



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

DEMOCRACY IN INDIA

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.

18 MAR - 23 MAR 2024

WEEKLY CURRENT AFFAIRS

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INSIDE

GENERAL STUDIES – 1

Topics: Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

1. Bhagat Singh’s Enduring Revolutionary Vision 4

GENERAL STUDIES – 2

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

1. Power of withholding Bills passed by State Assembly 6

Topics: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

2. Draft Karnataka Gig Workers (Conditions of Service and Welfare) Bill, 2024 7

Topics: India and its neighbourhood- relations.

3. India-Bhutan Relations: Cooperation and Challenges 9

GENERAL STUDIES – 3

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

1. Human Development Index (HDI) 2023-24 11

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.

2. AI’s Impact on Elections: Balancing Promise and Peril 13

CONTENT FOR MAINS ENRICHMENT

1. ILO Recommendation for Domestic Workers 15
2. Sosamma Iype: Rescuer of the Vechur Cow 15

FACTS FOR PRELIMS

GS-1

1. Nana Jagannath Shankarseth 16
2. UNESCO’s tentative list 16
3. Gibraltar Strait 17

GS-2

4. Bhutan’s Gelephu project 17
5. Cashless Treatment of Road Accident Victims 17
6. Model Code of Conduct 18
7. Bharatiya Adim Jati Sevak Sanghathan (BAJSS) 18
8. Cinematograph (Certification) Rules, 2024 18
9. ‘2+2’ defence and foreign ministerial dialogue 19
10. FLNAT 19
11. UN on Disarmament 19
12. e-shram portal 20
13. Democracy in India 20
14. Press Information Bureau’s Fact Check Unit 22
15. Ladakh’s Statehood Demand 22

16. Key Reports in News	23	40. Air Quality Report 2023	32
17. BhashaNet portal	24	41. Genetic Rescue	33
18. Uniting For Consensus Model	24	42. Bugun Liocichla	33
GS-3		43. STEAG	34
19. India's E-Vehicle Policy: Key Highlights	25	44. Project Gaia	34
20. Kisan Credit Card (KCC) Fisheries scheme	25	45. Reverse flip	34
21. Artificial Intelligence Act (AI Act, 2024)	26	46. GRID-INDIA	34
22. 'ETHANOL 100'	26	47. Pusa-1121 and 1509 Basmati varieties	35
23. NIA's CCMS platform launched	27	48. Sound Laser	35
24. Private Placement of Securities	27	49. Assisted Reproductive Technology	35
25. India's first Oil Palm Processing Unit (Arunachal Pradesh)	27	50. Pushpak	36
26. CPCRI	28	51. ANAGRANINF - Antibiotic Development Project	36
27. Biomining	28	52. Right whales	36
28. SIMA	28	MAPPING	
29. Ghost particles	29	1. Gulf of Tonkin	37
30. Nausena Bhawan (New Delhi)	29	2. Barberton Greenstone Belt	37
31. Tobacco Board	29	3. Operation Indravati (Haiti)	37
32. Patents (Amendment) Rules, 2024	30	4. Kshipra River (Madhya Pradesh)	38
33. Trademark Rules: 'Passing off' provisions	30	5. Similipal Tiger Reserve (Odisha)	38
34. SAKHI App	31	6. Small-Scale Liquefied Natural Gas (SSLNG) unit (Vijaipur)	39
35. Indigenous Sickle Cell Disease Drug Developed	31		
36. Ketamine use	31		
37. Military Exercises in News	32		
38. ₹1,000 Crore Fund for Agri-Tech Startups: NAB-ARD Initiative	32		
39. Asbestos	32		

GENERAL STUDIES – 1

Topics: Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

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 Kutumbakam
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: Parliament and State Legislatures – structure, functioning, conduct of business, powers & privileges and issues arising out of these.

1. 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

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.

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:

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: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

2. 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 wages, 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: [India and its neighbourhood- relations.](#)

3. 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
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)

GENERAL STUDIES – 3

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

1. 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	<p>Developed by Pakistani economist Mahbub ul Haq in 1990, it embodies Amartya Sen's capabilities approach to understanding human well-being.</p> <p>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).</p> <p>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.</p>
Key Highlights of India's Human Development Report 2023-24	
India's Ranking	<p>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</p>

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
 © 1 and 3 only
 (d) 1, 2 and 3

Solution: A

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.

2. 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 world-wide, including in India**, mark a pivotal moment, as AI's impact on electoral behaviour becomes increasingly evident.

Promises of using AI for Election:

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

Prelims of using AI for Election:

Aspect	Description
Emergence of AGI	- Rapid technological breakthroughs indicate Generative AI's evolution into AGI, potentially mirroring human capabilities. - AGI, capable of reasoning and adapting, has significant implications for electoral dynamics worldwide.
Manipulating Electoral Behavior	AI enables highly personalized propaganda , surpassing traditional methods like bots and automated social media accounts. See the below figure for example: <div style="text-align: center; margin-top: 20px;"> <h3>Fakes Around the World</h3> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>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.</p> </div> <div style="text-align: center;">  <p>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 MK Stalin and DMK leader TR Baalu.</p> </div> </div> <div style="margin-top: 20px; background-color: #e0e0e0; padding: 10px;"> <p>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.</p> </div> </div>

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, agriculture, 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

CONTENT FOR MAINS ENRICHMENT

1. 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](#).

2. SOSAMMA IYPE: RESCUER OF THE VECHUR COW

Context:

Dr. Sosamma Iype won the **Padma Shri in 2022** for her remarkable achievement of **saving and resurrecting the indigenous Vechur cow breed**.

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.

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.

Ethical Values Exhibited by Iype:

1. **Commitment** to conservation.
2. **Dedication** to community welfare.
3. **Persistence** despite obstacles.
4. **Empowering** local farmers.
5. **Preservation** of cultural heritage.

FACTS FOR PRELIMS

GS-1

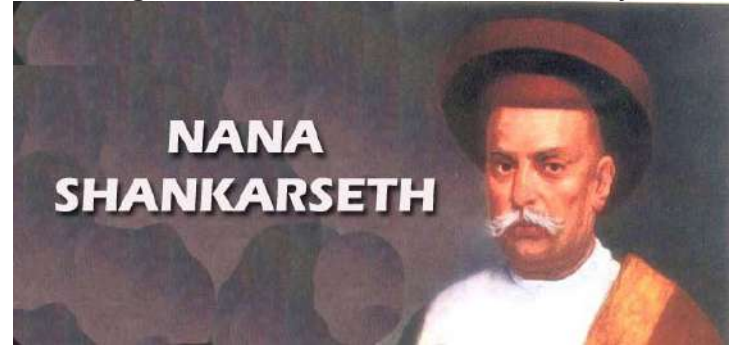
1. NANA JAGANNATH SHANKARSETH

Context:

The Maharashtra cabinet has decided to propose **re-naming 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.



2. 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.

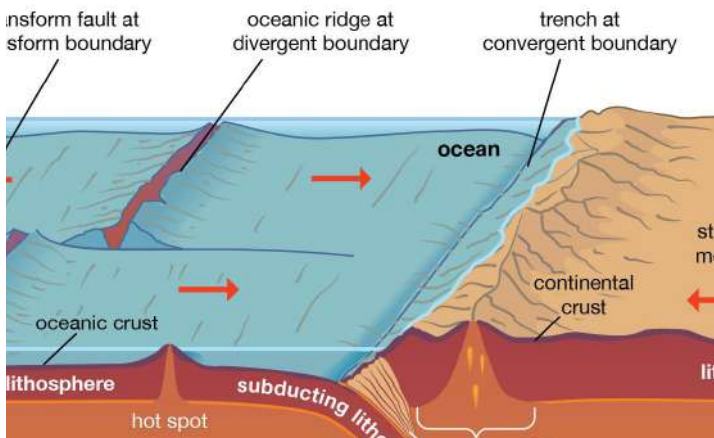
3. GIBRALTAR STRAIT

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**.



GS-2

4. 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.



5. 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).

6. 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**.

7. 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**.

8. 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 on-line 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 **Cine-**

matograph Act 1952. It certifies films for public screening in cinemas and on television, ensuring compliance with regulatory standards.

9. '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.**

10. 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.

11. 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.

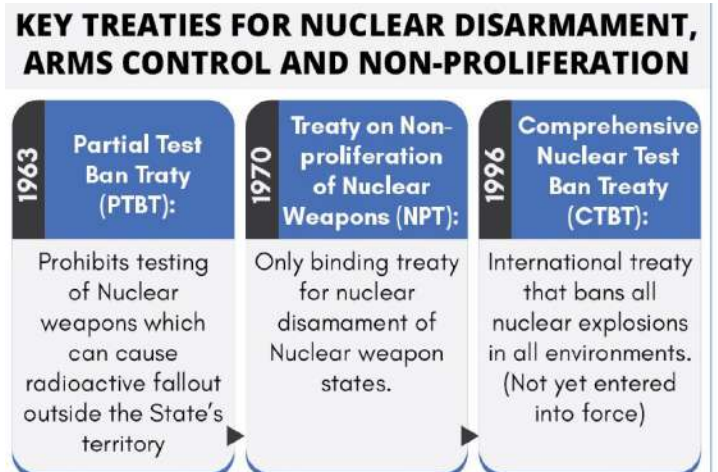
What is Disarmament?

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, nego-

tiations, 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.

12. 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**.

13. 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)	Mahajanpada 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.

14. 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)**.

15. 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:

- 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**
- Reservation of Jobs:** The Ladakh administration responded to youth demands by **increasing ST reservation in direct recruitment from 10% to 45% in 2023**
- 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.
- Ladakh's demand for the 6th Schedule:**

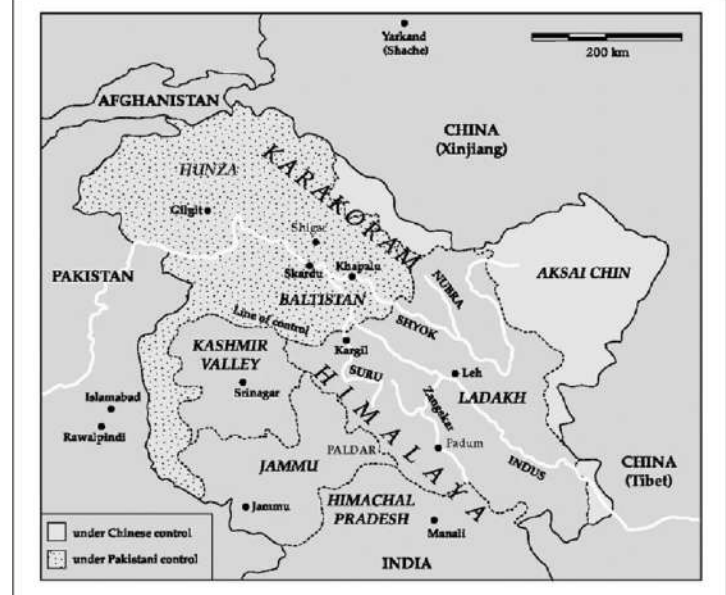
Last year, in 2023, **a high-powered committee was formed in Ladakh** to address growing demands for its inclusion under the Sixth Schedule. Civil society groups seek protection of land, resources, and employment after Article 370's revocation. **The National Commission for Scheduled Tribes** had previously 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 lawmaking 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

16. 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	

17. 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.

18. 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.**

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19. 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.

20. 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. Cit-

izens 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):

- Introduction:** The KCC scheme was **launched in 1998** to provide timely credit support to farmers for cultivation and other needs.
- Implementing Agencies:** Commercial Banks, Regional Rural Banks (RRBs), Small Finance Banks, and Cooperatives are involved in implementing the scheme.
- Features:** KCC comes with an **ATM-enabled RuPay debit card**, simplified procedures, and built-in cost escalation. **Aadhaar linkage is mandatory** for interest subvention.
- 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

21. 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.
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 INDIAai
Global Initiatives to Promote AI	Bletchley Declaration for AI
	Global Partnership on AI (GPAI) New Delhi Declaration
	Hiroshima AI Process (HAP) by G7

22. '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 Bio-fuel-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)

1. Cassava
2. 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

23. 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.

24. 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.

25. 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:

- Launched in 2021** to promote oil palm cultivation.
- 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)

- The quantity of imported edible oils is more than the domestic production of edible oils in the last five years.
- 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?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Ans: A

26. 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**.

27. 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.

28. 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.

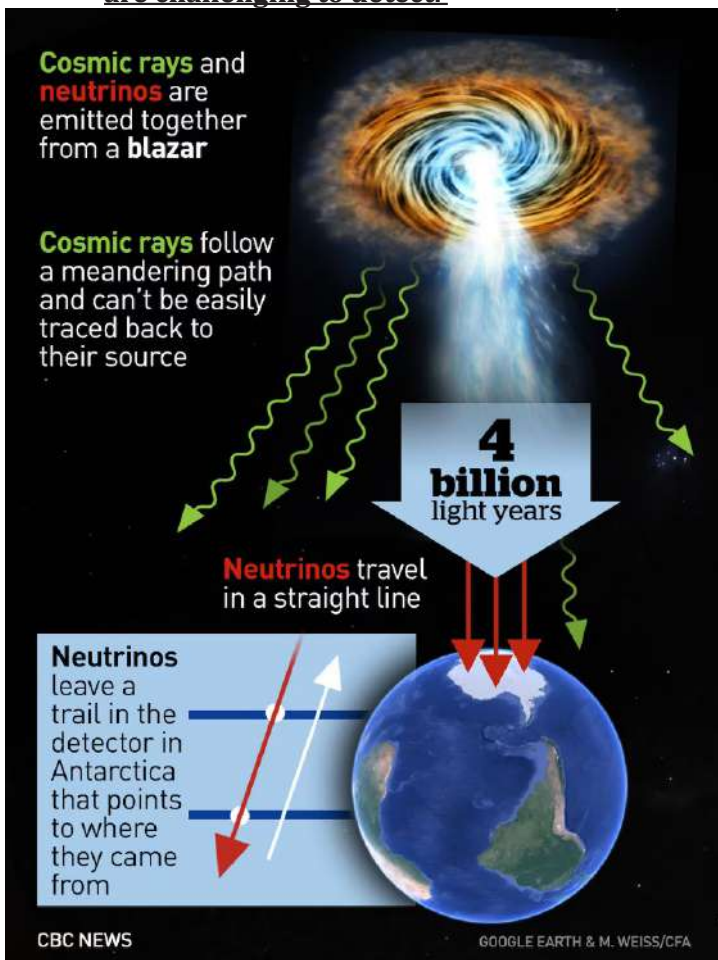
This breakthrough paves the way for **AI agents that can intelligently collaborate with humans not only in games but also in real-world tasks.**

29. 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.**



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.

30. NAUSENA BHAWAN (NEW DELHI)

Context:

The Defence Ministry inaugurated the **Indian Navy's first independent headquarters**, Nausena Bhawan, in Delhi Cantonment.

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.

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 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.

31. 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.

India **ranked as the 2nd largest producer and 4th largest exporter** of unmanufactured tobacco globally in 2021.

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**.

32. 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 **copyright 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.

33. 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 trade-

mark 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**

34. 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.

35. 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.

36. 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 **psycho-tropic substance under the Narcotic Drugs and Psychotropic Substances Act, 1985**

37. 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.

38. ₹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:

- Digital Agriculture Mission (DAM)** with the India Digital Ecosystem of Agriculture (IDEA) and funding for new technology
- Innovation and Agri-Entrepreneurship Development Programme** under the Rashtriya Krishi Vikas Yojana (RKVY)
- Access to loans for agri-startups** through Priority Sector lending directed by the RBI
- 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

39. 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

40. 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)

- 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.
- In a year, the highest levels of ozone pollution occur during periods of inclement weather.
- PM10 can penetrate the lung barrier and enter the bloodstream.
- Excessive ozone in the air can trigger asthma.

Which of the statements given above are correct?

- 1, 3 and 4
- 1 and 4 only
- 2, 3 and 4
- 1 and 2 only

Answer: Option b) 1 and 4 only

41. 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:

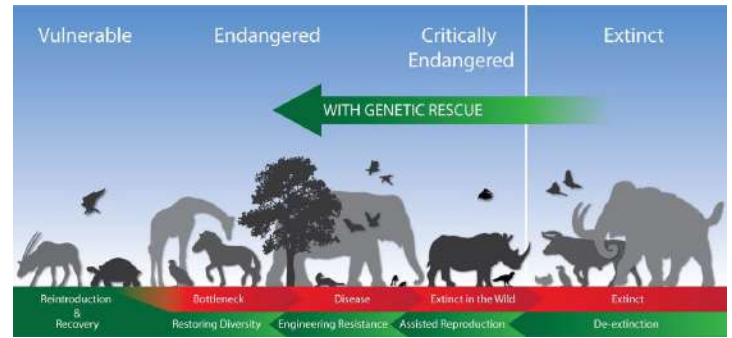
The tiger population in Ranthambore faces issues of **genetic isolation and inbreeding** due to fragmentation and habitat loss. Inbreeding can lead to **genetic disorders and reduced fitness**, posing a threat to the population's long-term viability.

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

42. 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.



43. 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.

44. 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.

45. 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.

46. 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.

47. 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.

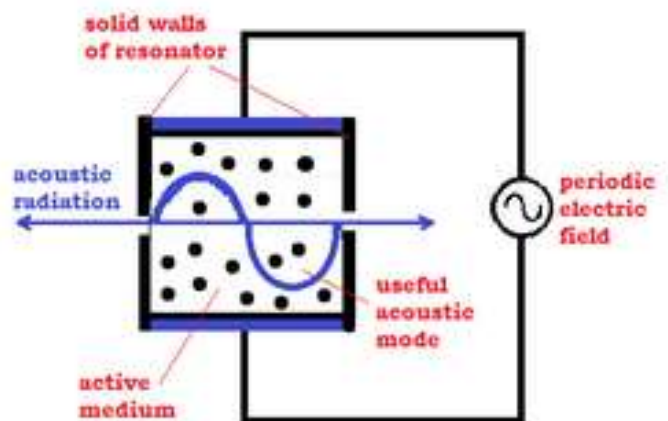
laser releases particle-like chunks of sound known as phonons in a narrow beam.

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.**



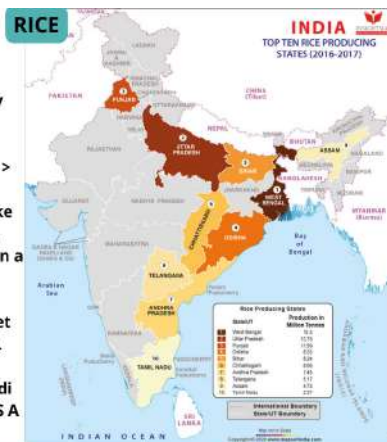
49. ASSISTED REPRODUCTIVE TECHNOLOGY

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, Cryopreser-**

- **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.



48. 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**

vation of gametes or embryos, and Fertility medication

50. 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**.

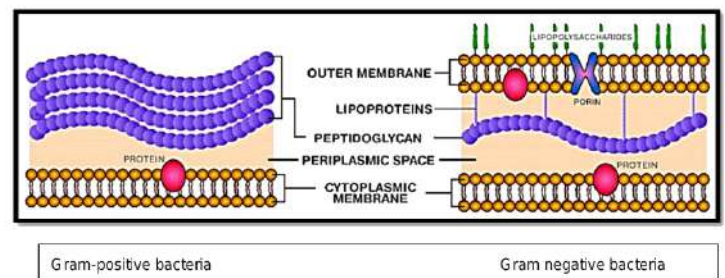
- This experiment, the **second in the series following RLV-LEX-01, demonstrated the autonomous landing capability of the RLV, named Pushpak.**

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.

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



51. 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.**

52. RIGHT WHALES

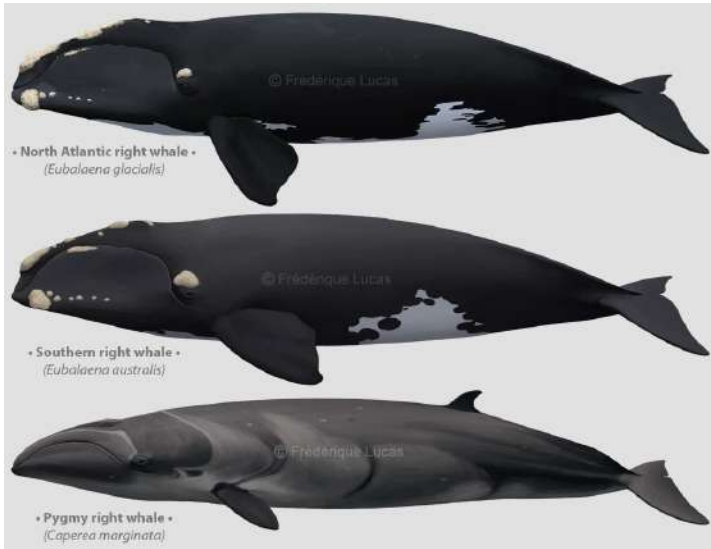
Context:

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.



MAPPING

International places in news

1. 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**.



2. 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**'.



Figure 1: A map of southern Africa showing the location of the Barberton greenstone belt.

3. 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



Indian places in news

4. 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**.



5. 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.

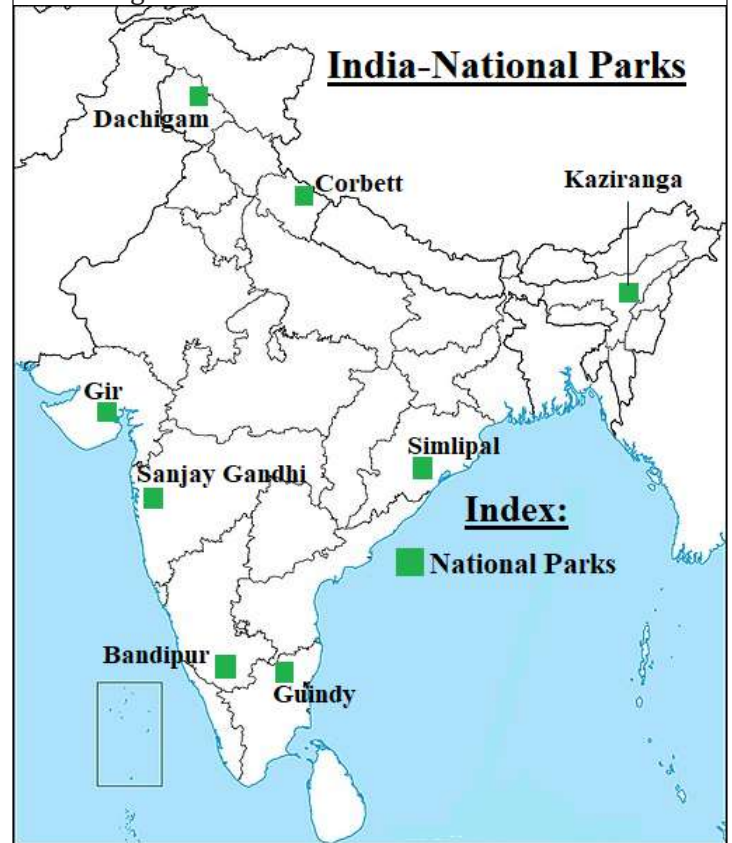
About Poppy Plant:

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.



6. SMALL-SCALE LIQUEFIED NATURAL GAS (SSLNG) UNIT (VIJAIPUR)

Context:

India recently commissioned its **first Small-Scale Liquefied Natural Gas (SSLNG) unit** at GAIL's Vijaiपुर 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

