading at over 45 million tonnes in 2021.
- Used in **food, detergents, cosmetics, and biofuel.**
- **Andhra Pradesh, Telangana, and Kerala** contribute 98% of production in India

Issues: Oil Palm plantations are **criticized for unsustainable production** and exploitative labour practices.

NMEO-OP:

- a. **Launched in 2021** to promote oil palm cultivation.
- b. **Targets by 2025-26:** Increase oil palm area to 10 lakh hectares and crude palm oil production to **over 11 lakh tonnes**

Q. Consider the following statements: (UPSC 2018)

- a. The quantity of imported edible oils is more than the domestic production of edible oils in the last five years.
- b. The Government does not impose any customs duty on all imported edible oils as a special case.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only

- (c) Both 1 and 2
(d) Neither 1 nor 2

Ans: A

74. CPCRI

Context:

Union Minister of **State for Agriculture, Farmers' Welfare, and Food Processing Industries**, unveiled a **new dwarf coconut variety called 'Kalpa Suvarna'** and **two hybrid cocoa varieties** developed by the **Central Plantation Crops Research Institute (CPCRI)**.

- The **new cocoa varieties, VTL CH I and VTL CH II**, are **high-yielding and one of them is tolerant to black pod rot**, particularly beneficial in regions with high rainfall.
- **'Kalpa Suvarna'** is recommended for **tender coconut and copra production**.
- Both cocoa varieties **have high fat and nutrient contents**, suitable for **cultivation in Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, and Gujarat**

Feature	Description
Cocoa Varieties (VTL CH I and VTL CH II)	High-yielding varieties; one tolerant to black pod rot , especially advantageous in high rainfall regions. Both varieties have high fat and nutrient contents , suitable for cultivation in Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, and Gujarat .
'Kalpa Suvarna' Coconut Variety	Recommended for tender coconut and copra production .

The **Central Plantation Crops Research Institute (CPCRI)** is a research institute in India that focuses **on plantation crops**. It was **established in 1970 by the Indian Council of Agricultural Research (ICAR)** by combining the **Central Coconut Research Stations at Kasaragod and Kayamkulam**, and the **Central Arecanut Research Station at Vittal**, along with **its five substations**.

75. BIOMINING

Context:

The **biomining project** aimed at **clearing Delhi's landfill sites in Ghazipur and Bhalswa** is likely to **miss the 2024 deadline due to slow progress**.

- Biomining is also **known as bioleaching**. It involves **digging up waste, segregating it, and treating and separating the toxins**. The soil is then treated with bacteria and pathogens to cleanse it.

What is bio mining?

- Bio mining or remediation is the scientific excavation, treatment, segregation and gainful utilisation of aged municipal solid waste lying in dumping sites (legacy waste).



- The process involves drying the waste through solar exposure and releasing methane trapped in the garbage heaps.

WHY IS IT NEEDED?

Apart from being an eyesore, unscientific dumping of waste contaminates groundwater. Experts say rainwater leeches penetrate the subsoil with harmful chemicals from non-segregated waste. Legacy waste also causes foul smell to spread and fire incidents.

76. SIMA

Context:

Google DeepMind has unveiled **SIMA (Scalable Instructable Multiworld Agent)**, a **new AI gaming agent capable of understanding and executing natural language instructions** to perform **tasks across various video game environments**.

- Unlike AI models trained on specific datasets, **SIMA functions as a generalist AI agent, able to process instructions and take actions independently**.
- It **learns and improves over time through interactions with users**, becoming smarter and better at fulfilling requests.
- SIMA has been **trained on a variety of video games in collaboration with game developers**, demonstrating its **ability to understand diverse gaming worlds and follow instructions like a human player**.

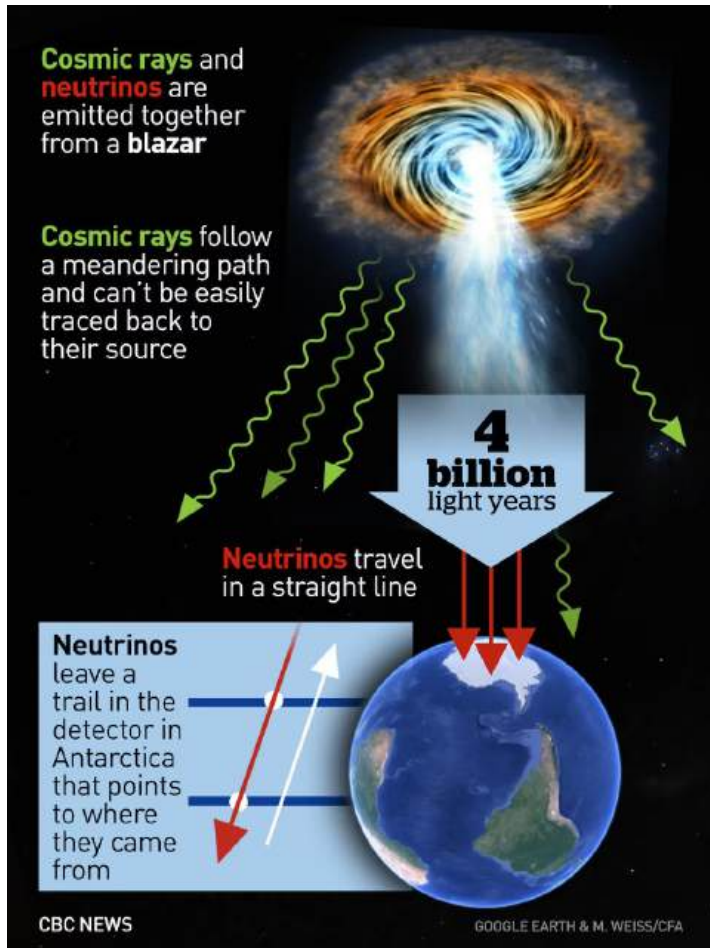
This breakthrough paves the way for AI agents that can **intelligently collaborate with humans not only in games but also in real-world tasks**.

77. GHOST PARTICLES

Context:

Astronomers analysing data from the **IceCube Neutrino Observatory in Antarctica** have **potentially detected the first evidence for astrophysical tau neutrinos**, nicknamed "**ghost particles**" due to their elusive nature.

- These subatomic **particles interact minimally with matter**, allowing them to **travel vast distances without disturbance**, making them **valuable for tracing their origins in the universe**.
- Astrophysical neutrinos, **including tau neutrinos, originate from distant cosmic sources and are challenging to detect**.



150 ships, submarines, and 300 aircraft. It boasts 2 active aircraft carriers, 1 amphibious transport dock, and various other vessels, establishing itself as a multi-regional blue-water navy.

Navy in Ancient India:

Navy	Description
Early Literary Evidence	Arthashastra references Indian shipping and maritime trade Kautilya mentions the superintendent of ships overseeing ports, shipping, and maritime security Four ship categories: Commercial, Private, Royal, and Warship, with further subdivisions. Commercial ships include Merchant ships and Passenger ships
Gupta Empire Navy	Gupta military comprised infantry, cavalry, chariots, elephants, and ships Gunaighar copper plate inscription mentions ships as an integral part of the military in the 6th century AD
Chola Expeditions	Imperial Cholas, under Raja Raja Chola and Rajendra Chola, conducted naval conquests with a strong navy Expanded the empire to regions including Myanmar, Malaya, and Sumatra through maritime conquests Sent ambassadors to distant countries, including China.
Medieval Period	Naval build-up initiated by Manavikraman, Samoothiri Raja of Kozhikode, in response to Portuguese actions in 1503. Kunjali Marakkars appointed as admirals, successfully resisting Portuguese attempts with Dutch East India Company alliance
Maratha Navy	Maratha Empire, founded by Chhatrapati Shivaji Maharaj in 1674, established a naval force with cannons mounted on ships Shivaji's empire reached the west coast in 1656-57, prompting the establishment of a navy to protect territories, secure ports, and facilitate maritime trade. Between 1661 and 1663, the Maratha Navy comprised 400+ ships, including battleships like gurab, tarande, galbat, shibad, and pal. Forts: Shivaji ordered the construction of naval forts like Vijaydurg, Sindhudurg, and Kolaba between 1653 and 1680 for strategic purposes and defence against sea-based enemies. The navy's strategic goals were primarily focused on countering and possibly preempting the Siddis of Janjira who projected power from their sea bases. Limitations: While strong in littoral waters, the Maratha Navy did not challenge European naval powers in the high seas.

IceCube Neutrino Observatory

The IceCube Neutrino Observatory is a **distinct detector spanning a cubic kilometer of Antarctic ice** with 5,000+ light sensors. It identifies high-energy neutrinos, with energies millions to billions of times greater than those from stellar fusion reactions.

79. TOBACCO BOARD

Context:

The Tobacco Board has **set a crop size of 100 million kg** for Karnataka in 2024-25. Farmers are urged to cultivate within authorized areas and register with the board to avoid excess production and ensure market sustainability.

78. NAUSENA BHAWAN (NEW DELHI)

Context:

The Defence Ministry inaugurated the **Indian Navy's first independent headquarters**, Nausena Bhawan, in Delhi Cantonment.

India **ranked as the 2nd largest producer and 4th largest exporter** of unmanufactured tobacco globally in 2021.

The building, designed through a nationwide competition, **consolidates the Navy's operations previously spread across 13 locations**. Achieving **Green Rating IV** features a robust **three-tier security system** with cutting-edge technologies.

About Tobacco Board (HQ: Guntur, Andhra Pradesh, est. 1976)

It is a **statutory body** under the Tobacco Board Act, 1975. It functions under the **Department of Commerce, Ministry of Commerce & Industry**. Its primary role includes promoting the **export of various tobacco** varieties and regulating the production, distribution, and **quality of Flue Cured Virginia tobacco**.

The Indian Navy (founded on 26 January 1950 as current service; and on 5 September 1612 as East India Company Navy) under the **Supreme Commander, the President of India**, is led by the **Chief of Naval Staff**. It operates as a **blue-water navy** in regions like the Persian Gulf, the Horn of Africa, and the Strait of Malacca, conducting **anti-piracy operations** and partnering with regional navies. The Navy comprises **67,252 active and 75,000 reserve personnel, along with a fleet of**

80. PATENTS (AMENDMENT) RULES, 2024

Context:

India has announced **progressive changes in the Patents Rules, 2003 (under the Patents Act 1970)** through the Patents (Amendment) Rules, 2024, notified by the Department of Promotion of Industry and Internal Trade (DPIIT) and the

Indian Patent Office.

What is a Patent?

A patent is a **statutory right granted by governments**, providing exclusive rights to the inventor for their invention. It prohibits others from using, making, selling, or importing the patented product or process without permission. The patent term **typically lasts for 20 years**. To qualify for a patent, an invention must meet criteria such as **novelty, inventive step, and industrial applicability**.

Key changes introduced under Patents (Amendment) Rules, 2024

- Revised Due Date for Request for Examination:** The deadline for filing a Request for Examination (RFE) in a patent application has been reduced from 48 months to 31 months from the earliest priority date.
- Simplified Submission of Form 3:** Patent applicants are now required to submit details of corresponding applications on Form 3 only twice.
- Introduction of 'Certificate of Inventorship'** to recognize inventors' contributions to patented inventions.
- 10% reduction in renewal fees** if paid in advance through electronic mode for at least 4 years.
- The frequency of filing statements of working patents was reduced** from once in a financial year to once in every three financial years.
- Empowerment of Controller:** The Controller has been granted authority to extend time periods specified in the Rules and to condone delays for up to six months.
- Amendments in Pre-grant and Post-grant Opposition Procedures:** The time frame for submission of recommendations by an Opposition Board and the response time for applicants have been adjusted.

Achievements:

- India has ratified the **Patent Cooperation Treaty (PCT)**, and its patent office **granted over 100,000 patents** between March 2023 and March 2024.
- There has been a **surge in Geographical Indication registrations**, a record-breaking number of **copy-right registrations**, and the highest number of **design registrations** during the fiscal year 2023-24.
- Trade Marks Registry** is committed to issuing examination reports within 30 days of receiving trademark applications.
- National Intellectual Property Awareness Mission (NIPAM)** has provided IP training to over 24 lakh youths in the last two years.

81. TRADEMARK RULES: 'PASSING OFF' PROVISIONS

Context:

Recently, **Dolma Aunty, renowned for her momos in Lajpat Nagar, Delhi**, won a trademark battle in her favour. The Delhi High Court cancelled the trademark registration of **'Dolma Aunty Momos'** in the name of Mohammed Akram Khan after Dolma Tsering, the original Dolma Aunty, filed a petition against him.

The legal action **invoked 'passing off' provisions**, seeking cancellation of the infringers' trademark under relevant sections of the Trademarks Act.

What is a trademark?

These are **symbols, designs, words, or phrases associated** with a business, and registering them grants exclusive rights to their usage. Governed by the **Trademarks Act of 1999**, trademarks registered with the **Controller General of Patents, Designs, and Trademarks** are protected for **10 years** and can be renewed periodically.

What is the 'Passing off' provision?

It refers to **deceptive practices where one brand attempts to profit from another's reputation** through misrepresentation.

In trademark law, the **distinction between infringement and passing off is crucial**. If a registered trademark is violated, it constitutes infringement. However, if the trademark isn't registered and infringement happens, it's categorized as passing off.

Regarding passing off, the **Supreme Court's ruling in Cadila Healthcare Limited vs. Cadila Pharmaceuticals Limited (2001)** defined it as a type of **unfair trade competition**

82. SAKHI APP

Context:

The Vikram Sarabhai Space Centre (VSSC) has **developed SAKHI**, a multi-purpose app for astronauts on the **Gaganyaan space flight mission**.

The Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram developed the system for the Gaganyaan mission. It aims to support astronauts by monitoring their health, ensuring communication with Earth, and maintaining mission logs in various formats. It also reminds astronauts about hydration, dietary schedules, and sleep patterns.

ISRO aims to **launch the Gaganyaan mission in 2025**, with the crew assisted by SAKHI during their journey.

83. INDIGENOUS SICKLE CELL DISEASE DRUG DEVELOPED

Context:

Delhi-based **Akmus Drugs and Pharmaceutical Limited** has developed a new **India's first room-temperature stable indigenous drug for sickle cell disease**.

How Akmus Sickle Cell Drug is a Game-Changer?

- **Basic Component:** The drug's primary component is an **oral suspension of Hydroxyurea**.
- **Affordable Price:** Priced at less than ₹600 (at **just 1% of the global price**)
- **Suitable for All Ages:** Tailored for patients of all age groups, ensuring broad applicability.
- **Precise Administration:** Provided with oral syringes, it offers convenience and accuracy in dosage.
- **Room Temperature Stability:** Eliminates the need for stringent storage conditions, unlike imported solutions requiring refrigeration (at 2-8 degrees Celsius)

What is SCD?

Sickle cell disease, a **genetic blood disorder**, impacts patients throughout their lives. SCD is a group of **inherited Red Blood Cell (RBC) disorders** or haemoglobin disorders. It changes the **shapes of RBCs from round to a C-shaped form** called a sickle. Sickle cells clog the blood flow and die early, causing a constant shortage of RBCs.

India's initiatives:

- **National Sickle Cell Anaemia Elimination Mission** (launched in 2023, it aims to eliminate sickle cell genetic transmission by 2047)
- **The recent approval of Casgevy**, a groundbreaking gene therapy utilizing CRISPR-Cas9 technology
- India has acknowledged SCD as a top health concern for **tribal communities**, emphasizing the need for targeted interventions.

84. KETAMINE USE

Context:

Elon Musk **defends ketamine use**, deeming it **'beneficial' for investors**. The Tesla CEO disclosed his prescription for ketamine, stating it helps manage his mood.

About Ketamine:

Ketamine is a **dissociative anaesthetic (produces a trance-like state)** that has some hallucinogenic effects.

Usage:

1. Doctors use it to induce **general anaesthesia** that does not require muscle relaxation. General anaesthesia denotes a **sleep-like state**
2. **Developed as an animal anaesthetic in the 1960s**,

and later approved by the United States Food and Drug Administration (FDA) for human use.

3. **Recently used to treat depression and mental illnesses**, also used recreationally. **Recreational use involves** snorting, injecting, or smoking. Administered through intravenous (IV), nasal spray, or tablet for mental illness treatment.

Effects of Ketamine: Ketamine works by **blocking the N-methyl-D-aspartate (NMDA)** receptor in the brain. This receptor is involved in the **transmission of pain signals** and in the regulation of mood. By blocking the NMDA receptor, ketamine can produce analgesia (pain relief) and euphoria. It can create pleasant visualizations and a sense of detachment. Ketamine can produce hallucinations similar to **other drugs such as Lysergic acid diethylamide (LSD)** and angel dust.

Regulations: Ketamine has been included as a **psychotropic substance under the Narcotic Drugs and Psychotropic Substances Act, 1985**

85. MILITARY EXERCISES IN NEWS

Exercise Name	Details
Exercise Tiger Triumph – 24	Bilateral tri-service Humanitarian Assistance and Disaster Relief (HADR) Exercise between India and USA.
Other exercises with the USA	Military training exercises: Yudh Abhyas and Vajra Prahar. Air Force exercise: Cope India. Naval Exercise along with Japan: Malabar.
Exercise Lamitiye 2024	Joint Military Exercise between Indian Army and Seychelles Defence Forces .

86. ₹1,000 CRORE FUND FOR AGRI-TECH STARTUPS: NABARD INITIATIVE

Context:

NABARD plans to **launch a ₹1,000 crore fund** to support **technology-driven agri-startups and rural enterprises**, addressing challenges in scaling up operations due to limited **access to equity and debt instruments** to create new forward and backward linkages in the rural ecosystem.

What is the Agritech startups?

These startups use technology to enhance agriculture, providing smart agriculture services such as crop information, farming as a service, and big data analytics with AI to improve productivity and income.

Key initiatives taken by the government:

1. **Digital Agriculture Mission (DAM)** with the India

Digital Ecosystem of Agriculture (IDEA) and funding for new technology

2. **Innovation and Agri-Entrepreneurship Development Programme** under the Rashtriya Krishi Vikas Yojana (RKVY)
3. **Access to loans for agri-startups** through Priority Sector lending directed by the RBI
4. **NIDHI Seed Support Program (NIDHI-SSP)** under the Department of Science & Technology (DST)

About NABARD:

NABARD (HQ: Mumbai; est. 1982) a key government institution, **oversees Rural Banks and Cooperative Banks**, facilitating credit planning, policy formulation, and rural development financing. It replaced entities like the **Agricultural Credit Department and Agricultural Refinance and Development Corporation**. **NABARD** is fully owned by the **Ministry of Finance** and plays a crucial role in financial inclusion efforts

87. ASBESTOS

Context:

The **Environmental Protection Agency (EPA) of the USA** has announced a **comprehensive ban on asbestos**, a **deadly carcinogen** still present in some **products despite previous partial bans**.

- This new rule **expands EPA regulation under a 2016 law aimed at overseeing toxic chemicals in everyday items**.
- The ban specifically targets **chrysotile asbestos, the only remaining form of asbestos used in the US, found in products like brake linings and chlorine bleach**.
- Asbestos exposure is **linked to lung cancer and mesothelioma**, causing over 40,000 deaths annually in the US.

Asbestos is a **naturally occurring mineral that is heat and corrosion-resistant**. It is found in **rocks and soil** and has been used in **many products for insulation and as a fire retardant**

Asbestos can **release microscopic fibres into the air when asbestos-containing material is disturbed or damaged**. Inhaling these fibres can cause **lung damage, including cancer, and other health problems**

The most dangerous type of asbestos is **crocidolite asbestos, also known as blue asbestos**. Other types of asbestos include:

- **Actinolite asbestos:** Used in products like cement, insulation, paint, and drywall
- **Amosite asbestos:** Brown asbestos commonly used in cement, insulation, roofing, and other construction materials

88. AIR QUALITY REPORT 2023

Context:

Only **10 countries had healthy air quality in 2023**, with 9% of global cities meeting WHO guidelines for **PM2.5** pollution, as per the Air Quality Report 2023, released by **Swiss organisation IQAi**

Key Findings:

- The most affected areas were in **West Asia, Africa, and Central and South Asia**, while **French Polynesia, Mauritius, and Iceland** had the least pollution.
- **India was ranked third worst globally** after Bangladesh and Pakistan in **PM2.5** pollution
- **New Delhi** tops the list as the **world's most polluted capital city**, while **Bihar's Begusarai** is the **most polluted metropolitan area**.
- Over 1 billion people in India experience **PM2.5** levels exceeding WHO recommendations.

About PM2.5:

It refers to **atmospheric particulate matter** with a **diameter of less than 2.5 micrometres**, about 3% the width of a human hair. These particles can **penetrate deep into the lungs** and bloodstream, leading to serious health issues like **lung cancer, heart disease, and stroke** with prolonged exposure. **PM2.5 pollution is primarily caused by the burning of fossil fuels**.

Q. In the context of WHO Air Quality Guidelines, consider the following statements: (UPSC 2022)

1. The 24-hour mean of PM2.5 should not exceed 15 µg/m³ and the annual mean of PM2.5 should not exceed 5 µg/m³.
2. In a year, the highest levels of ozone pollution occur during periods of inclement weather.
3. PM10 can penetrate the lung barrier and enter the bloodstream.
4. Excessive ozone in the air can trigger asthma.

Which of the statements given above are correct?

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

Answer: Option b) 1 and 4 only

89. GENETIC RESCUE

Context:

Conservation efforts alone are **insufficient for Ranthambore's highly inbred tiger population**. A recent study has suggested **genetic rescue as a strategy to preserve the tiger population** in Ranthambore National Park.

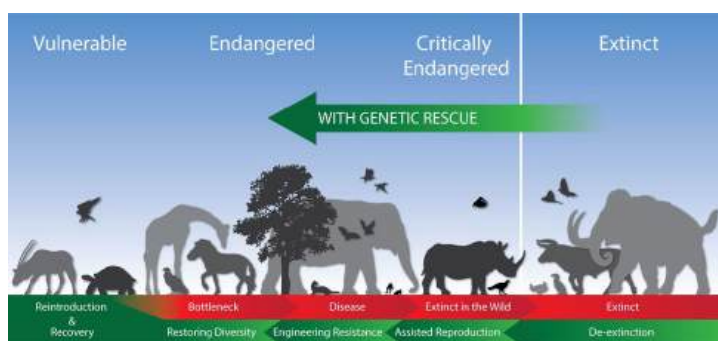
Issues:

The tiger population in Ranthambore faces issues of **genetic isolation and inbreeding** due to fragmentation and habitat loss. Inbreeding can lead to **genetic disorders and reduced fitness**, posing a threat to the population’s long-term viability.

What is Genetic Rescue?

Genetic rescue involves **introducing individuals from a different population** to increase **genetic diversity and offset inbreeding** in a small or isolated population. It aims to improve the population’s health and viability by introducing new genes and reducing the risk of extinction due to **inbreeding depression**.

Wildlife managers bring **individuals from larger, healthier populations** to smaller ones to achieve this. The aim is to reduce extinction risks and improve survival, particularly in endangered species, thereby **mitigating inbreeding depression**.



Definitions:

- Inbreeding:** Inbreeding refers to the mating between close relatives within a population. This can lead to an **increase in homozygosity**, meaning individuals inherit two identical forms of a particular gene, one from each parent.
- Inbreeding Depression:** Inbreeding depression occurs when the offspring resulting from mating between closely related individuals **exhibit reduced fitness or health compared to the population average**. This can include traits such as decreased fertility, lower survival rates, and increased susceptibility to diseases.

About Ranthambore National Park:

Ranthambore National Park, located in **Rajasthan’s Sawai Madhopur district**, began as the **Sawai Madhopur Game Sanctuary in 1955** before becoming a **Project Tiger reserve** in 1973 and a national park in 1980. Situated at the intersection of the **Aravali and Vindhya hill** ranges, it is bounded by the **Banas River to the north and the Chambal River** to the south. The park’s vegetation is predominantly **mixed deciduous**, with prominent plant species including Dhok, Banyan, Pipal, Neem, Babul, and Gum. **Kailadevi Wildlife Sanctuary and Sawai Mansingh Wildlife Sanctuary** are linked to Ranthambore’s core by narrow corridors, forming part of the Tiger Reserve

90. BUGUN LIOCICHLA

Context:

The **Bugun tribe in Arunachal Pradesh** has demonstrated exemplary conservation efforts by **donating 1,470 hectares of forest land** to the state forest department for the **protection of the critically endangered songbird Bugun Liocichla**.

- This species, **discovered in 2006, faces threats from deforestation and hunting**.

The **Bugun Liocichla (Liocichla bugunorum)** is a small, **critically endangered babbler with olive-grey plumage**, a black cap, and a yellow-orange eyebrow.

It is only found in the **Eaglenest Wildlife Sanctuary in Arunachal Pradesh, India**, and has been described as similar to a small laughingthrush.

The Bugun Liocichla **was first spotted in 1995 and described as a new species in 2006**.



91. STEAG

Context:

The **Indian Army** has established the **“Signals Technology Evaluation and Adaptation Group” (STEAG)**, a specialized technology unit aimed at **researching and assessing next-generation communication technologies for defence applications**.

- This unit will focus on areas such as **Artificial Intelligence, 5G and 6G networks, machine learning, and quantum technologies**.
- Operated under the Corps of Signals, **STEAG will play a crucial role in enhancing the Army’s digital capabilities** by **scouting, evaluating, developing, and managing cutting-edge ICT solutions**.
- STEAG aligns with **India’s goals of self-reliance in high-end communication technologies, contributing to the nation’s strategic autonomy**.

92. PROJECT GAIA

Context:

Central banks, including the European Central Bank and the Bank of Spain, have introduced **Project Gaia**, utilizing **artificial intelligence (AI) to evaluate climate-related financial risks**.

- This innovative program addresses the **lack of uniform reporting standards by analysing firm carbon emissions, green bonds, and net-zero commitment disclosures**.
- The initiative **aims to democratize climate risk research by potentially opening Gaia to the public as an online tool**.

93. REVERSE FLIP

Context:

Several startups, including Pine Labs, Zepto, and Meesho, are considering a **“reverse flip” strategy to return to India**.

- The decision to reverse flip is **driven by various factors**, including **regulatory changes, market opportunities, and the desire to tap into India’s growing digital economy**

“Reverse flip” refers to the **process where startups that were initially established in countries outside of India, such as the US or Singapore, decide to relocate their headquarters back to India**.

This involves **moving their corporate base, operations, and possibly legal domicile to India** from their current overseas location.

The term is used to describe the **reversal of the initial decision to establish the company outside of India and instead bring it back to its home country**.

94. GRID-INDIA

Context:

Grid Controller of India Limited (GRID-INDIA) has been recognized as a **Miniratna Category-I Central Public Sector Enterprise (CPSE)** by the Ministry of Power, Government of India.

- Established in **2009**, **GRID-INDIA plays a crucial role in overseeing the operation of the Indian Power System**, ensuring **efficient power transfer within and across regions**, and facilitating transnational power exchanges.

PSU Classification:

Category	Description
Maharatna	The highest category of PSU classification, is reserved for the largest and most profitable PSUs . They have substantial operational and financial autonomy.

Navratna	Reserved for select PSUs considered to be top performers in terms of financial performance , operational efficiency, and global competitiveness.
Miniratna Category-I	Includes PSUs that have performed exceptionally well and have significant operational and financial autonomy .
Miniratna Category-II	Comprises PSUs that have shown satisfactory performance but may not have achieved the same level of excellence as Category-I PSUs .

95. PUSA-1121 AND 1509 BASMATI VARIETIES

Context: Indian Agricultural Research Institute (IARI) scientists have raised concerns about the unauthorized cultivation of Indian basmati rice varieties in Pakistan.

- Varieties such as **Pusa Basmati-1121 (PB-1121), Pusa Basmati-6 (PB-6), and PB-1509**, originally developed by IARI, are **being grown in Pakistan under different names**.
- For instance, **PB-1121 is marketed as ‘1121 Kainat’ and PB-1509 as ‘Kissan Basmati’**.

Indian basmati exports are expected to reach a record high, with **IARI-bred varieties dominating the market**.

Basmati rice is a **long-grain rice variety known for its distinct aroma, delicate flavour, and fluffy texture when cooked**.

It is primarily grown in the **Indian subcontinent, particularly in the foothills of the Himalayas**.

Basmati rice has been cultivated for centuries and is highly prized for its quality and culinary properties.

So far 34 varieties of Basmati rice have **been notified under the Seeds Act, 1966**.

- Temperature:** 22-32°C (high humidity)
- Rainfall:** Around 150-300 cm.
- Soil Type:** Deep clayey and loamy soil.
- Top Rice Producing States:** West Bengal > Punjab > Uttar Pradesh > Andhra Pradesh > Bihar.
- Aus, Aman and Boro:** In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year.
- India is the **leading exporter of Basmati Rice** to the global market and accounts for 2/3rd of supply.
- Major Export Destinations for Basmati Rice (2021-22):** Iran, Saudi Arab, Iraq, United Arab EMTs, U S A and Yemen Republic.



96. SOUND LASER

Context:

Scientists in China have developed a **ground-breaking “sound laser”** that emits **particles of sound instead of light, making it the most powerful of its kind.**

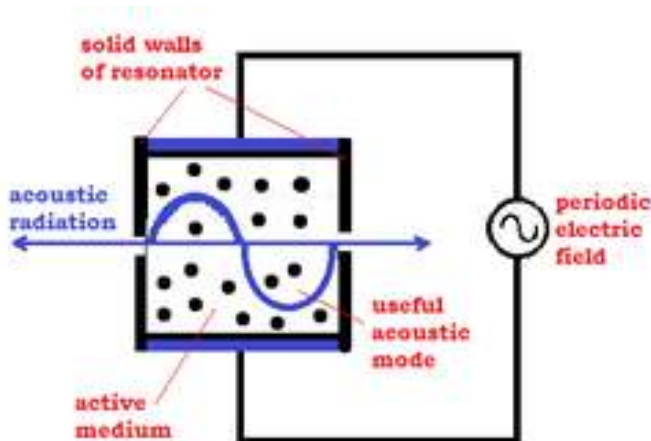
- Unlike traditional lasers that emit photons, **this laser releases particle-like chunks of sound known as phonons in a narrow beam.**

How Does It Work?

- The device **utilizes a one-micrometre-long silica bead, suspended by two light beams in a reflective cavity.**
- Vibrations in the bead create phonons, which are **amplified in the cavity before release.**
- This modified architecture **significantly enhances the laser’s brightness and operational duration.**
- Phonons are less affected by liquids, **making them effective for imaging watery tissues and deep monitoring.**

Additionally, they have applications in **optoelectronics, ultrasound, signal modulation, nanoparticle manipulation, and airport security scans.**

These **“sound lasers,”** also called **SASERs (Sound Amplification by Stimulated Emission of Radiation)**, produce **uniform sound waves on a nanoscale and were first developed in 2009.**



97. ASSISTED REPRODUCTIVE TECHNOLOGY

Context:

The **Ministry of Health and Family Welfare** has requested a **report from the Punjab government** regarding the **in-vitro fertilization (IVF) treatment** of aged women by **violating the Assisted Reproductive Technology (Regulation) Act, 2021**

Assisted reproductive technology (ART) is a term that refers to **medical procedures that are primarily used to address infertility.** ART procedures involve **handling eggs or embryos and can include: In vitro fertilization (IVF), Intracytoplasmic sperm injection, Cryopreservation of gametes or embryos, and Fertility medication**

98. PUSHPAK

Context:

ISRO has achieved a significant breakthrough in **Reusable Launch Vehicle (RLV) technology** with the **successful completion of the RLV LEX-02 landing experiment.**

- This experiment, the **second in the series following RLV-LEX-01, demonstrated the autonomous landing capability of the RLV, named Pushpak.**

The **Reusable Launch Vehicle Technology Demonstrator (RLV-TD) Programme** is focused on developing **critical technologies for a fully reusable launch vehicle (RLV)** to facilitate cost-effective access to space.

The RLV is **designed as a space plane with a low lift-to-drag ratio, allowing it to transport payloads to low Earth orbits and return to Earth for reuse.**

India aims to **scale up this vehicle to serve as the first stage of its reusable two-stage orbital launch vehicle.**

99. ANAGRANINF - ANTIBIOTIC DEVELOPMENT PROJECT

Context:

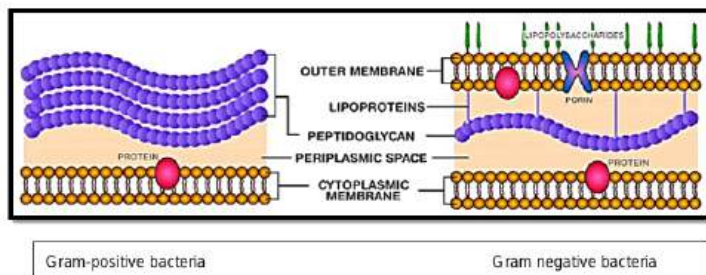
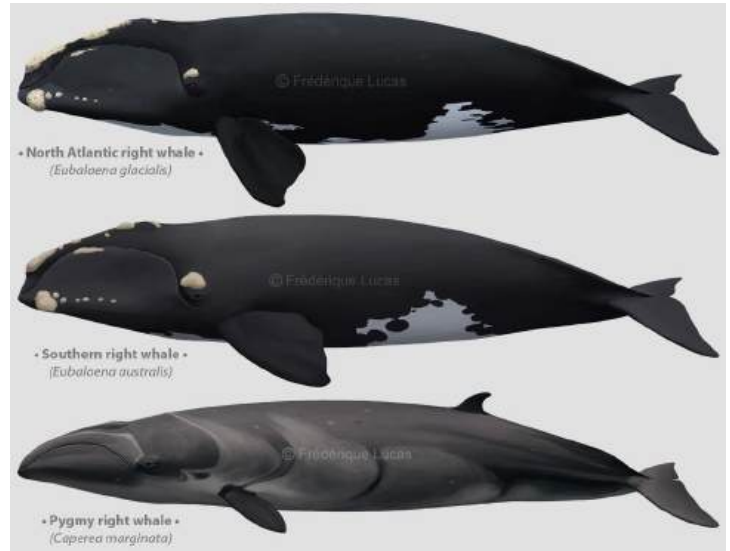
The **Technology Development Board (TDB)** of the Department of Science & Technology has awarded a grant for the **collaborative project “ANAGRANINF - Development of a Novel Class of Antibiotics Against Gram-Negative Bacterial-Infections.”**

- This initiative aims to **foster healthcare innovation through a joint effort between Indian and Spanish companies.**

Gram-negative bacteria are **prokaryotic organisms that are resistant to multiple drugs and can cause infections like pneumonia and meningitis.**

They are a significant public health problem because they can **pass along genetic materials that allow other bacteria to become drug-resistant as well.**

Item	Gram positive	Gram negative
Peptidoglycan layer	Thick (multilayered)	Thin (single-layered)
Teichoic acids	Present	Absent
Periplasmic space	Absent	present
Lipopolysaccharide (LPS) content	Virtually none	High
Lipid and lipoprotein content	Low	High
Resistance to physical disruption	Low	High
Inhibition by basic dyes	Low	High
Susceptibility to anionic detergents	Low	High
Resistance to drying	Low	High
Gram reaction	Retain crystal violet dye and stain dark violet	Can be decolorized to accept counter stain



100. RIGHT WHALES

Context:

A recent study reveals that even minor entanglements in fishing gear can have devastating effects on female North Atlantic right whales, potentially preventing them from breeding.

- These findings highlight the urgent need for **ropeless fishing gear to mitigate threats to the survival of this critically endangered species.**

About Right Whales:

- Right whales are **large baleen whales that belong to the genus Eubalaena**, along with **Southern Right Whales (Least Concern), North Atlantic Right Whales (Critically Endangered), and North Pacific Right Whales (Endangered).**
- Right whales are known for **swimming slowly, floating after being killed, and producing large amounts of baleen and oil.**
- They have been **hunted to near extinction, but hunting was banned in 1935**, and the whaling industry is no longer a threat to the species.

101. BIMA SUGAM

Context:

The **Insurance Regulatory and Development Authority of India (IRDAI)** has approved the establishment **of Bima Sugam**, an **online insurance marketplace**, aimed at simplifying the process of **buying, selling, and servicing insurance policies**, as well **as settling claims.**

Features of Bima Sugam:

- Bima Sugam functions as an **e-commerce platform** where insurance companies can offer their **products, providing customers with an end-to-end digital journey.**
- It **eliminates paperwork by offering policies in electronic format** and **allows customers to access all their policies** - life, health, and non-life insurance - in one application or window.
- Bima Sugam is expected to **make insurance policies more affordable** by reducing commissions paid to intermediaries, potentially leading to lower premiums for policyholders.
- Additionally, it **offers a unified platform for policy issuance, claim settlement, and service requests**, contributing to **transparency and collaboration in the insurance sector.**

About IRDAI:

IRDAI (HQ: Hyderabad; est 1999), safeguards insurance customers' interests as **a statutory body under the IRDA Act 1999.** It operates under the **Ministry of Finance**, overseeing and developing the insurance industry. Its powers and functions are defined by the IRDAI Act, 1999 and the Insurance Act, 1938

IRDAI's "Vision Insurance for All" initiative aims for comprehensive coverage by 2047, allocating states and union territories to insurers for increased penetration. In 2023, IRDAI launched **"Bima Trinity" – Bima Sugam, Bima Vistar, Bima Vaahaks** – with insurers to streamline insurance activities.

About the Insurance Sector in India:

India has a **low insurance penetration at 4.2% and an insurance density of \$91 in 2021 (from USD 11 in 2001)**. India's insurance market is forecasted to become **one of the fastest-growing globally** in the next decade, as per the Economic Survey. In 2023, India ranked as the **10th largest insurance market** globally and is projected to climb to the **6th position** by 2032

102. FINANCING AGROCHEMICAL REDUCTION AND MANAGEMENT PROGRAMME – OR FARM

Context:

Seven countries - **Ecuador, India, Kenya, Laos, Philippines, Uruguay, and Vietnam** - have initiated a program called the **Financing Agrochemical Reduction and Management Programme (FARM)** to address pollution **from pesticides and plastics in agriculture**.

- This initiative aims to **combat the release of toxic persistent organic pollutants (POPs)** into the environment caused by the **use of harmful chemicals in farming**.

FARM, led by the UN Environment Programme (UNEP) with support from the **Global Environment Facility (GEF)**, intends to shift **financial incentives towards farmers to adopt low- and non-chemical alternatives**, promoting sustainable practices.

By phasing out hazardous pesticides and Agri-plastics and encouraging better management standards, the program **aims to prevent the release of over 51,000 tons of hazardous pesticides and 20,000 tons of plastic waste**, while also **reducing carbon dioxide emissions and protecting over 3 million hectares of land**.

103. 'SHIVA' AND 'SHAKTI,' EARLIEST BUILDING BLOCKS OF THE MILKY WAY

Context:

Astronomers have discovered **two ancient streams of stars, named Shakti and Shiva**, which are among the **earliest building blocks of the Milky Way galaxy**.

- These streams, identified using data from the **European Space Agency's Gaia telescope**, are believed to have **merged with the Milky Way around 12 billion years ago**.
- Each structure contains stars with similar chemical compositions, **formed approximately 12-13 billion years ago and with a mass about 10 million times greater than our sun**.

Gaia, launched in 2013, has been instrumental in **mapping the Milky Way's three-dimensional structure**, aiding astronomers in detecting structures like Shakti and Shiva. Further

studies, including future Gaia surveys, are expected to provide additional insights into the formation and evolution of the Milky Way galaxy.

In Hinduism, the **union between Shiva and Shakti gave rise to the cosmos**. Identifying the Shakti and Shiva structures has helped to bring the **Milky Way's turbulent earliest stages into focus**.

104. RESOLUTION ON ARTIFICIAL INTELLIGENCE

Context:

The UN General Assembly adopted a significant resolution focused on **promoting safe, secure, and trustworthy artificial intelligence (AI) systems** that align with **sustainable development goals**.

- The resolution emphasizes **respect for human rights throughout the AI life cycle** and acknowledges AI's potential to **advance the Sustainable Development Goals**.
- It is the **first time the Assembly has addressed regulation in this emerging field**.
- The resolution calls for **refraining from AI systems that violate human rights and advocates for regulatory frameworks to ensure safe AI use**.

The resolution is a U.S.-led resolution promoting safe, secure, and trustworthy AI systems, backed by over 120 Member States.

105. COP PRESIDENCIES' TROIKA

Context:

The hosts of upcoming United Nations climate conferences, **including the United Arab Emirates, Azerbaijan, and Brazil also known as COP Presidencies' Troika**, have called for nations to align their **nationally-determined contributions (NDCs)** with the goal of **limiting global warming to 1.5 degrees Celsius**.

- They aim for these **aligned NDCs to be submitted by early 2025**.
- The plan advocates for comprehensive NDCs covering all greenhouse gases, **with emission reduction targets of 60% compared to 2019 levels by 2035**.

The **"COP Presidencies' Troika"** refers to a **collaborative effort among three countries** that have **hosted, or will host, consecutive sessions of the Conference of the Parties (COP)** to the United Nations Framework Convention on Climate Change (UNFCCC).

The Troika system is designed to **ensure continuity and cooperation in the leadership of these international climate conferences**.

Typically, the Troika consists of the current COP host country, the country that hosted the previous COP, and the country scheduled to host the subsequent COP session.

106. APPLICATION PROGRAMMING INTERFACE (API)

Context:

CERT-In and CSIRT-Fin’s whitepaper on API security is a step in the right direction.

What is API?

Aspect	Description
Definition	APIs facilitate communication between software components by providing a set of definitions and protocols. For instance, a weather app on your phone communicates with the weather bureau’s software system through APIs to display daily weather updates.
Importance	Integral for innovation in the digital sphere, empowering seamless integration and interoperability.
Usage	Widely used in various industries, including finance, healthcare, e-commerce, social media, and more.
Functionality	Allows applications to access and interact with the features or data of other applications or platforms.
Types	Includes Web APIs, RESTful APIs, SOAP APIs, GraphQL APIs, and more, catering to different use cases.
Benefits	Enhances efficiency, accelerates development, fosters collaboration, and enables cross-platform integration.
Security Challenges	Vulnerabilities include data breaches, unauthorized access, injection attacks, and denial-of-service attacks.
Security Measures	Implementing strong authentication, encryption, rate-limiting, input validation, and regular cyber security audits.
Emerging Technologies	Integration with artificial intelligence (AI) for anomaly detection, predictive analytics, and threat mitigation.
Future Trends	Increasing adoption of APIs in the Internet of Things (IoT), AI, machine learning, and blockchain technologies for enhanced functionality.
Government initiatives	Open Government Data platform (it has over 1 lakh APIs); API Setu
	Policy on Open Application Programming (government’s approach to the use of Open APIs to promote software interoperability)
	National Data Governance Policy (aims to standardize APIs for secure data management)
	National Data and Analytics Platform (or NDAP) (NITI Aayog’s initiative that hosts datasets from across India)

107. AI TOOL PREDICTS NEEM FRUIT METABOLITE CONTENT

Context:

Researchers **at Jawaharlal Nehru University’s School of Biotechnology** have developed an **Artificial Intelligence-based tool** to predict the **metabolite content in neem fruits, specifically azadirachtin, which is used as a biopesticide.**

- The **AI model analyses images of neem leaves and fruits to classify them as having either low or high azadirachtin content,** eliminating the need for **expensive and cumbersome analytical equipment** like **high-performance liquid chromatography (HPLC).**
- The model, trained using **deep learning frameworks and synthetic image augmentation,** achieved **high accuracy in classifying fruit metabolite content.**

An **Android app called Fruit-in-Sight** has been developed based on the best predictive model, enabling fruit pickers to quickly assess azadirachtin content in neem fruits in the field, empowering them to select fruits with high azadirachtin content efficiently.

This innovation is expected to **streamline the neem industry without additional cost, time, or effort.**

108. STATIO SHIV SHAKTI

Context:

The **International Astronomical Union (IAU)** has approved the **name 'Statio Shiv Shakti'** for the **landing site of Chandrayaan-3's Vikram lander.**

- The name '**Statio Shiv Shakti**' reflects the **duality of nature in Indian mythology, representing both masculine (Shiva) and feminine (Shakti) aspects.**
- This name aligns with IAU's guidelines, **which prohibit names with political, military, or religious significance.**

The IAU, responsible for **assigning names to planetary surface features, follows specific rules and conventions for naming.**

109. POWER LINES BAN RULES EASED IN GREAT INDIAN BUSTARD HABITAT

Context:

The Supreme Court has eased the **ban on high-power transmission lines** within the habitat of the **endangered Great Indian Bustard (GIB) in Rajasthan and Gujarat.**

- This decision comes after the **formation of an expert committee tasked with balancing conservation efforts and development goals.**
- The **GIB, listed as Critically Endangered, faces threats including collision with overhead transmission lines, prompting conservation efforts amid a dwindling population.**

Great Indian Bustard

Remaining bustard habitats

About Great Indian Bustard

- It is **India's most critically endangered bird**
- It is considered the **flagship grassland species** and is a symbol of the health of the grassland ecology.
- **Threats:** Power transmission lines, hunting, habitat loss due to agricultural expansion, and other factors.
- **Legal protection:** Schedule-I of the Wild Life (Protection) Act, 1972, (legal protection from hunting)
- **IUCN:** Critically Endangered

The population is mostly confined to Rajasthan and Gujarat (with a small population in Maharashtra, Karnataka, and Andhra Pradesh)

To know more Visit Insights IAS Daily Current Affairs

110. KERALA: MAN-ANIMAL CONFLICT DECLARED AS A STATE-SPECIFIC DISASTER

Context:

Recently, **Kerala has declared the man-animal conflict a state-specific disaster**, shifting responsibility from the forest department to the state disaster management authority.

- Previously, Uttar Pradesh **became the first state in India to declare** death through a man-animal conflict a state disaster and the deceased's family were mandated to give a compensation of Rs 5 lakh by state disaster management authority.

Current management vs. proposed change:

Aspect	Current Management	Proposed Change
Responsibility	Forest Department under the Wild-life Protection Act, 1972	State disaster management authority under the Disaster Management Act
Decision Making Authority	Chief Wildlife Warden	State Disaster Management Authority (Chief Minister at State Level)
District Level Authority	District Collector as the executive magistrate	District Collector as a Chairperson of District Disaster Management Authority
Intervention Capability	Limited by the Wildlife Protection Act	Enhanced powers to take decisive actions under Disaster Management Act 2005
Judicial Oversight	Decisions may be questioned in court under wildlife laws	Limited judicial interference due to provisions of the Disaster Management Act
Jurisdiction of Courts	Courts can entertain suits under relevant wildlife laws	Only the Supreme Court or High Court can entertain suits related to actions under Disaster Management Act, 2005 (Section 71)

Other State-Specific Disasters:

- Odisha and Kerala declared **snakebite** a **state-specific disaster in 2015.**
- Kerala declared **COVID-19** as a state-specific disaster in 2020.
- **Heat waves, sunburn, Sunstroke, Soil piping, Lightning and coastal erosion** were declared in state disasters

111. KRISHI INTEGRATED COMMAND AND CONTROL CENTRE (ICCC)

Context:

The Krishi Integrated Command and Control Centre (ICCC) was recently inaugurated by Agriculture ministry as a technological solution aimed at revolutionizing agricultural practices.

- It leverages state-of-the-art technologies such as artificial intelligence, remote sensing, and Geographic Information Systems (GIS) to collect and process extensive data on various agricultural parameters like temperature, rainfall, crop yields, and production estimates.

Features of ICCC:

- One of the primary objectives of the ICCC is to enable efficient decision-making in the agricultural sector by providing comprehensive monitoring and visualization of geospatial information.
- Aims to generate individual farmer-specific advisories through apps like Kisan e-mitra, leveraging AI and machine learning algorithms to customize recommendations based on farmer data, historical crop sowing information, and weather forecasts.
- The practical applications of the ICCC include providing soil health advisories, facilitating drought management actions, identifying regions for crop diversification, and serving as a repository for agricultural data.
- It aims to validate yield estimates and assist in evidence-based decision-making for efficient agricultural practices.

112. USAGE OF EMBEDDED SIM FOR MACHINE-TO-MACHINE COMMUNICATIONS

Context:

The Telecom Regulatory Authority of India (TRAI) has released recommendations on the 'Usage of Embedded SIM for Machine-to-Machine (M2M) Communications' following a request from the Department of Telecommunications (DoT).

- The recommendations aim to streamline the regulatory framework for M2M embedded SIM (eSIM) in India, especially for applications in various sectors like agriculture, transportation, healthcare, and industrial automation.

The Telecom Regulatory Authority of India (TRAI) is a government agency that regulates the telecommunications sector in India.

TRAI was established by an Act of Parliament on February 20, 1997, and its headquarters are in New Delhi.

TRAI's mission is to create conditions for the growth of telecommunications in India, and its objectives include: Providing a fair and transparent environment, facilitating fair

competition in the market, and increasing broadband penetration in India.

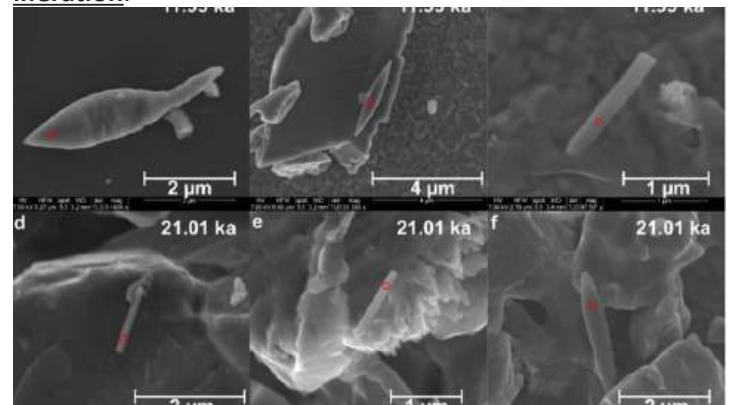
113. MAGNETIC FOSSILS

Context:

Scientists from the CSIR-National Institute of Oceanography, Goa, have discovered a 50,000-year-old giant magneto fossil in the Bay of Bengal, making it one of the youngest magneto fossils found to date.

- Magneto fossils are fossilized remains of magnetic particles created by magnetotactic bacteria, which align themselves along Earth's magnetic field.
- These bacteria, first described in the 1960s, create tiny iron-rich crystals of magnetite or greigite, aiding navigation in changing oxygen levels.
- Using magnetic analyses and electron microscopy, scientists examined a sediment core from the Bay of Bengal, revealing needle, spindle, bullet, and spearhead-shaped magnetofossils, alongside conventional ones.
- The sediment's origin was traced to river discharge, which supplied reactive iron, combining with organic carbon in low-oxygen conditions to foster magnetotactic bacteria growth.

The presence of these fossils indicates prolonged suboxic conditions in the Bay of Bengal, supporting bacterial proliferation.



114. MEERKAT RADIO TELESCOPE

Context:

Astronomers using the MeerKAT radio telescope, initially aiming to detect hydrogen gas in a specific galaxy, made a surprising discovery by identifying 49 previously unknown galaxies.

- The MeerKAT telescope, a precursor to the Square Kilometre Array (SKA), showcased its potential in this discovery.

The MeerKAT radio telescope is a 64-antenna telescope in the Northern Cape region of South Africa that was launched in 2018

It's operated by the South African Radio Astronomy Observatory (SARAO) and is part of the Square Kilometre Array

(SKA) initiative

Scientists use the **MeerKAT to study hydrogen activity and pulsars**, and the telescope could help **deepen our understanding of how the universe formed**.

115. CAPTIVE ELEPHANT (TRANSFER OR TRANSPORT) RULES, 2024

Context:

New rules for elephant transfers, called the Captive Elephant (Transfer or Transport) Rules, 2024, have been introduced by the Centre, **liberalizing conditions for elephant transfers**.

What are Captive Elephants?

Captive elephants are **elephants that are owned and kept by humans**, often for various purposes such as historical roles in forest management, timber transport, religious ceremonies, or entertainment. They are distinct from wild elephants and are subject to regulations regarding their care and management.

Background:

Captive elephants, regulated by the Wildlife Protection Act (WPA), are classified as **Schedule 1 species**, prohibiting their capture or trade. However, they can be translocated for specific reasons such as education, research, population management, or zoo specimens.

Previously, strict rules governed the transfer of captive elephants under the **Wildlife Protection Act**, with permission required from the **Chief Wildlife Warden**. Amendments in 2021 allowed transfers for religious or other purposes.

What are the updated Rules?

The **updated rules now allow transfers when the owner can't maintain the elephant or for better upkeep as deemed fit by the Chief Wildlife Warden**. **Health and habitat suitability assessments** are required before transfers within or between states, with simplified permissions for interstate transfers.

Concerns:

These changes have raised questions about wildlife trafficking and the treatment of elephants, particularly with the establishment of large private zoos like the one in Jamnagar, Gujarat.

Elephant

African Elephants

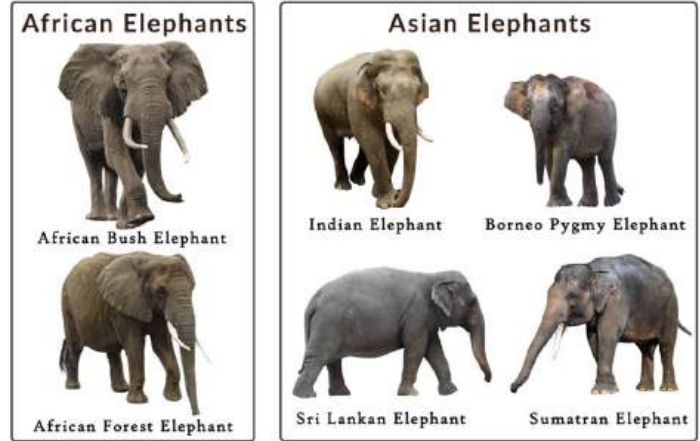
There are two subspecies of African elephants, the Savanna (or bush) elephant and the Forest elephant.

IUCN:
African Savanna: **Endangered**.
African Forest: **Critically Endangered**

Asian Elephants

There are three subspecies of Asian elephant which are the Indian, Sumatran and Sri Lankan

IUCN Red List: **Endangered**.
World Elephant Day: **August 12**



Comparison table between African and Asian elephant



Feature	African Elephant	Asian Elephant
Size	Larger, weighing between 4000-8000 kg	Smaller, weighing between 3000-6000 kg
Ears	Large fan-shaped ears (resembling shape of African continent)	Smaller rounded ears
Skin Texture	Skin is more wrinkled	Comparatively smoother skin
Head Shape	Single dome shape	Twin domed head
Tusk Growth	Both male and female African elephants grow tusks and are larger than Asian elephants	Only some male Asian elephants have tusks
Habitat	Savannahs and forests of Africa	Forests, grasslands, and scrublands of Southeast Asia and South Asia
Trunk Tips	Have two finger-like tips on the trunk	Have only one finger-like tip on the trunk
Social Behaviour	Tend to live in larger herds	Tend to live in smaller family groups
Lifespan	70 years	48 years

116. NATIONAL DISASTER RESPONSE FUND

Context:

The **Karnataka government**, facing severe drought conditions, has taken an **unprecedented step by approaching the Supreme Court** against the Union government **for the delayed release of drought relief funds from the National Disaster Response Fund (NDRF)**.

- The state, grappling with **extensive crop loss and water scarcity**, had submitted a memorandum to the **Centre requesting monetary aid**.

- The petition filed in the Supreme Court cites **violations of fundamental rights guaranteed by the Constitution, particularly Articles 14 and 21**, pertaining to equality under the law and protection of life and personal liberty respectively.

The **National Disaster Response Fund (NDRF)** is a governmental fund set up in India to specifically **tackle situations arising out of natural calamities or disasters**.

It was established based on the **recommendations of the 13th Finance Commission in 2010**, replacing the erstwhile **Calamity Relief Fund (CRF)** and the **National Calamity Contingency Fund (NCCF)**. The NDRF is managed by the **Ministry of Home Affairs**.

117. POEM-3

Context:

ISRO achieved a significant milestone with its **PSLV Orbital Experimental Module-3 (POEM-3) successfully re-entering Earth's atmosphere without leaving any debris in orbit**.

- This achievement, following the **PSLV-C58/XPoSat mission**, is termed another milestone by ISRO.
- The operation involved **converting the final stage of the PSLV into POEM-3 and deorbiting it from 650 km to 350 km altitude**.
- This expedited re-entry process **aimed to minimize risks associated with accidental break-ups**.
- POEM-3 carried **nine experimental payloads, facilitating technology demonstrations and scientific experiments**.

This initiative aims to safeguard **orbital environments, ensuring their viability for current and future space missions**.

118. REPORTS IN NEWS

Report Title	Key Points
'Enabling a Circular Economy in India's Solar Industry: Assessing the Solar Waste Quantum'	Developed by MNRE and CEEW under NITI Aayog's Action Plan for CE - Solar Panels
	India's 66.7 GW capacity (FY23) has generated about 100 kt of waste , increasing to 600 kt by 2030
	Solar wastes contain critical minerals like silicon, copper, etc., toxic metals like lead and cadmium, and metals with high economic value
	Recommendations include database maintenance, recycling promotion, and technology innovation
Unicorn 2.0: Adding the Next Trillion Report	Released by the Confederation of Indian Industry (CII) , assesses Unicorn 1.0 impact and outlines Unicorn 2.0 vision.
	Unicorn 1.0 (2010-2023) contributed 10-15% to GDP, had 100+ unicorns, and improved inclusivity and sustainability
	Unicorn 2.0 (2024-35) aims to add \$1 trillion to GDP with shifts like leading startups, innovation focus, and governance improvements
Global Trade Update	Released by UNCTAD, reports a 14% rise in services exports and a 6% decline in goods export from India in 2023
	Forecasts rebound in international trade in 2024
	Warns of logistical challenges like shipping disruptions in the Red Sea, Black Sea, etc., affecting costs and supply chains

Reports	Description
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<p>India Gaming Report 2024</p>	<p>Released by Interactive Entertainment and Innovation Council (IEIC) and WinZO</p> <p>Key findings: India is the largest gaming market with 568 million users, accounting for 1 in 5 online gamers globally. The Indian gaming market is expected to reach \$6 Billion by 2028. The number of Indian gaming companies surged from 25 in 2015 to over 1400 in 2023</p> <p>Regulations: MeitY acts as the nodal agency for online gaming regulations and development; Draft National AVGC Policy, and National AVGC Centre of Excellence; 100% FDI allowed in the gaming sector utilizing automatic route within Electronic System and IT & BPM sectors</p>
<p>Food Waste Index (FWI) Report 2024</p>	<p>Released by the United Nations Environment Programme (UNEP). The report co-authored with WRAP (Waste and Resources Action Programme) was published ahead of International Day of Zero Waste (observed annually on 30 March)</p> <p>Key Findings: Households across all continents wasted over 1 billion meals a day in 2022, while 783 million people were affected by hunger and a third of humanity faced food insecurity. Food Waste generates an estimated 8–10% of global greenhouse gas emissions.</p> <p>Issues: Due to the lack of robust cold chains, hotter countries generate more food waste per capita in households; Fragmented food system.</p> <p>Suggestions: Systemic action through the Public-Private Partnerships (PPPs) model. Example, Courtauld Commitment 2030 (UK), Australian Food Pact etc; Establish a roadmap or delivery plan, targeting priority areas or “hotspots” of waste</p> <p>The report aligns with SDG 12.3, aiming to reduce food loss and waste by 2030. This includes reducing post-harvest losses (measured by the Food Loss Index (FLI) and managed by FAO) and halving per capita global food waste (measured by the Food Waste Index (FWI) and managed by UNEP)</p> <p>About WRAP: It is a climate action NGO (established in the UK in 2000) working to tackle the causes of the climate crisis and give the planet a sustainable future</p>
<p>World Energy Transitions Outlook Brief 2024: Tracking CoP 28 outcomes</p>	<p>Released by IRENA ((founded 2009; HQ: UAE): The International Renewable Energy Agency is an inter-governmental organization mandated to facilitate cooperation, advance knowledge, and promote the adoption and sustainable use of renewable energy.</p> <p>Key Findings: 2023 added 473 GW (73% contributed by Solar energy) additional Renewable to the global energy mix; However, annual additions are still insufficient and must reach almost 1100 GW to meet the tripling target; Asia was the leader in renewable deployment with a growth of over 20%, driven by China.</p> <p>New EV models, financial incentives and improving charging infrastructure are key drivers for this</p> <p>Challenges: Rising financing costs; Supply chain issues</p> <p>Recommendations to achieve tripling targets include reforming multilateral finance mechanisms, supporting infrastructure, and robust policy frameworks.</p>
<p>International Finance Corporation (IFC) Green and Social Bond Impact Report 2023</p>	<p>About IFC: IFC (founded 1956; HQ: Washington DC, USA) is an international financial institution (part of the World Bank) that offers investment, advisory, and asset-management services to encourage private-sector development in less developed countries.</p> <p>Key Findings: \$2 billion raised through green bonds is expected to reduce over 3 million metric tons of carbon dioxide equivalent per year; Over \$1 billion raised through social bonds will cater for sectors like Agribusiness, Gender finance, Education, etc.</p> <p>About Green Bonds: Debt securities designated to finance environment-friendly projects like Sustainable Water and Waste Management, Green Buildings, Pollution control etc. In 2022, the Ministry of Finance approved India’s First Sovereign Green Bonds (SGBs) Framework.</p> <p>India’s First Green Bond was issued by Yes Bank Ltd in 2015. In 2023, India issued the first tranche of its first SGBs worth Rs. 80 billion</p> <p>About Social Bonds: Financial instruments issued by governments; and corporations to raise funds for projects to address social issues like affordable housing, healthcare etc.</p> <p>In 2023, the National Bank for Agriculture and Rural Development (NABARD) raised more than Rs. 1000 crore via social bonds.</p>

<p>Western Ghat Regions (WGR) Soil Erosion Study by IIT-Bombay</p>	<p>Key findings: Portions of WGR in Tamil Nadu and Gujarat registered 121% and 119% increase in soil erosion respectively. Across the whole of WGR, the increase in erosion rate was 94%. In absolute terms, Maharashtra had the highest 79 tons per hectare per year soil loss in 2020, while Kerala had the lowest loss.</p> <p>Protection Measures: Gadgil committee and Dr. K. Kasturirangan committee to assess WG's ecology; Western Ghats Natural Heritage Management Committee under Ministry of Environment, Forest and Climate Change</p>
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119. BLACK CARBON

Context:

Black carbon, emitted from incomplete combustion of biomass and fossil fuels, is a significant contributor to global warming and poses health risks.

- In India, the residential sector is the largest source of black carbon emissions.

Prioritizing black carbon reduction aligns with India's global commitments to decarbonization and sustainable development goals, potentially preventing thousands of premature deaths annually.

Black carbon is a component of fine particulate matter (PM) air pollution. It's also known as soot.

Black carbon is a light-absorbing particle that contributes to climate change by releasing heat energy into the atmosphere. It's the second most important contributor to global warming and is considered a short-lived climate pollutant.

Black carbon is formed by the incomplete combustion of wood and fossil fuels. The process also creates carbon dioxide (CO), carbon monoxide, and volatile organic compounds.

Black carbon particles can also settle on the surface of snow and ice, accelerating its melting.

120. ICG SHIP SAMUDRA PAHEREDAR

Context:

ICG Ship Samudra Paheredar recently arrived at Manila Bay, Philippines, as part of an overseas deployment to ASEAN countries. This deployment aims to showcase the Indian Coast Guard's marine pollution response capabilities and strengthen bilateral cooperation with the Philippine Coast Guard.

Built by ABG Shipyard, Surat, it is stationed on the East Coast of India in Vishakhapatnam, Andhra Pradesh. Equipped with advanced pollution response and control equipment, including containment and recovery devices for oil spills, it plays a vital role in safeguarding marine environments. Additionally, it boasts special features like integrated platform management and power systems, along with the capability to oper-

ate one twin-engine ALH/Chetak helicopter.

121. OPERATION SANKALP

Context:

Launched by the Indian Navy in December 2023, the operation completed 100 days, operating in key areas including the Gulf of Aden, Arabian Sea, and off the East Coast of Somalia. Its objective is to safeguard India's maritime interests, counter maritime threats, combat piracy resurgence, and curb narcotics trade in the Indian Ocean Region.

122. T+0 SETTLEMENT CYCLE

Context:

India's stock exchanges have launched a beta version of same-day transaction settlement, known as T+0, for select cash segment stocks.

- Currently, in a limited rollout phase, T+0 enables trades to settle on the same day they occur, offering benefits such as faster access to funds and increased flexibility for investors.
- This new system is being tested with around 25 stocks and a select group of brokers, with the aim of assessing its effectiveness and resolving any issues before wider implementation.
- T+0 settlement allows investors to promptly reinvest funds, react quickly to market changes, and potentially reduce counterparty risk.

After following a T+5 settlement cycle, India moved to T+3 in 2002 and further reduced it to T+2 in 2003. In 2021, Sebi introduced the T+1 system before making it the norm in 2023.

The settlement cycle is the time required for a trade to be settled. On Indian exchanges, the settlement cycle for all traded instruments is T+1 day, with T representing the trading day.

123. DOMESTICALLY SYSTEMICALLY IMPORTANT INSURANCE COMPANIES

Context:

In the financial year 2023-24, three domestic insurance companies have been identified as systemically important for the stability of the economy:

- **Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC), and New India Assurance Co. Ltd.**
- These companies are considered **“too important to fail,”** and there is an expectation of government support in case of financial distress.
- Designated as Domestic Systemically Important Insurers (D-SIIs), **they play a critical role in ensuring the availability of insurance services to the national economy.**
- **D-SIIs are subject to additional regulatory measures to manage systemic risks and moral hazard issues,** including enhancing corporate governance and implementing robust risk management frameworks.

124. MEME COINS

Context:

Meme coins, a subset of cryptocurrencies, have gained popularity within the **digital currency realm.**

- Originating from **internet meme culture,** these coins are **often created as humorous tributes and lack substantial underlying value.**
- Their key characteristics include **extreme volatility, large or uncapped supplies, and easy creation facilitated by blockchain technology.**
- **Dogecoin and Shiba Inu are notable examples of meme coins,** with quirky branding and significant community engagement.

However, investing in meme coins carries **risks due to their speculative nature and lack of fundamental value.**

125. STATINS

Context:

A study conducted by researchers in China has identified a mechanism through which **statins, commonly prescribed for cardiovascular disease,** can increase the **risk of glucose intolerance and diabetes.**

- The study found that a **gut microbiome deficient in Clostridium bacteria** could lead to **altered bile acid profiles, affecting glucose metabolism.**

Statins are a **class of drugs that lower cholesterol and reduce the risk of cardiovascular disease.**

Statins work by **reducing the amount of cholesterol** the liver makes and helping it remove cholesterol already in the blood.

They also **lower low-density lipoprotein (LDL), or “bad” cholesterol,** and increase high-density lipoprotein (HDL), or **“good” cholesterol.**

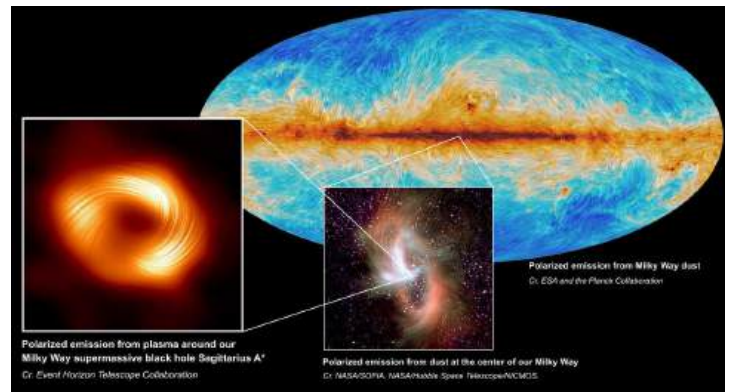
Statins can also **help stabilize plaque,** a waxy substance that can build up in arteries and interfere with blood flow.

126. TWISTED MAGNETIC FIELD

Context:

Astronomers have detected a **twisted magnetic field** in a spiral pattern around the **Milky Way’s supermassive black hole,** Sagittarius A* (Sgr A*), indicating **previously unknown features of the powerful object.**

- The term “twisted” magnetic field refers to a **magnetic field that has a spiral or helical shape rather than being uniformly aligned.**
- This discovery sheds light on **previously unknown qualities of the supermassive black hole at the centre of our galaxy,** indicating similarities with the **magnetic field surrounding another black hole known as M87*.**
- The twisted magnetic field structure suggests the **potential for the Milky Way’s black hole to power efficient jets of material into space, similar to those observed in M87*.**



127. START 2024

Context:

ISRO will conduct the **Space Science and Technology Awareness Training (START) 2024** program, aiming to **attract young individuals to the fields of space science and technology.**

- The training will cover **introductory topics in various aspects of space science and technology,** along with sessions on **Indian space exploration programs and research opportunities.**

128. MUSHK BUDIJI RICE

Context:

Researchers have **uncovered the factors contributing to the unique aroma of mushk budiji rice,** an indigenous variety grown in the Kashmir Himalaya.

- Mushk budiji rice, **known for its rich aroma and taste,** was **nearly extinct due to factors like rice blast disease and low yield,** but a revival program initiated in 2007 has seen its slow resurgence.

Factors contributing to aroma:

- The researchers identified **around 35 aromatic com-**

pounds in the rice variety across eight altitudes between 5,000 and 7,000 feet in the valley.

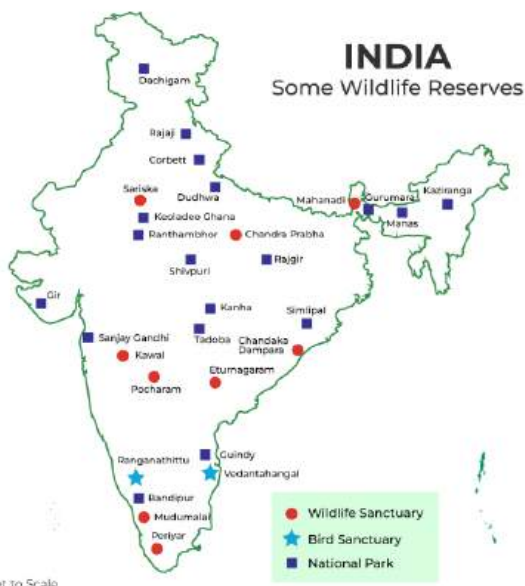
- They discovered compounds contributing to the rice's aroma, **notably 2-acetyl-1-pyrroline (2-AP) found at higher altitudes.**
- Additionally, gene-expression analysis revealed **how environmental factors influence the rice's flavor profile through its genes.**

129. ETURNAGARAM & AMRABAD WILDLIFE SANCTUARIES

Context:

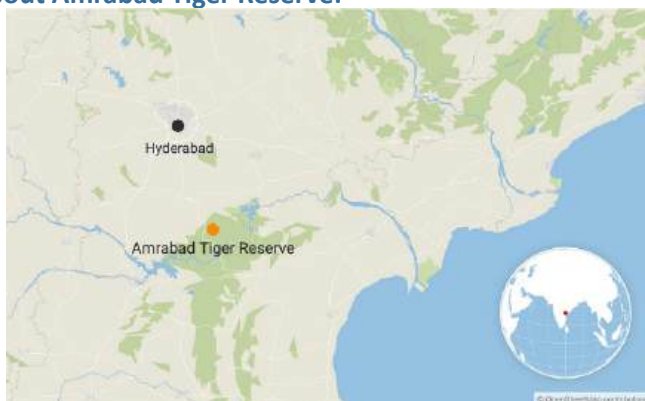
Telangana is currently grappling with **forest fires in Tadvai region of Eturnagaram Wildlife Wildlife Sanctuary in Mulugu and Amrabad Tiger Reserve.**

About Eturnagaram Wildlife Sanctuary:



- **The Eturnagaram Wildlife Sanctuary is located near Warangal, Telangana, and lies on the border of Madhya Pradesh, Maharashtra, and Andhra Pradesh.**
- It is traversed by the rivers **Dayyam Vagu and Godavari.**
- The sanctuary is home to various flora including **bamboos, maddi, dry deciduous teak, thiruman, and madhuca.**
- As for fauna, it harbors species such as **the sloth bear, chinkara, nilgai, black buck, among others.**

About Amrabad Tiger Reserve:



- **Amrabad Tiger Reserve is located in the Indian state of Telangana.**
- It is one of the **largest tiger reserves in the country**, covering an area of approximately 2,800 square kilometers.
- The reserve is situated on the **border of Telangana and Andhra Pradesh**, encompassing **parts of the Nallamala Hills.**
- It was established with the aim **of conserving the endangered Bengal tiger and its habitat.**
- Apart from tigers, the reserve is home to various other species of wildlife including **leopards, sloth bears, Indian gaurs, and several species of birds and reptiles.**

130. CENTRAL POLLUTION CONTROL BOARD

Context:

The Central Pollution Control Board (CPCB) has collected over Rs 777 crore in environment protection charge (EPC) and environmental compensation (EC) funds, but only about Rs 156 crore, or 20%, has been utilized.

The Central Pollution Control Board (CPCB) receives compensation under two categories:

1. **Environment Protection Charge (EPC):** EPC, mandated by the Supreme Court, involves a **one per cent charge on specified new diesel** vehicles registered in Delhi and NCR.
2. **Environmental Compensation**, based on the Polluter Pay Principle and ordered by the National Green Tribunal (NGT), is utilized for various environmental protection measures, including strengthening laboratories and monitoring networks, implementing NGT orders, and capacity building for pollution control boards.

About CPCB:

The Central Pollution Control Board (CPCB) is a **statutory organization** established in **September 1974 under the Water (Prevention and Control of Pollution) Act, 1974.** It was later given powers and functions under the **Air (Prevention and Control of Pollution) Act, 1981**, and serves as a field formation providing technical services to the **Ministry of Environment and Forests under the Environment (Protection) Act, 1986.** Its key functions include promoting the cleanliness of streams and wells to prevent water pollution and improving air quality to prevent air pollution nationwide.

131. RICE WITH LOW METHANE EMISSION

Context:

The IRRI-South Asia Regional Centre (ISARC) aims to **develop rice varieties with low methane emissions and improve the**

productivity of nutritious rice.

- ISARC is promoting agronomic practices like Dry Seeded Rice (DSR) and Alternate Wet and Drying (AWD) to achieve these goals.
- The focus was discussed during the 7th ISARC Coordination Committee meeting, attended by officials from India, Bangladesh, Sri Lanka, and Nepal.

132. COVINET

Context:

The World Health Organization (WHO) has launched a global network of laboratories named CoViNet, aimed at identifying and monitoring potential novel coronaviruses.

- CoViNet will not only focus on SARS-CoV-2 but also assess other coronaviruses like MERS-CoV, enhancing laboratory capabilities.
- The network will include animal health and environmental surveillance to enable timely risk assessment, informing WHO policies and protective measures.
- CoViNet aims to support the establishment of more laboratories in low- and middle-income countries to monitor MERS-CoV and other significant coronaviruses.
- CoViNet comprises 36 laboratories from 21 countries across all six WHO regions, including three from India.

Coronaviruses, being RNA viruses, are a significant concern in this context, with some causing mild illnesses like the common cold while others, such as SARS-CoV, MERS-CoV, and SARS-CoV-2, have led to severe outbreaks and pandemics.

133. WHITE RABBIT COLLABORATION

Context:

CERN has introduced the White Rabbit Collaboration to promote the adoption of its White Rabbit (WR) technology, initially developed to synchronize devices in particle accelerators with sub-nanosecond precision.

- This technology has applications beyond particle physics and has been incorporated into the Precision Time Protocol (PTP) standard.
- Unlike other technologies, WR is open-source and based on standards, allowing companies and institutes to adapt it to their needs.

White Rabbit (WR) is a technology developed at CERN, the European Organization for Nuclear Research, to provide time synchronization and data transfer for the LHC accelerator chain.

WR is a deterministic Ethernet-based network that provides sub-nanosecond accuracy and picosecond precision of synchronization.

It uses the Precision Time Protocol to achieve sub-nanosecond accuracy, which allows for precise adjustment of clock

phase and offset.

WR also provides the flexibility and modularity of real-time Ethernet networks.

134. KALAM-250

Context:

Skyroot Aerospace successfully conducted a test firing of the Stage-2 propulsion system, named Kalam-250, of the Vikram-1 space launch vehicle.

- Stage 2 is crucial for propelling the launch vehicle from the atmospheric phase to outer space.
- The Kalam-250 utilizes high-strength carbon composite materials and a solid fuel system with an Ethylene-Propylene-Diene terpolymers (EPDM) Thermal Protection System (TPS).
- It also features a carbon ablative flex nozzle and high-precision electro-mechanical actuators for thrust vector control.

135. UNESCO GLOBAL GEOPARKS NETWORK

Context:

UNESCO has added 18 new sites to its Global Geoparks network, bringing the total to 213 across 48 countries.

- These new geoparks are located in Belgium, the Netherlands, Brazil, China, Croatia, Denmark, Finland, France, Greece, Hungary, Poland, Portugal, and Spain.
- Each geopark showcases unique geological features and cultural heritage, contributing to sustainable development and promoting local communities

UNESCO's Global Geoparks (UGGPs) emerged in 2015, building upon the geopark concept that originated in the mid-1990s

UGGPs are unified geographical areas recognized for their international geological significance and managed with a holistic approach encompassing protection, education, and sustainable development.

They are governed by a body with legal recognition under national legislation. Designation as a UGGP is not permanent; it is reassessed every four years.

Additionally, membership in the Global Geoparks Network (GGN) is mandatory for UGGPs, promoting collaboration and networking among geoparks worldwide.

SPORTS CORNER

1. KIRTI PROGRAM

Context:

The Union Sports Minister inaugurated the Khelo India Rising Talent Identification (KIRTI) program in Chandigarh.

About KIRTI Programme:

About Programme	Description
Aimed at	It is a scouting and training programme for School children between nine and 18 years of age, under the Khelo India Scheme
Objectives	1. To hunt talent nationwide; 2. To use sports to combat drug addiction and distractions from technology
Assessments	Aims to conduct 20 lakh assessments throughout the year through Talent Assessment Centers
Reach	Aims to reach every block in the country and connect with children interested in sports but lacking opportunities
Launch Details	Launched across 50 centres in India , assessing 50,000 applicants in the first phase across 10 sports including athletics, boxing, wrestling, hockey, football, and wrestling
Selection Methodology	Transparent selection process based on Information Technology with data analytics using Artificial Intelligence
About the Khelo India Scheme	It is a central sector scheme introduced by the Indian government in 2017 and serves as a dynamic platform to nurture sports talent and revive the sporting culture of India. It encompasses the:
	Khelo India Youth Games (KIYG) (commenced 2018): Annual national competition for youngsters representing states
	Khelo India University Games (KIUG) (commenced 2020): Showcases university students' talent in sports
	Khelo India Winter Games (Commenced 2020): Promotes winter sports in India

MAPPING

International

1. AGALEGA ATOLL (MAURITIUS)

Context:

The Prime Ministers of India and Mauritius have **jointly inaugurated an airstrip and the St James Jetty on North Agaléga Island** in the Indian Ocean.

The joint inauguration signifies:

For Mauritius:

- **Economic benefits:** Reduced travel time, job creation, and tapping into tourism potential.
- **Strategic advantages:** Enhanced maritime surveillance and security capabilities through Coast Guard deployment.

For India:

- **Strengthening India-Mauritius relations:** Enhanced goodwill and multi-dimensional cooperation.
- **Geostrategic significance:** Supports India's SAGAR initiative, counters China's "string of pearls" strategy (by India's "Necklace of Diamond"), enhances Indian Ocean surveillance, and reinforces India's role as a peace provider in the region.

About Agaléga

It is a atoll, comprising two islands, North and South Agaléga. It is governed by Mauritius and used by India for various purposes. Despite this, it remains under the sovereignty of Mauritius. **A 2015 memorandum of understanding on India–Mauritius military** cooperation envisaged developing the Agaléga islands for an Indian military base.

Note: An atoll is a **ring-shaped coral reef**, island, or series of islets that encircle a lagoon, often found in warm, tropical waters.



2. BLUE LINE

Context:

US envoy Amos Hochstein emphasized the importance of pursuing a diplomatic solution to end the escalating hostilities between Israel and Hezbollah (in Lebanon), along the Blue Line, demarcated by the United Nations.

What is Blue Line?

The Blue Line is a border demarcation **established by the United Nations in 2000** after Israeli troops withdrew from southern Lebanon. It serves as the boundary between **Lebanon and Israel**, aiming to prevent conflicts and provide a basis for security arrangements in the region.



3. CANALS OF THE WORLD

Context:

In early 2024, **global trade faced disruptions** due to attacks in the Red Sea and a drought at the Panama Canal. This led to a **50% drop in Suez Canal trade and a 32% decline in Panama Canal trade**. These disruptions may **hamper supply chains**, lead to **inflation**, and affect official trade statistics.

The **Suez Canal** typically handles about **15% of global maritime trade volume**, while the Panama Canal accounts for approximately **5% of global maritime trade**.

Initiatives for restoring peace include:

- Operations Prosperity Guardian:** Led by the US, it's a multinational security effort under the Combined Maritime Forces, concentrating on security in the Red Sea. Members include the UK, Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles, and Spain.
- Operation Aspides:** Introduced by the EU to enhance regional stability in the

Major Canals of the World:

Canal Name	Description
Suez Canal	Connects the Mediterranean Sea to the Red Sea , facilitating maritime trade between Europe and Asia.
Panama Canal	Connects the Atlantic Ocean to the Pacific Ocean , providing a shortcut for ships travelling between the two oceans.
Kiel Canal	Links the North Sea with the Baltic Sea , providing a shortcut for ships travelling between the two seas.

Corinth Canal	Cuts through the Isthmus of Corinth in Greece , connecting the Gulf of Corinth with the Saronic Gulf .
Suez-Mediterranean Pipeline	Carries crude oil from the Red Sea to the Mediterranean Sea , bypassing the Suez Canal for oil transportation.
Welland Canal	Connects Lake Ontario to Lake Erie , bypassing Niagara Falls and facilitating shipping in the Great Lakes region.
Erie Canal	Links the Great Lakes with the Hudson River , providing a navigable water route from the Atlantic Ocean to the Great Lakes.
Amsterdam-Rhine Canal	Connects Amsterdam to the Rhine River , serving as an important waterway for transportation and trade in the Netherlands.
Strait of Hormuz	Located between Oman and Iran , it's a critical chokepoint for global oil transportation, connecting the Persian Gulf with the Gulf of Oman .
Bosporus Strait	Separates European and Asian Turkey , serving as a key passage for maritime traffic between the Mediterranean and the Black Sea.
Strait of Malacca	Connects the Indian Ocean to the South China Sea , serving as one of the busiest and most important shipping lanes in the world.
Strait of Gibraltar	Links the Atlantic Ocean to the Mediterranean Sea , serving as a strategic maritime route between Europe and Africa.
English Channel	Separates southern England from northern France , serving as a major maritime route connecting the North Sea to the Atlantic Ocean.



4. DARIEN GAP

Context: The Darien Gap, a dense jungle spanning northern Colombia and southern Panama, has become a perilous route for migrants seeking asylum in the US.

What is Darien Gap?

The Darién Gap is a rugged region in the Isthmus of Darién, connecting Central and South America. It comprises dense forests and mountains in Panama's Darién Province and Colombia's Chocó Department. Home to indigenous communities, the terrain varies from flat marshlands to mountainous rainforests. With no roads crossing it, travel is challenging and often conducted by boat or on foot. Despite the dangers, increasing violence and limited legal immigration options in their home countries have driven a surge in crossings, primarily by Venezuelans but also by Haitians, Chinese, Afghans, and others.



5. GULF OF TONKIN

Context: Vietnam calls for respect of international law following China's establishment of a baseline in the Gulf of Tonkin. The move raises concerns amid overlapping claims in the South China Sea, but both countries have historically

maintained friendlier relations in the Gulf of Tonkin.

The Gulf of Tonkin, situated in the **South China Sea, borders Tonkin in northern Vietnam and South China.** It is bordered by Vietnam's northern coastline to the west and northwest, China's Guangxi Zhuang Autonomous Region to the north, and the Leizhou Peninsula and Hainan Island to the east. **The Gulf of Tonkin incident in 1964** heightened U.S. involvement in the **Vietnam War.**



6. BARBERTON GREENSTONE BELT

Context:

The oldest evidence of **earthquakes** was discovered in **3.3 billion-year-old rocks** from Africa, indicating early **plate tectonics.**

What is the Barberton Greenstone Belt?

The Barberton Greenstone Belt (similar to New Zealand's geological features) is a geological formation in **southern Africa** (on the **eastern boundary of the Kaapvaal Craton** in South Africa.) that provides one of the **most extensive geological records** for Earth between **3.2 billion and 3.6 billion** years ago. It consists of ancient rocks and provides **evidence of early Earth conditions**, including signs of seismic activity, early plate tectonics, and potential impact on the evolution of life.

The Barberton Greenstone Belt's outcrops were added to **UNESCO's World Heritage Sites** list in 2008 under the name **'Barberton Makhonjwa Mountains'.**



7. OPERATION INDRAVATI (HAITI)

Context:

Operation Indravati is **India's initiative to evacuate its citizens from Haiti** amidst the country's turmoil. **Launched on March 21**, it aims to transfer **Indians to the neighbouring Dominican Republic** due to escalating violence and chaos in Haiti.

About Haiti:

Haiti is a **Caribbean country sharing the island of Hispaniola** with the Dominican Republic. It's the **third-largest Caribbean** nation. Haiti's history includes **political instability, foreign occupation, and autocratic rule** until relatively recent democratic reforms. However, Haiti has been under a **state of emergency after some armed groups attacked the country's largest prison** in Port-au-Prince earlier this month



8. INDIA MOZAMBIQUE TANZANIA (IMT) MARITIME TRILATERAL EXERCISE

Context:

INS Sujata and INS Tir have entered the harbour phase of the India-Mozambique Tanzania (IMT) maritime trilateral exercise.

Phases:

- 1. Harbour Phase (March 21st to March 24th, 2024):** Activities include a Planning Conference, joint harbour training sessions on various aspects like Damage Control, Fire Fighting, Visit Board Search and Seizure procedures, Medical Lectures, Casualty Evacuation, and Diving operations.
- 2. Sea Phase:** Focuses on practical exercises such as countering asymmetric threats, Visit Board Search and Seizure procedures, boat handling, manoeuvres, firing exercises, and joint Exclusive Economic Zone (EEZ) surveillance.

These exercises demonstrate India’s and the Indian Navy’s dedication to bolstering maritime security and cooperation with neighbouring countries in the Indian Ocean Region while advancing SAGAR (Safety and Growth for All in the Region).

Mozambique and Tanzania

Mozambique is a country in southeast Africa bordered by the Indian Ocean to the east, Tanzania to the north, Malawi and Zambia to the northwest, Zimbabwe to the west, and Eswatini and South Africa to the southwest. The capital and largest city is Maputo.

Tanzania is a country in East Africa within the African Great Lakes region. It borders Uganda to the north; Kenya to the northeast; the Indian Ocean to the east; Mozambique and Malawi to the south; Zambia to the southwest; and Rwanda, Burundi, and the Democratic Republic of the Congo to the west



9. KHORASAN

Context:

The gunmen, associated with ISIS-K (Islamic State Khorasan), carried out a shooting spree at Moscow’s Crocus City Hall, resulting in the deaths of at least 143 people and injuries to hundreds more.

ISIS-K, or Islamic State Khorasan, is a terrorist organization that emerged in eastern Afghanistan in late 2014. It is one of the most active ISIS affiliates, known for its extreme brutality.

The group’s name “Khorasan” refers to the historical region that includes parts of Iran, Afghanistan, and other Central Asian countries. The name comes from Persian and means “where the sun arrives from”.



10. VIETNAM’S MEKONG DELTA

Context:

Rising saltwater levels threaten **Vietnam’s Mekong Delta**, causing nearly \$3 billion in annual crop losses. The region, known as **“Vietnam’s rice bowl,”** faces intensified saltwater intrusion due to rising sea levels, droughts, and other factors. This could result in significant **damage to agriculture, particularly in the southern Ca Mau province.**

About the Mekong Delta in Vietnam:

It is a **wet coastal area of over 40,500 km²** where the **Mekong River meets the sea.** It’s a **vital agricultural and aquacultural region**, with a history dating back to the 4th century BC. The area is renowned for its **biodiversity but is also vulnerable to climate change** and related issues like sea level rise and saltwater intrusion.

About the Mekong River

It is one of the world’s longest, flows through East and South-east Asia, spanning 4,909 km. Originating from the **Tibetan Plateau**, it traverses **six countries before reaching southern Vietnam.** Its **seasonal fluctuations and natural obstacles** hinder navigation, yet it remains a crucial trade route.

Read about the [Mekong Ganga Cooperation \(MGC\) Mechanism: Here](#)

India

11. KULASEKHARAPATTANAM (TN)

Context:

Recently, PM laid the **foundation stone for India’s second spaceport at Kulasekharapattanam, Tamil Nadu.**

The new spaceport is **dedicated to Small Satellite Launch Vehicles (SSLVs)** developed by the private sector. Operational in about two years, it will **exclusively serve private sector launches.**

The SSLV is a cost-effective, flexible launch vehicle capable of deploying satellites up to 500kg into a 500-km orbit. Additionally, plans for a **small space manufacturing park** near the spaceport aim to further support private sector initiatives.

The new spaceport has advantages over the Sriharikota facility:

1. **Close to the equator**, saving fuel
2. Rockets can **launch directly south**, avoiding detours over Sri Lankan Airspace
3. **Proximity to ISRO’s Propulsion Research Complex** aids quick and safe transportation of rocket components.

Why launching sites are generally located on the Eastern Coast?

The rotation of the Earth **moves from west to east**, which means that launching towards the east takes **advantage of this natural motion**, providing an extra boost to the rocket's velocity. This boost, known as the **"Earth's rotational velocity,"** helps reduce the amount of energy needed for the rocket to reach orbit, making launches more efficient and cost-effective.

Kulasekharapatnam, an **ancient port town in Thoothukudi district**, has historical significance dating back to the **1st century AD**.



12. CORBETT TIGER RESERVE (UTTARAKHAND)

Context:

The Supreme Court has mandated the establishment of a committee to address environmental damage resulting from, **Animal Safari, illegal construction and tree felling within the Corbett Tiger Reserve.**

The Committee will **determine responsibilities for the damage** and suggest measures for recovery. Additionally, it will consider **guidelines for tiger safaris in buffer zones** and recommend eco-friendly tourism practices.

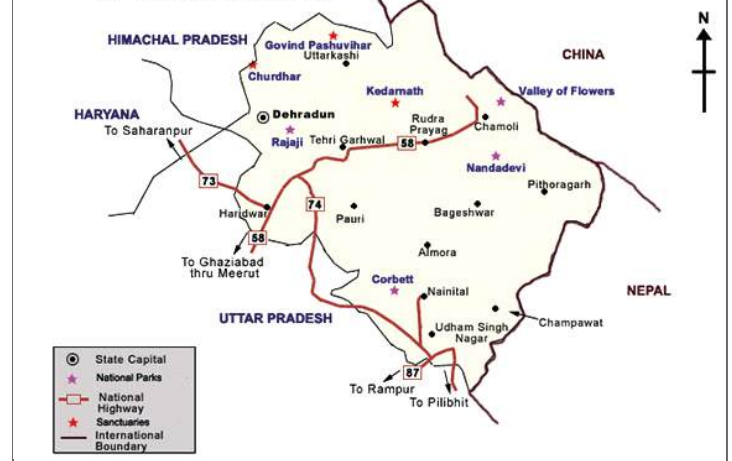
About Jim Corbett National Park

Established in 1936 as Hailey National Park, later declared a **Tiger Reserve in 1973**, Jim Corbett National Park is **India's first national park** and the inaugural participant in

the **Project Tiger initiative**. Located in the Shivalik hills of the Himalayas, it spans Pauri Garhwal, Nainital, and Almora districts in Uttarakhand. Recognized for its global prominence, the reserve recorded an impressive increase in tiger density, **reaching 260 in 2022 from 231 four years earlier.**

The reserve is traversed by rivers like **Ramganga, Pallaen, and Sonanadi**, and is characterized by local grasslands known as **Chaur**. Its vegetation primarily comprises tropical dry and moist deciduous forests.

National Parks & Sanctuaries of Uttarakhand



13. MUDUMALAI TIGER RESERVE

Context:

The **first-ever herpetofaunal survey in Mudumalai Tiger Reserve recorded 82 species of reptiles and amphibians.** Conducted in February, it covered Theppakadu, Kargudi, and Nilakottai forest ranges.

Aim: The survey aimed to **estimate the region's diversity and aid conservation efforts.** It identified species like the **Indian rock python and mugger crocodile**, guiding species-specific conservation plans.

What is herpetofaunal survey?

A herpetofaunal survey is a systematic study **conducted to document and assess the diversity, distribution, abundance, and ecology of reptiles** and amphibians within a specific geographical area.

About Mudumalai Tiger Reserve

Mudumalai Tiger Reserve is located in the **Nilgiris District of Tamil Nadu state** at the tri-junction of three states, viz, Karnataka, Kerala and Tamil Nadu. It is a part of the **Nilgiri Biosphere Reserve (1st Biosphere Reserve in India).** The Reserve has tall grasses, commonly referred to as **'Elephant Grass'**



14. PANCHESHWAR MULTIPURPOSE PROJECT (PMP)

Context:

The recent Nepal-India official dialogue **did not address progress on the significant Pancheshwar Multipurpose Project (PMP)**, despite the signing of a long-term power-sharing agreement over a month ago.

The project **remains stalled due to disagreements over benefit sharing**, posing challenges to its initiation.

About the Pancheshwar Multipurpose Project (PMP):

It is a joint hydropower **initiative situated on the Mahakali River**, shared by Nepal and India. It is governed by the integrated **Mahakali Treaty signed in 1996**. The project aims to generate approximately **6,480 MW of energy**, with equal division between the two countries, and provide irrigation water for 130,000 hectares of land in Nepal and 240,000 hectares in India.

Figure 1.1: Map of the Kali River and Pancheshwar region



15. LAND PORT IN SABROOM (TRIPURA)

Context:

PM virtually inaugurated Tripura's second integrated check post (ICP) and Land Port in Sabroom, located at Tripura's southernmost tip bordering Bangladesh.

The Sabroom Land Port (SLP) is **connected to the Chittagong port of Bangladesh via the Maitree Bridge on River Feni**, enhancing passenger and cargo movement between India and Bangladesh.

Aim: These initiatives are expected to boost connectivity, trade, and tourism between the North-East region of India and Bangladesh, contributing to the overall development of Tripura.

What are Land Ports?

Land Ports are designated areas on **international borders with facilities for customs clearance and transport of passengers and goods**. India currently has **11 operational Land Ports**, excluding SLP.

The Land Ports Authority of India (Under the Ministry of Home Affairs) **is a statutory body** established under the **Land Ports Authority of India Act, 2010** to provide safe, secure and systematic facilities for the **movement of cargo** as well as passengers at its **Integrated Check Posts (ICPs)** along the international borders of India.



16. EXERCISES IN NEWS

Exercise Name	Participating Forces	Location
Exercise Cutlass Express	Indian Navy, U.S. Naval Forces, multi-national	Seychelles
Sea Defenders-2024	Indian Coast Guard (ICG), United States Coast Guard (USCG)	Port Blair (Andaman and Nicobar Islands)

Some other exercises between India and the US:

1. **MALABAR Exercise:** A trilateral naval exercise involving the navies of India, the United States, and Japan, primarily focused on maritime security and interoperability in the Indo-Pacific region.
2. **YUDH ABHYAS:** A joint military training exercise conducted annually between the Indian and US armies, focusing on enhancing interoperability and cooperation in counterterrorism and counterinsurgency operations.
3. **Vajra Prahar:** A bilateral military exercise between the Special Forces of India and the United States, focusing on enhancing counterterrorism and urban warfare capabilities.
4. **Cope India:** A series of bilateral aerial exercises between the air forces of India and the United States, aimed at enhancing interoperability, combat readiness, and joint operational capabilities.
5. **Red Flag:** A multinational aerial combat training exercise hosted by the United States Air Force, which often includes participation from the Indian Air Force, focusing on air combat tactics, techniques, and procedures.

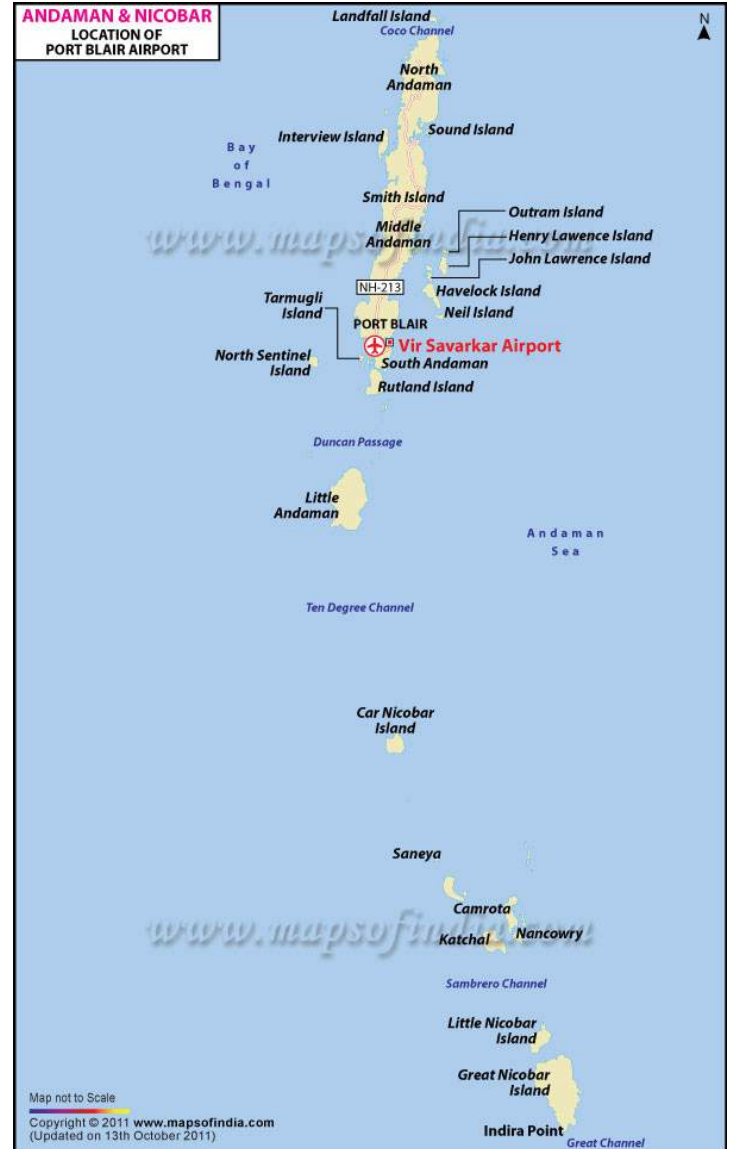
About Seychelles

It is an **island country and archipelagic state** in the Indian Ocean, consisting of 115 islands. Its capital and largest city, Victoria, lies 1,500 kilometres east of mainland Africa. Seychelles is the smallest country in Africa with a population of around 100,600



About Port Blair

It is the capital city of the Andaman and Nicobar Islands, a union territory of India in the Bay of Bengal. It serves as the entry point for visiting the islands and is connected to mainland India by air and sea. Port Blair is home to several museums, including the historic Cellular Jail. It also houses major naval and air bases of the Indian Navy and Coast Guard, along with the headquarters of the Andaman and Nicobar Command.



17. POBITORA WILDLIFE SANCTUARY

Context:

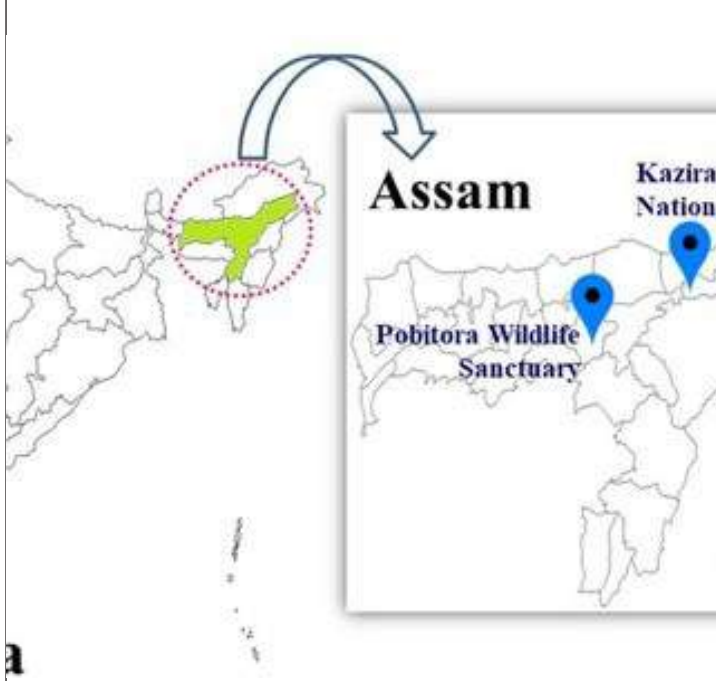
Assam Cabinet decides to **de-notify Pobitora Wildlife Sanctuary**, a prime rhino habitat, following a decision taken without prior Cabinet approval in 1998.

The move, unprecedented for any protected area in India, seeks to address **land rights issues and involve local communities in conservation efforts**. The decision faces scrutiny from conservationists and requires approval from the Supreme Court and the National Board for Wildlife for de-notification.

Previously, last year, the Supreme Court had issued notices to MoEF and the Assam govt. on plea against declaring **an eco-sensitive zone around Pobitora Wildlife Sanctuary**. Eco-sensitive zones are areas surrounding parks and sanctuaries crucial for wildlife conservation. **Mandated within 10 km**, but can extend further for ecological corridors. It prohibits commercial mining, and polluting industries, regulates tree felling, and permits sustainable practices like organic farming and renewable energy use.

About Pobitora Wildlife Sanctuary:

It is located in the **flood plains of the Brahmaputra River in Assam** and is known for having the **highest density of one-horned rhinos (EN)** in the world. It is often referred to as **'Mini Kaziranga'** due to its similar landscape and vegetation. Approximately 72% of the sanctuary is **covered by wet savannah dominated by Arundo donax and Saccharum**, while the rest consists of water bodies.



18. DIBANG MULTIPURPOSE HYDRO-ELECTRIC PROJECT (ARUNACHAL PRADESH)

Context:

PM laid the foundation stone for the **2,880 MW Dibang Multipurpose Hydroelectric Project in Arunachal Pradesh**, which will be **India's highest dam**, on the **Dibang River**, a tributary of **Brahmaputra River**. The project will be commissioned by February 2032. The project, located near **Munli village in Lower Dibang Valley District**, will feature a **278-meter-high dam**, making it the highest Concrete-Gravity Dam in India.

Currently, **Tehri Dam (260 m)**, located on the Bhagirathi River in Uttarakhand, is the highest dam in India.

About Dibang River:

The Dibang River, known as **Sikang by the Adi and Talo in Idu**, is an upstream tributary of the Brahmaputra in Arunachal Pradesh. Originating near **Keya Pass on the Indo-Chinese border**, it flows through the **Mishmi Hills in the Upper and Lower Dibang Valley districts**.



Prelims Links:

Q. Which of the following is/are tributary/tributaries of Brahmaputra? (UPSC 2016)

1. Dibang
2. Kameng
3. Lohit

Select the correct answer using the code given below:

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

Ans: D

19. KSHIPRA RIVER (MADHYA PRADESH)

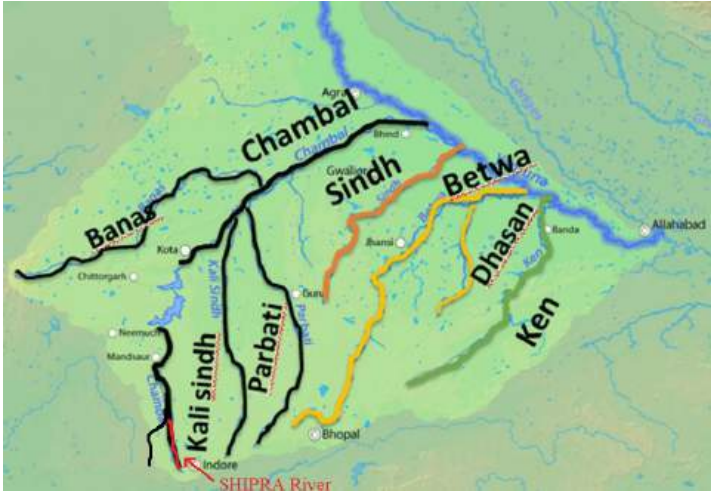
Context:

CAG conducted **a performance audit on the degradation of the Kshipra River** in Madhya Pradesh, highlighting multiple issues including pollution from untreated sewage and industrial waste, reduced river flow due to improper management, and deficient action against violators.

About the River:

The Shipra River in Madhya Pradesh is **considered sacred in Hinduism, with Ujjain situated on its east bank**. It hosts the **Sinhastha fair every 12 years** and yearly celebrations of the river goddess. Once perennial, its flow diminishes after the monsoon. Symbolizing purity, it is **linked to Lord Vishnu's incarnation as Varaha**. The **Narmada Shipra Sihastha Link Pariyojana**, connecting it to the **Narmada River**, was completed in 2015 as part of a larger project.

The Shipra River **originates from Kakri-Tekdi hill** in the Vindhya Range, north of Dhar and **11km from Ujjain**, this river spans 195km in length, with 93km passing through Ujjain. It traverses the **Malwa Plateau** before merging with the **Chambal River**.



20. SIMILIPAL TIGER RESERVE (ODISHA)

Context:

Police in Odisha have discovered **illegal poppy farms deep within the Similipal Tiger Reserve**, burning over 1,54,980 poppy plants worth approximately over ₹3 crore.

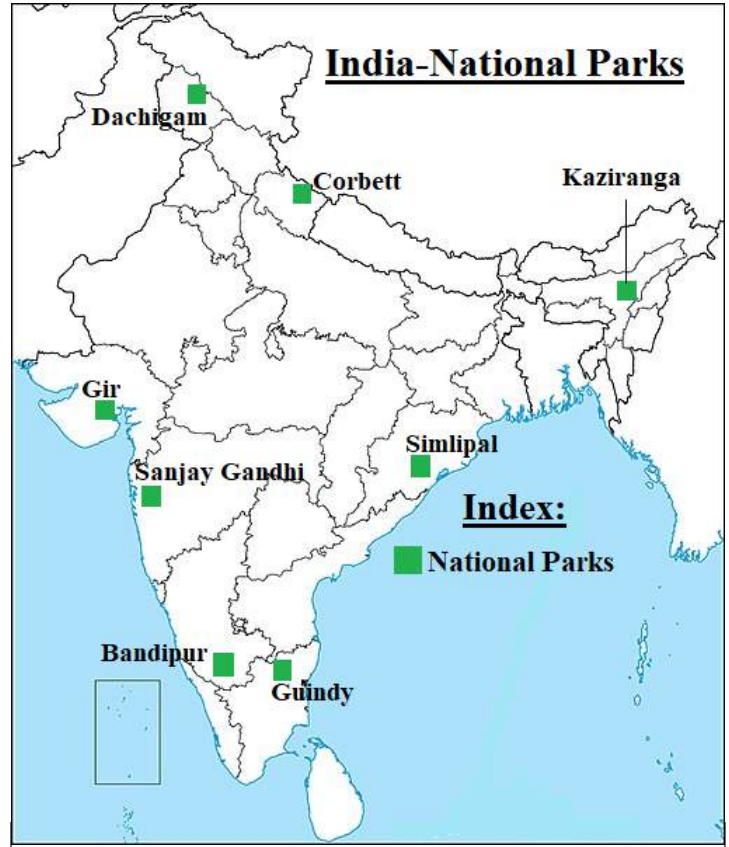
About Poppy Plant:

Poppies, **flowering plants** known for their vibrant colours, belong to the **Papaveraceae family**. Notably, *Papaver somniferum* produces opium, a potent **narcotic with medicinal properties like morphine**. Poppies also yield **edible seeds**.

The opium **poppy cultivation is regulated in India** and can be cultivated only in such tracts as are notified by the Government. At present these tracts are confined to three States, viz. **Madhya Pradesh, Rajasthan and Uttar Pradesh**. **Mandsaur district of Madhya Pradesh** and Chittorgarh and Jhalawar Districts of Rajasthan constitute about **80% of the total area**.

About Similipal Tiger Reserve (Odisha):

Established in 1956, Similipal Tiger Reserve has been a **Project Tiger site** since 1973 and a biosphere reserve since 1994. It's a part of **UNESCO's World Network of Biosphere Reserves** and the **Mayurbhanj Elephant Reserve**. Additionally, it's home to two indigenous tribes, the **Erenga Kharias and Mankirdias**, who practice traditional agriculture.



21. SMALL-SCALE LIQUEFIED NATURAL GAS (SSLNG) UNIT (VIJAIPUR)

Context:

India recently commissioned its **first Small-Scale Liquefied Natural Gas (SSLNG) unit** at GAIL's Vijaipur complex in Madhya Pradesh.

The government aims to **increase the share of natural gas in its energy mix to 15% by 2030** (up from slightly over 6% currently), recognizing its environmental benefits and cost advantages over conventional fuels.

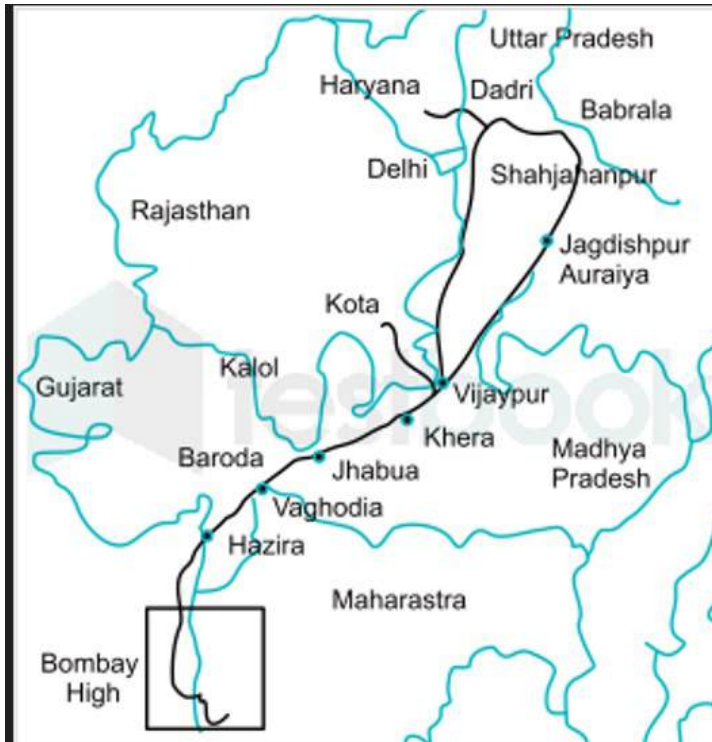
What is SSLNG?

Small-Scale Liquefied Natural Gas, refers to the **liquefaction of natural gas** on a smaller scale than traditional large-scale operations. SSLNG enables the distribution of natural gas to **industrial and commercial consumers in regions** where conventional pipeline infrastructure is not available.

SSLNG Vs LNG

Feature	SSLNG (Small Scale LNG)	LNG (Liquefied Natural Gas)
Scale	Smaller liquefaction plants, lower capacity	Larger liquefaction plants have, much higher capacity
Transportation	Cryogenic trucks, small vessels	Large LNG tankers

Target Market	Remote areas without pipeline infrastructure, specific	Large-scale industrial users, power generation
Regasification	May or may not require regasification	Requires regasification for pipeline distribution
Infrastructure	Lower investment needs, faster deployment	Higher investment needs, complex infrastructure



22. NIMMU-PADAM-DARCHA ROAD

Context:

The [Border Roads Organisation \(BRO\)](#) recently completed the strategic Nimmu-Padam-Darcha road in Ladakh.

About the Road:

The Nimmu–Padam–Darcha road (NPDR) (298km), also known as the **Zaskar Highway**, is under construction, linking **Ladakh and Himachal Pradesh via Zaskar** valley. It connects Nimmu in the Indus Valley to Padum in Zaskar and Darcha village in Lahul and Spiti. Constructed by the **Border Roads Organisation (BRO)**, it serves as an alternative to the Leh–Manali Highway, enhancing connectivity between Ladakh and the rest of India.

The road, along with the [Atal Tunnel and proposed Shingo La Tunnel](#), aims to provide all-weather connectivity and shorten the Manali to Kargil distance by 522 km.

Significance:

The road’s strategic significance lies in its shorter distance and the crossing of only one pass. This all-weather connectivity enhances defence preparedness and boosts economic development **in the Zaskar Valley**.



23. LUNA CRATER IN BANNI PLAINS

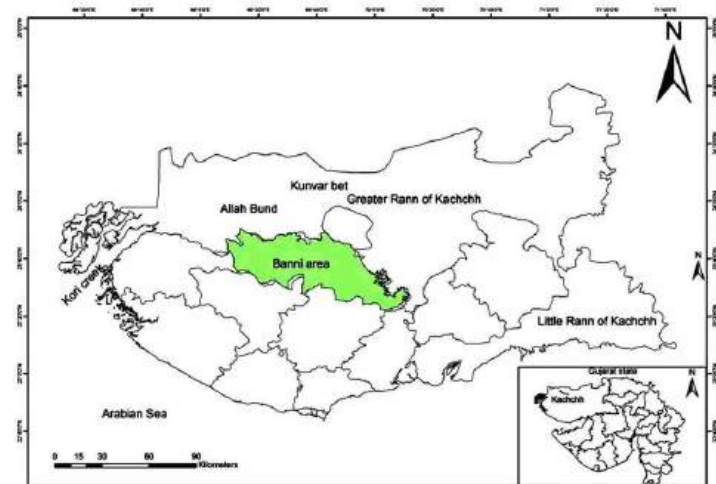
Context:

A **1.8 km wide crater (known as Luna Crater)** in Gujarat’s **Kutch region** (in the Banni Plains) has been confirmed as the result of a **massive asteroid impact**, reshaping the landscape and dating back approximately **6,905 years**

Luna region was **one of the several settlements linked to the ancient Harappan Civilization**. Other impact craters in India include **Dhala** in Madhya Pradesh, **Lonar** in Maharashtra, and **Ramgarh** in Rajasthan

The Banni Grassland near the **Great Rann of Kutch in Gujarat** is considered the **largest grassland in Asia**, covering 2,618 square kilometres, which is about **45% of Gujarat’s pastureland**

Read more about [Banni Plains here](#)



24. MOYAR VALLEY (TAMIL NADU)

Context:

Recent surveys show an increase in vulture numbers, highlighting the Moyar Valley's importance as a nesting site for **critically endangered Gyps vultures**

About Moyar Valley:

It is located in **Mudumalai Tiger Reserve** and is the only region with the largest nesting colony of Gyps vultures in the wild. This entire stretch is an **important biome in the Nilgiri Biosphere Reserve**



About Gyps indicus (also known as the Indian vulture or White-backed vulture)

They are characterized by **whitish feathers on a dark head and neck, with a pale collar**. They are colonial nesters and often **found in flocks**. However, their population is declining rapidly. They primarily inhabit open **grasslands in states like Jharkhand, Madhya Pradesh, and Rajasthan**. Classified as critically endangered by the IUCN and listed under Schedule I of the Wildlife Protection Act-1972, conservation efforts include banning non-steroidal anti-inflammatory drugs like diclofenac and Ketoprofen for veterinary use, along with the implementation of the Vulture Action Plan 2020-25.



About Vultures:

It is **one of the 22 species of large carrion-eating birds** that live predominantly in the tropics and subtropics. They act an important function as **nature's garbage collectors** and help to keep the environment clean of waste. India is home to **9 species of Vulture** namely the Oriental white-backed (Indian Vulture), Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon.

Bearded, Long-billed, Slender-billed, and Oriental white-backed are protected in **Schedule 1 of the Wildlife Protection Act 1972**. Rest are protected under '**Schedule IV**'.

Vulture Species	Conservation Status
White-rumped vulture (Indian Vulture)	Critically Endangered
Slender-billed vulture	Critically Endangered
Long-billed vulture	Critically Endangered
Red-headed vulture	Critically Endangered
Egyptian vulture	Endangered
Himalayan Griffon	Near Threatened
Cinereous vulture	Near Threatened
Bearded vulture	Near Threatened
Griffon vulture	Least Concern