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GENERAL STUDIES – 1

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

1. NALANDA – IN ITS NEW AVATAR

Context:

The Prime Minister inaugurated **the new Nalanda University campus in Rajgir, Bihar**, a joint initiative between **India and East Asia Summit (EAS) nations**.

- **Green Campus:** The new campus **features a ‘Net Zero’ Green Campus** with solar power, water treatment plants, water recycling, and extensive water bodies.

About Ancient Nalanda University:

1. **Establishment:** Founded by **Kumargupta I in the 5th century CE**, it thrived as a centre of learning until the 12th century CE.
2. **Architecture:** A monastic university (Mahavihara) with residential and educational buildings, stupas, shrines, and notable artworks in stucco, stone, and metal.
3. **Educational Excellence:** Attracted students from China, Tibet, Central Asia, Sri Lanka, Thailand, Burma, and Southeast Asia. Major disciplines included Veda, fine arts, medicine, mathematics, astronomy, politics, and warfare. Admission was strictly by merit with exams by trained gatekeepers.
4. **Foreign Visitors:** In the **7th century CE**, **Chinese scholars I-Qing and Xuan Zang** visited Nalanda. **Xuan Zang** studied yogashastra under Chancellor **Shilabhadra**.
5. **Recognition:** Declared a UNESCO World Heritage site in 2016.

Analysis of the Ancient Education System of India:

- **Gurukul system:** Students lived with their gurus (teachers) in an immersive learning environment, fostering deep bonds and personalized education.
 - For instance, **Chanakya**, a renowned ancient Indian scholar, mentored **Chandragupta Maurya**, the founder of the Maurya Empire.
- **Places of learning:** Indigenous education was imparted at home, in **temples, pathshalas, tools, chatuspadis and gurukuls**.
 - Students went to viharas and universities for higher knowledge.
- **Value-Centric education:** Values like **dharma** (duty), **ahimsa** (non-violence), and **Satya** (truth) were integral to education.
 - For example, the **Arthashastra** by Kautilya (Chanakya) emphasized moral and ethical

principles alongside statecraft and economics.

- **Centres of excellence:** Ancient India had centres of excellence like **Nalanda and Takshashila**, where practical wisdom was imparted.
 - These institutions nurtured scholars who excelled in various fields, from medicine to mathematics.

What can the present-day education system learn from it?

- **Holistic development:** The ancient system’s emphasis on holistic development aligns with the current understanding of multiple intelligences. Ancient Indian education included physical exercises (**Vyayam**), mental exercises (**Manthan**), and moral education (**Acharan**).
- **Mentorship: Low-teacher pupil Ratio** was a salient feature of the Gurukuls. The deep teacher-student relationships of ancient gurukuls can be emulated through mentorship programs in modern educational institutions.
- **Value education:** Incorporating moral and **ethical education** in the curriculum can foster responsible citizens with a strong sense of ethics and social responsibility. This is particularly relevant in the context of today’s global challenges.
- **Personalized learning:** Modern education can benefit from **customized** approaches that recognize and cater to individual differences in learning styles, abilities, and interests.
- **Practical application:** Modern education can promote **hands-on** learning, internships, and real-world problem-solving to equip students with practical skills and experiences.
- **Cost of education:** Education in ancient India was very low cost, without fees and only paid in voluntary **“Gurudakshina”**. **Gross privatisation**-led high costs can be countered by the ancient systems of education.

Shortcomings of the ancient education system:

- **Limited access:** Education in ancient India was primarily available to the **privileged classes**, leaving out a significant portion of the population, especially the **lower castes and women**.
- **Rote learning:** The traditional system often relied on **rote-oral memorization**, emphasizing the repetition of texts and formulas. This is an error that continues in present.
- **Lack of formal documentation:** The knowledge passed down through the guru-shishya (teacher-student) tradition was **largely oral and not systematically documented**. This led to the loss of significant knowledge with the decline of gurukuls and the burning of libraries like Nalanda.

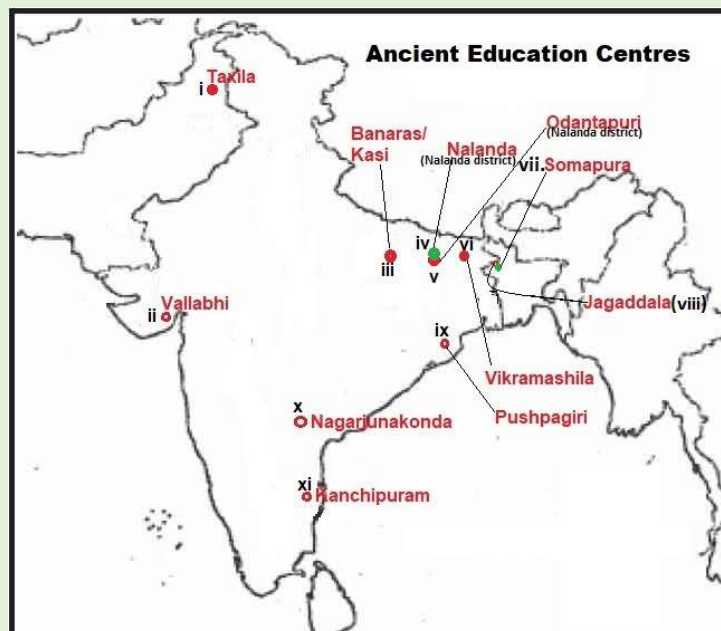
Conclusion:

The New Education Policy 2020 recognizes this rich heritage of ancient and eternal Indian knowledge and thought as a guiding principle and focuses on the **pursuit of knowledge (Jnan), wisdom (Pragyaa), and truth (Satya)** as the philosophy of highest human goal

Ever Wondered?!

If there were any other Institutions of Ancient Learning:

Institution	Location	Significance
<u>Vikramshila</u>	Bihar	Propagated Vajrayana Buddhism; est. By Dharmapala (8th Century CE)
Nagarjunakonda	Andhra Pradesh	Named after Nagarjuna, a master of Mahayana Buddhism, who propounded Sunyavada
Takshashila (Taxila)	Northwestern Pakistan	Famous pupils include Panini (wrote Ashtadhyayi), Jivaka (physician), and Chanakya (Kautilya)
Valabhi	Gujarat	Renowned centre of learning
Odantapuri	Bihar	Renowned centre of learning
Jagaddala	Now in Bangladesh	Renowned centre of learning



About East Asia Summit (EAS)

- Establishment:** Founded in 2005 as an ASEAN-led initiative.
- Significance:** The only leader-led forum in the Indo-Pacific, discussing political, security, and economic issues.
- Principles:** Operates on openness, inclusiveness, respect for international law, ASEAN centrality, and ASEAN's driving role.

2. INDIA'S GEOLOGICAL-HERITAGE SITES

Context:

With landscapes that range from the **world's greatest peaks** to **low-lying coastal plains**, India showcases a diverse morphology that has evolved **over billions of years**.

Despite this, the country's **regard for its geo-heritage is poor**.

About Geo-heritage Sites:

- Geo-heritage refers to the **geological features which are inherently or culturally significant offering insight into earth's evolution** or history to earth science or that can be utilized for education.

- Sites are designated as Geo-heritage Sites (GHS) by the [Geological Survey of India \(GSI\)](#).
- India, as a member of the **UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage**, safeguards such sites through appropriate legislation, as done by other countries worldwide.

What are Geo-Relics?

- **Geo-relics are geological formations, rocks, minerals, and fossils** that provide significant scientific, educational, and historical insights into the Earth’s history and processes.
- They **include unique and rare geological features** that help us understand the evolution of our planet, climate changes, and the development of life.

Examples:

Category	Site Name	Location	Significance
Geo-Heritage	Lonar Crater	Buldhana District, Maharashtra	Hyper-velocity impact craters formed around 576,000 years ago.
Geo-Heritage	Bhimbetka Rock Shelters	Raisen District, Madhya Pradesh	Natural rock formations with prehistoric cave paintings.
Geo-Heritage	St. Mary’s Islands	Udupi District, Karnataka	Columnar basaltic lava formations, are over 60 million years old.
Geo-Heritage	Ambenali Ghat	Maharashtra	Exposed Deccan Trap formations showcasing volcanic activity.
Geo-Heritage	Dhala meteoritic impact crater	Shivpuri, Madhya Pradesh	Between 5 billion to 2.5 billion-year-old crater is evidence of a celestial collision when life must have begun.
Geo-Relics	Fossil Park	Sirmaur District, Himachal Pradesh	Fossilized remains of ancient trees from the Shiwalik range.
Geo-Relics	Akal Fossil Wood Park	Jaisalmer District, Rajasthan	Fossilized tree trunks dating back to the Jurassic period.
Geo-Relics	Varkala Cliff	Thiruvananthapuram District, Kerala	Sedimentary formations with fossils dating millions of years.
Geo-Relics	Jhamarkotra Rock Phosphate	Udaipur District, Rajasthan	Mineral deposits with significant geological history.
Geo-Relics	Salkhan Fossil Park	Sonbhadra District, Uttar Pradesh	Fossilized tree trunks from the Upper Jurassic period.
Geo-Relics	Mandla Plant Fossils National Park	Mandla District, Madhya Pradesh	Fossilized plants from the Mesozoic era, around 40-150 million years old.

These sites and relics contribute to the scientific understanding of Earth’s history and processes in several ways:

1. **Geological Evolution:** Geo-heritage sites and relics provide a window into the Earth’s past, allowing scientists to reconstruct the geological history of a region.
 - a. Fossils, rock layers, and mineral deposits found in these sites offer insights into ancient ecosystems, climate changes, and geological events.
 - b. E.g. The **Siwalik Fossil Park in Himachal Pradesh**
2. **Plate Tectonics and Continental Drift:** Certain geological formations and features found at geo-heritage sites provide evidence for plate tectonics and the movement of continents over time. These sites help scientists understand the dynamic processes that have shaped the Earth’s surface.
 - a. **For instance, Deccan Traps.**
3. **Volcanic and Tectonic Activity:** Volcanic landscapes, fault lines, and igneous formations found at geo-heritage sites offer insights into the processes of volcanic and tectonic activity, shedding light on the Earth’s internal forces and their effects on the surface.
 - a. E.g. **Lonar Lake in Maharashtra.**
4. **Paleoenvironmental Studies:** Fossilized plants, animals, and other organic materials preserved in geological formations provide clues about past environments, ecosystems, and biodiversity. These records contribute to our understanding of how life on Earth has evolved.
 - a. E.g. **fossil-rich sedimentary rock formations of Jaisalmer.**
5. **Climate Change and Earth’s History:** The study of sedimentary rock layers and glacial features in geo-heritage sites

helps scientists reconstruct past climates and understand the Earth's history of climatic changes.

- a. **The Lignite Fossil Park in Gujarat** contains well-preserved fossilized wood and leaves.
6. **Mineralogical and Geological Processes:** Geo-heritage sites often host unique mineral deposits, crystals, and rock formations that offer insights into geological processes such as mineral formation, erosion, and metamorphism.
 - a. For example, The mineral-rich caves of **Meghalaya**, like the **Mawsmai Cave**

Ever Wondered?!

What's the Geological heritage globally?

- It was first recognised in 1991 at a UNESCO-sponsored event, 'First International Symposium on the Conservation of our Geological Heritage'.
- Legacy: "Man and the Earth share a common heritage, of which we and our governments are but the custodians".
- Geo-heritage sites in many countries such as Canada, China, Spain, the United States and the United Kingdom have been developed as national parks.
- UNESCO has prepared guidelines for the development of geo-parks.
- There are 169 Global Geoparks across 44 countries.

Difficulties in Preserving Geological Sites in India

1. **Limited Traction and Awareness:** Geo-conservation lags global efforts and lacks public awareness. **Examples:** Dhala meteoritic impact crater, Lonar crater.
2. **Impact of Development and Mining:** Many fossil sites are destroyed by development and mining activities.
3. **Lack of Specific Legislation:** No specific laws for geo-heritage conservation, unlike Canada and China.
4. **Lack of Adequate Power:** The Geological Survey of India (GSI) identified sites but can't enforce preservation. **Example:** Varkala Cliff was partially demolished despite being a heritage site.
5. **Half-hearted Government Measures:** Withdrawal of National Commission for Heritage Sites proposal. No progress on the 2022 geo-heritage preservation bill.

Way Forward and Conclusion

- India should recognize its **geological history as non-cultural heritage** and compile a comprehensive list of potential geo-sites beyond those identified by the Geological Survey of India.
- Legislation for geo-conservation, modelled after the **Biological Diversity Act of 2002**, is essential.
- **India needs to create an inventory of** all prospective geo-sites in the country (in addition to the 34 sites

identified by the GSI)

- Additionally, a National Geo-Conservation Authority should be established to ensure independent oversight, avoid bureaucratic delays, and protect the autonomy of researchers and private collectors.

About the Geological Survey of India:

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

Mains Link:

Q.1 Safeguarding the Indian Art Heritage is the need of the moment. Discuss. (UPSC 2018)

Prelims Link:

Q1. Consider the following historical places:

1. Ajanta Caves
2. Lepakshi Temple
3. Sanchi Stupa

Which of the above places is/are also known for mural paintings?

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

Ans: (b)

Topics: Post-independence consolidation and reorganization within the country.

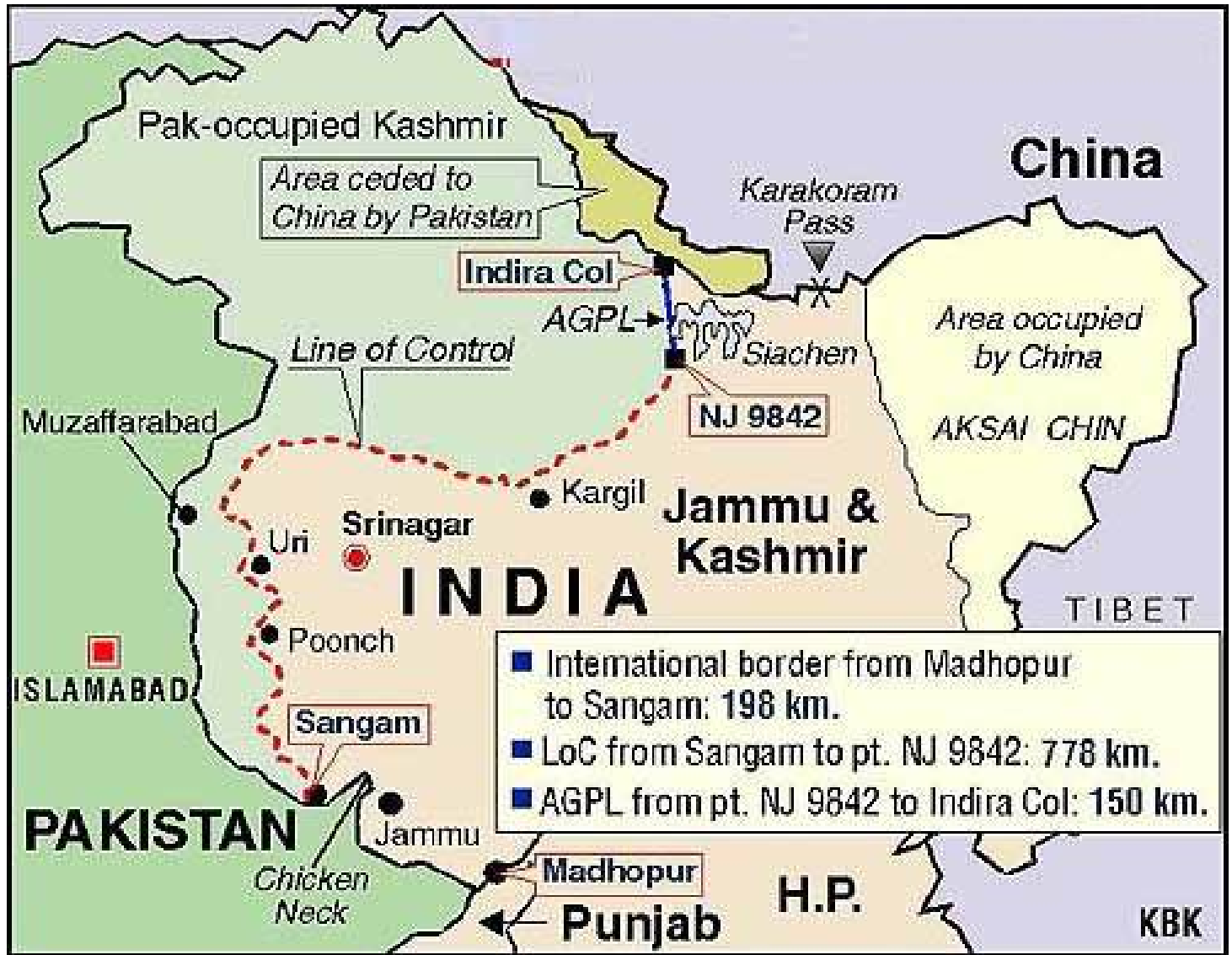
3. 25 YEARS OF KARGIL WAR

Context:

To honour the 25th anniversary of the Kargil War victory, the Indian Army has launched a Pan-India Motorcycle Expedition.

What was the Kargil War?

After the Indo-Pak War of 1971, several military conflicts occurred between India and Pakistan. Both countries conducted nuclear tests in 1998, escalating tensions that led to the **Kargil War in 1999**. The Kargil War **fought between May and July 1999** in the Kargil district of Jammu and Kashmir (now part of Ladakh), resulted in an Indian victory.



Factors Leading to the Kargil War:

1. **Strategic Objectives:** Pakistan aimed to internationalize the Kashmir issue and cut off Ladakh from India by capturing strategic points in Kargil.
2. **Vacated Border Posts:** Pakistan exploited India's strategy of vacating border posts during winter, infiltrating troops and militants.
3. **India-Pakistan Rivalry:** Long-standing animosity over Jammu and Kashmir fueled the conflict.
4. **Ignoring Past Treaties:** Pakistan's actions defied the Simla Agreement of 1972, which prohibited unilateral changes to the Line of Control (LoC).
5. **Hope for International Mediation:** Pakistan hoped the conflict would prompt international mediation, especially by the U.S., favouring their stance on Kashmir.

Operation Vijay:

In 1999 **Pakistani troops infiltrated the Indian side** of the Line of Control (LoC) under **Operation Badr**, aiming to cut off Indian troops in Siachen. In response, the **Indian Army launched Operation Vijay**.

Implications of the Kargil War on Indian Security Strategy:

1. **Border Vigilance and Infrastructure:** India enhanced border surveillance and infrastructure, such as constructing all-weather roads.
2. **Military Modernization:** The war highlighted the need for advanced military equipment, leading to defence modernization like the induction of Bofors guns.
3. **Emphasis on Diplomacy:** India's diplomatic efforts isolated Pakistan internationally, highlighting the importance of global diplomacy.
4. **Recognizing Nuclear Deterrence:** The war underscored the danger of conventional conflicts escalating into nuclear ones.

5. **Reinforced Intelligence Mechanisms:** The surprise attack led to enhanced intelligence-gathering and coordination, resulting in the establishment of the Defence Intelligence Agency (DIA) in 2002.

Lessons Learned

- **A proxy war can escalate into a conventional conflict** between India and Pakistan
- State-sponsored terrorism is a **double-edged weapon due to socio-political divides**.
- It is a myth that nuclear weapons decrease the likelihood of war.

Conclusion:

We celebrate '**Kargil Diwas**' on **26th July 2023**. It is a stark reminder of the valour of the armed forces and the **evolving dynamics of India's security concerns**. The Kargil War is a testament to the nation's resilience, adaptability, and unwavering commitment to protecting its sovereignty against all odds.

Insta Links:

- [Indo-Pakistan relations](#)

Mains Links:

Q. Analyze the circumstances that led to the Tashkent Agreement in 1966. Discuss the highlights of the Agreement. (UPSC 2013)

4. 40 YEARS OF OPERATION BLUESTAR

Context:

Slogans advocating **Khalistan** were recently raised at the Golden Temple complex in Punjab's Amritsar during the 40th anniversary of '**Operation Bluestar**'.

What is the Khalistan Movement?

The **Khalistan movement seeks to establish a sovereign Sikh** state called **Khalistan** in the Punjab region. It traces its origins to India's independence and Partition, with communal violence leading to the **displacement of Sikhs**. The movement gained momentum with the **Punjabi Suba Movement for a Punjabi-speaking state**, leading to the **Anandpur Sahib Resolution in 1973**. By the 1980s, **Jarnail Singh Bhindranwale's influence** (a radical leader of Sikhism) and violent tactics escalated tensions, culminating in the **1984 Operation Bluestar** to remove him from the Golden Temple complex.

Factors responsible for the movement:

1. **Pre-partition origin:** Stemming from India's independence and Partition, the division of Punjab witnessed communal violence, leading to a desire for autonomy.
2. **Linguistic Reorganization of States (1966):** The creation of a Sikh-majority Punjab, albeit smaller, fuelled calls for greater autonomy and cultural rights.
3. **Anandpur Sahib Resolution (1973):** The demand for autonomy heightened tensions between Punjab and the central government.
4. **Religious Identity: The** distinct Sikh identity fuelled the movement, aiming to protect Sikh religious and cultural rights.
5. **Socio-economic Factors:** Grievances over socio-economic disparities and unemployment in Punjab provided fertile ground for the movement.
6. **External Influences:** Support from Sikh diaspora communities abroad, both ideological and financial, sustained the movement's momentum.

What was Operation Bluestar?

Operation Blue Star, **conducted by the Indian Army between** 1st June and 6th June 1984, aimed to flush out militants from the **Golden Temple and neutralize Jarnail Singh Bhindranwale**, a key figure in the Khalistan movement. It was followed by Operation Black Thunder (1986 and 1988)

Aftermaths of Operation Blue Star:

1. Following Operation Blue Star, **PM Indira Gandhi's assassination sparked widespread communal violence**.
2. **Anti-Sikh Riots of 1984:** Following the assassination of Prime Minister Indira Gandhi by her Sikh bodyguards, large-scale anti-Sikh riots erupted in Delhi and other parts of India. The **government was accused of not taking adequate measures** to prevent the violence and failing to protect the lives and properties of Sikhs.

3. **The bombing of Air India:** A year later, Sikh nationalists from Canada bombed an Air India flight, killing 329 people, claiming it was in retaliation for Bhindranwale's death.
4. **Human Rights Violations:** During and after the period of the Khalistan movement, there were reports of human rights abuses by security forces and terrorists, including extrajudicial killings, torture, and disappearances
5. **Lack of Political Dialogue:** The government failed to engage in meaningful political dialogue with Sikh leaders and address their concerns regarding political representation, economic disparities, and cultural preservation
6. Punjab endured a **prolonged insurgency until 1995**, allegedly supported by Pakistan.

Although the movement was crushed following **Operation Blue Star (1984)** and **Operation Black Thunder (1986 and 1988)**, it continues to **evoke sympathy and support among sections of the Sikh population**, especially in the Sikh diaspora in countries such as **Canada, the UK, and Australia**.

What should be done:

1. **Recognising new challenges:** Recognizing the challenge posed by traditional stakeholders and new social media recruits is necessary.
2. **Collaborate with foreign governments:** The Indian security and intelligence forces need to collaborate with foreign governments to monitor anti-India activities carried out by the Khalistani forces and restrict their funding sources.
3. **Enhance security efforts:** The Indian government must heighten security efforts to counteract the increase in Khalistani social media activity since the opening up of the Kartarpur Corridor.
4. **Promote economic and social development:** At the domestic level, the Punjab and Union governments and security forces must collaborate to improve the economic condition of the state to again put the state on the path of development.
5. **Engage with the Sikh diaspora:** Indian agencies, such as the missions established in those countries, must diplomatically engage with the Sikh diaspora to tackle the misinformation campaign being peddled by Khalistani organizations. Such engagements will facilitate a positive relationship between the Indian state and the Sikh diaspora.
6. **Beef up security:** Indian security forces need to step up their preparedness to tackle the increase in drones used to deliver weapons and drugs to Punjab.
7. **Engage Pakistan:** In addition to Western countries, India should not back away from exercising diplomacy with Pakistan and should work to extradite terrorists hiding in Pakistan.

Conclusion:

The Khalistan movement **still resonates, fueled by factors like vote bank politics**, social issues such as unemployment and drug abuse, and backing from non-state actors.

Insta Links:

- [A brief history of the Khalistan movement](#)

Topics: Population and associated issues, poverty and developmental issues.

5. A STUDY ON AGEING IN INDIA

Context:

The study titled '**Ageing in India – Exploring Preparedness & Response to Care Challenges – A HelpAge India Report**' was released on the eve of **World Elder Abuse Awareness Day (15th June)**.

Key Findings of the Study (India):

1. **Working Status:** Only 15% of elderly persons work, with 24% of males and just 7% of females, highlighting gender disparity.
2. **Lack of Social Security:** Only 29% of elderly people have access to social security schemes.
3. **High Prevalence of Multiple Morbidities:** 54% of elderly persons suffer from two or more non-communicable diseases.
4. **Digital Access:** 59% have no access to a digital device.
5. **Social Participation:** Minimal, with only 7% being members of any social organization.

India's elderly population is rapidly growing due to improved healthcare and increased life expectancy. Currently at **153 million**, it is projected to reach 347 million by 2050 (**20.8%** of the total population). As of Census 2011, older people (60+) make up **8.6% of the total population**, with females outnumbering males among the elderly.

Policy recommendations from the “2023 India Ageing Report”:

Recommendations	Description
Address Gender-Specific Challenges	Policies should specifically address the challenges faced by older women, including widowed and dependent elderly women.
Promote In-Situ Aging	Encourage and facilitate ageing at home (in-situ ageing) where possible, ensuring that elderly individuals can stay within their communities.
Increase Awareness of Schemes	Raise awareness about government schemes and programs designed for older persons, ensuring they can access necessary support.
Regulate Old Age Homes	Implement regulatory measures to oversee Old Age Homes, ensuring the well-being and rights of residents.
Inclusion in Data Collection Exercises	Include relevant questions related to older persons in national data collection exercises to gather credible data on elderly issues.
Focus on Multigenerational Households	Encourage elderly individuals to live in multigenerational households, promoting better care and support within families.

**Other aspects of Ageing:
Gender analysis of the issue:**

Challenges	Description
Financial Dependence	Limited access to employment opportunities, lower wages, and inadequate savings can lead to financial dependence in old age.
Deteriorating Health	Aging can bring deteriorating health, including chronic diseases, mobility issues, and mental health challenges.
Social Isolation	Older women, especially widows, may experience social isolation and loneliness due to the loss of a spouse and limited social networks.
Rural Situation	Older women in rural areas face unique challenges like limited access to healthcare, inadequate infrastructure, and caregiving or agricultural burdens.
Intersectionality	Women from marginalized communities may face compounded challenges in old age due to their socio-economic background, and tribal or minority status.
Ageism and Misogyny	Older women may encounter ageism and misogyny, leading to stereotypes, discrimination, and limited opportunities for engagement in various aspects of life.

Suggested measures:

Measures	Description
Social Security Systems	E.g., Kalaingar Magalir Urimai Thittam is a women’s rights grant scheme just rolled out in Tamil Nadu aimed at providing financial support to eligible women recognized as heads of families
	Karnataka Gruha Lakshmi Scheme supports women heads of families by providing eligible women will receive financial assistance of ₹2000 per month.
	Intergenerational programs: Programs that promote intergenerational bonding, such as mentorship programs and community service projects
Access to Healthcare	Improve access to healthcare services, including geriatric care, preventive screenings, and mental health support, to address the specific health needs of older women.
Social Inclusion	Promote social inclusion and active participation of older women through community-based programs, intergenerational activities, and support networks.
Civil Society Engagement	Community-based initiatives and CSO engagement through Senior citizen clubs and programs, can provide social support and help prevent social isolation among the elderly
	E.g. Asha Deep Foundation provides Day Care Centre for the elderly members of our community who are either neglected, have no children or are abandoned by their families.
Demographic Stability	Focus on policies and programs that address population ageing and the needs of older women, such as promoting family planning, women’s empowerment, and intergenerational solidarity.

Community-based care system for elders	ASHA program could be used for building a community-based workforce to support the diverse health and social care needs of elders
Age-friendly cities	Cities can be designed to be age-friendly, with infrastructure and public spaces that are accessible to all, including elderly citizens.

Government Scheme for Old Age:

Scheme	About
National Social Assistance Programme (NSAP)	Offers non-contributory pensions for the elderly, widowed women, and disabled individuals. Administered by the Ministry of Rural Development.
Pradhan Mantri Vaya Vandana Yojana (PMVVY)	Exclusive pension scheme for senior citizens aged 60 and above. Extended up to 2023 for three more years beyond 2020.
Integrated Program for Older Persons (IPOP)	Aims to enhance the quality of life for senior citizens by providing basic amenities such as food, shelter, medical care, and entertainment opportunities.
Rashtriya Vayoshree Yojana	Central sector scheme funded by the Senior Citizens’ Welfare Fund. Provides aids and assistive living devices to elderly BPL individuals with age-related disabilities.
SAMPANN Project	Launched in 2018, an online pension processing system for Department of Telecommunications pensioners. Direct credit of pension into bank accounts of pensioners.
SACRED Portal for Elderly	Developed by the Ministry of Social Justice and Empowerment. Citizens above 60 can register to find jobs and work opportunities, and access information and guidance on various issues.
Elder Line: Toll-Free Number for Elderly	Provides information, guidance, emotional support, and immediate assistance for elderly citizens, particularly on pension, medical, and legal matters.
SAGE (Seniorcare Ageing Growth Engine) Initiative	A platform offering access to elderly care products and services by credible start-ups, supporting entrepreneurship in the field of elderly care.

Conclusion:

By recognizing the specific needs of older persons and providing targeted support, we can create a society that values and empowers them, ensuring their well-being and active participation in all spheres of life.

Insta Links:

1. [Issues related to Elderly People](#)
2. [old age care](#)
3. [World Population Prospects](#)

Mains Links:

Q. Despite 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. (UPSC 2021)

GENERAL STUDIES – 2

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

1. 10 YEARS OF ANDHRA-TELANGANA BIFURCATION

Context:

The Andhra Pradesh bifurcation underscores the **need for thoughtful handling of major changes in India’s political geography**. The division, now a decade old, highlights the **impact of reconfiguration on states’ political clout and federal dynamics**.

How are states formed?

Article 3: Parliament holds the power to **create new states through legislation**. However, such a bill can only be introduced on the **recommendation of the President**. Before recommending a bill that affects state boundaries or names, the **President must consult the respective state legislatures**. Parliament can enact laws to create new states **with a simple majority**.

Factors on which states are divided:

- Language:** The State Reorganization Commission (SRC) led by Justice Fazal Ali, appointed by the Central Government in 1953, **recommended the formation of 14 states and 6 Union territories (UTs)** based on factors such as language, culture, financial viability, and national welfare. These recommendations were implemented through the **Constitution (7th Amendment) Act of 1956**.
- Development:** States like Uttarakhand, Chhattisgarh, and Jharkhand, formed in 2000, and Telangana in 2014, were created based on developmental considerations.
- Other factors:** The reorganization of states in India's northeastern region was influenced by factors such as race, culture, and customs, reflecting the diverse socio-cultural landscape of the country.

Do we need new states now?

New States Shine: Outperforming the Old Guard

- **The Eleventh Plan document provides** some data which support that the smaller newly carved states — specifically **Uttarakhand and Chhattisgarh** — **grew at a rate faster** during the period 2004-05 to 2008-09) than their parent states (Uttar Pradesh which grew at about and Madhya Pradesh during the same five-year period)
- The **creation of new capital cities** (such as Ranchi, Raipur and Dehra Dun) and the associated infrastructure.
- **These newer cities will attract private investors**, resulting in employment opportunities and eventually better standard of living for citizens

However, new states isn't the only solution

- Whether or not smaller states are successful in developing their regions is dependent on the extent of **decentralisation**.
 - For instance, if a **small state is unable to devolve enough funds and physical resources to a far-flung area of the state to maintain its roads**, the result would be inadequate quality of public services
- Further, the creation of one new state will lead to the demand for and creation of other new states.
- Moreover, **linguistic homogeneity has not proven to be effective in keeping the states integrated** (the cases of Bihar, UP and Madhya Pradesh)

Background of Andhra-Telangana Formation?

- The push for a separate Telangana stemmed from perceived regional inequalities.
- 2014: **Telangana was formed by separating the northwestern part of Andhra Pradesh**.
- **Hyderabad** became the capital of Telangana when it was formed in 2014.
- However, the **division of assets and liabilities** between Andhra Pradesh and Telangana as outlined in the **Andhra Pradesh Reorganisation Act of 2014**, remains unresolved.

What questions does Andhra Pradesh's split raise about the Indian republic?

- Unity of Telugu-Speaking Elites:** The split raises concerns about the unity of Telugu-speaking elites compared to Kannada and Marathi-speaking regions.
- Potential Challenges for Other Linguistic Groups:** Speculation arises about whether other linguistic groups may face similar challenges in the future due to common regional disparities.
- Reconsideration of Organizing Principle:** The division prompts questions about whether states should be organized based on factors like territory or population instead of language, urging India to address these fundamental questions sooner.
- Disorderly Bifurcation Process:** It highlights concerns about the disorderly bifurcation process, unfulfilled promises, and mishandling of asset distribution, prompting a reassessment of future state divisions.

Impacts on Representation and Federal Structure:

- Unequal Representation:** Different state sizes lead to varying numbers of seats in the central legislature. This creates unequal political power and resource allocation, potentially marginalizing some regions.
- Shifting Power Dynamics:** State divisions can alter the balance of power between regions. Smaller states may have less influence in national decision-making.
- Discontent and Resource Allocation:** Unequal political power can lead to discontent among states with less power. This may affect how economic resources are allocated, potentially favouring larger states.

Way Forward for Andhra Pradesh and Telangana

- Permanent Inter-State Council:** Facilitate communication and resolve disputes.
- Special Financial Assistance:** Grant special status and economic packages for both states.
- Judicial Mechanism for Asset Division:** Establish a fast-track court to resolve disputes.
- Governance Reforms:** Fixed terms for governors, better representation, and continuous dialogue.
- Development of Backward Regions:** Allocate grants for development in both states.
- Prioritize Infrastructure Projects:** Focus on road connectivity, power, and education.

Conclusion:

The responsibilities assigned to the **Inter-State Council by the Constitution** (in terms of resolving inter-state disputes) need to be fulfilled in reality and not just in papers to resolve the continuing dispute between Andhra and Telangana. Similarly, **Zonal councils need to be revived to discuss the matters of common concern** to states in each zone—matters relating to social and economic planning, border disputes, inter-state transport, etc. India is the **epitome of unity in diversity**. However, to strengthen this unity furthermore, both the Centre and state governments need to imbibe the ethos of **cooperative federalism**.

Insta Links:

- [Water dispute between Andhra Pradesh and Telangana](#)

Prelims Link:

Q. The power of the Supreme Court of India to decide disputes between the Centre and the States falls under its (UPSC 2014)

- advisory jurisdiction
- appellate jurisdiction
- original jurisdiction
- writ jurisdiction

Ans: C

2. ANALYSIS OF NOTA (NONE OF THE ABOVE)

Context:

In Indore, NOTA (None of the Above) emerged runner-up with **more than 200,000 votes**

What happened in Indore?

In Indore, **BJP's Shankar Lalwani won with a significant margin of 10.09 lakh votes, receiving 12,26,751 votes**. Surprisingly, NOTA emerged as the closest competitor with 2,18,674 votes, marking the highest-ever NOTA count in any constituency. The previous record was in **Gopalganj, Bihar, in 2019, with 51,660 NOTA votes**.

What is NOTA?

NOTA allows voters to reject all candidates, indicating dissatisfaction. Even if it wins the majority, the runner-up candidate wins. The Supreme Court specifies it's for universal adult suffrage and direct elections. It's also used in countries like **France, Belgium, Brazil, Finland, and Sweden**. NOTA was introduced in 2013 after a Supreme Court (SC) direction in a public interest litigation filed by the **Peoples Union for Civil Liberties (PUCL)**.

What happens if NOTA receives the highest number of votes in a constituency?

If NOTA receives the highest number of votes in a constituency, currently, there are no legal consequences attached to it. The **second most successful candidate wins**. However, there's a petition under consideration by the apex court to declare elections "**null and void**" if NOTA wins the majority. The petitioner advocates for guidelines ensuring consequences for candidates failing to surpass NOTA.

Ever wondered?

*States like Maharashtra, Haryana, Puducherry, Delhi, and Chandigarh) have declared **NOTA as a "Fictional Electoral Candidate,"** triggering fresh elections if it surpasses individual candidates' votes.*

Significance of NOTA option:

Significance	Explanation
Disapproval	NOTA allows dissatisfied voters to express disapproval towards contesting candidates . For example, women activists in Kerala advocated for NOTA when no female candidate was present. In Tamil Nadu, youth groups used NOTA as a protest against corruption.
Participation in voting	NOTA can increase voter turnout by motivating citizens to participate in elections.
Prevent bogus votes	By encouraging more people to cast their votes, even if they don't support any candidate, NOTA helps reduce the count of bogus votes.
Enable the right to reject	NOTA enables voters to exercise their right to reject all candidates and register a vote of rejection.
Right to secrecy	Previously, voters had to inform the presiding officer if they chose "None of the above," compromising ballot secrecy. NOTA ensures the maintenance of voters' right to secrecy.

Is NOTA allowed in Rajya Sabha Polls?

No, the Supreme Court had previously, **ruled out the use of the 'None Of The Above'** (NOTA) option in the Rajya Sabha

elections. The court observed that **NOTA is intended for universal adult suffrage and direct elections**, not for proportional representation, as in Rajya Sabha polls.

Issues with NOTA:

1. **No electoral value:** NOTA votes are merely symbolic and do not affect the outcome of the election. Even if NOTA receives a majority, the candidate with the highest vote share still wins.
2. **Not a right to reject:** Critics argue that NOTA does not provide the right to reject candidates but rather registers a negative opinion.
3. **Lack of awareness:** Many voters are unaware of NOTA's existence or its implications, leading to underutilization of this option.
4. **Caste bias:** In some cases, high NOTA votes in reserved constituencies suggest a bias against candidates from certain castes, potentially undermining the purpose of NOTA.

Suggestions for Improvement of NOTA:

1. **Re-elections:** If NOTA wins the majority, re-election should occur with new candidates. Maharashtra and Haryana have implemented similar measures.
2. **Barring candidates:** Those receiving fewer votes than NOTA should be barred from re-election. Haryana treats NOTA as a "fictional candidate" in municipal polls.
3. **Cost on candidates:** Parties losing to NOTA should cover re-election costs, and disabling the NOTA button during re-elections may prevent repeated cycles.
4. **Short-term ban:** Candidates losing to NOTA could face a temporary ban on contesting elections.
5. **Awareness:** Alongside NOTA, efforts to enhance voter awareness are crucial to prevent its misuse.

Conclusion:

The Supreme Court expects NOTA to prompt a systemic change, compelling parties to nominate candidates of integrity. Strengthening NOTA by empowering it to reject and call for re-elections if it wins the majority is crucial.

Insta links:

- [Insights into Editorial: NOTA and the Indian voter](#)

Mains Links:

Q. Discuss the role of the Election Commission of India in the light of the evolution of the Model Code of Conduct. (USPC 2022)

Prelims Links:

Q. Consider the following statements: (USPC 2017)

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

Which of the statements given above is/are correct?

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

Ans: (d)

3. ANALYSIS OF CONSTITUTIONAL MORALITY

Context:

The article criticizes the recent government's actions for disregarding the Indian Constitution.

Examples of Recent Government Actions Against the Constitution:

- **Preemptive Decision-Making:** The government approved a ₹20,000 crore scheme (Pradhan Mantri Kisan Samman Nidhi) before ministerial portfolios were allocated.

- **Cabinet Actions Without Portfolios:** The first cabinet meeting decided on assisting three crore additional households under the [Pradhan Mantri Awas Yojana](#) without assigned portfolios, raising procedural legitimacy questions.
- **Extension of Tenures:** The Government extended the tenures of the National Security Adviser and the Principal Secretary prematurely, using the old Appointments Committee setup without reconstituting the Cabinet Committee.

What is Constitutional morality?

It refers to adherence to the **core principles and values enshrined in a constitution**, guiding the conduct of both the government and its citizens. It encompasses values such as **justice, liberty, equality, fraternity, and the rule of law**, ensuring the Constitution's spirit is upheld beyond mere legal compliance. In India, the term **was first used by Dr. B.R. Ambedkar**.

Ever Wondered?!

What are the Pillars of Constitutional Morality:

1. **Constitutional Values:** Justice, liberty, equality, fraternity, secularism, dignity.
2. **Rule of Law:** Supremacy and accountability under the law for all, including officials.
3. **Democratic Principles:** Functioning representative democracy with citizen participation.
4. **Fundamental Rights:** Respecting and protecting rights like equality and freedom of speech.
5. **Separation of Powers:** Balancing legislative, executive, and judicial branches.
6. **Checks and Balances:** Preventing power abuse and protecting individual rights.
7. **Constitutional Interpretation:** Promoting principles and adapting to societal changes.
8. **Ethical Governance:** Ensuring transparency, accountability, and integrity in public service.

Significance:

1. **Safeguarding Democracy:** Constitutional morality ensures the preservation of democratic values and prevents authoritarianism.
2. **Protection of Rights:** It upholds individual rights and freedoms, ensuring that laws and governance are aligned with constitutional mandates.
3. **Judicial Benchmarks:** Serves as a guiding principle for the judiciary in interpreting and applying the Constitution.
4. **Social Justice:** Promotes social justice by ensuring that marginalised communities are protected and their rights respected.
5. **Bring positive change in society:** It can be used to interpret laws or statutes no longer consistent with recent times, thus bringing positive societal change.

B.R. Ambedkar's View on Constitutional Morality:

1. **Cultivation Needed:** Constitutional morality is not innate; it must be cultivated.
2. **Respect for Forms:** It involves a paramount reverence for the forms of the Constitution.
3. **Sacredness:** The forms of the Constitution must be sacred to both those in power and their opponents.
4. **Essential for Democracy:** Constitutional morality ensures accountability and adherence to democratic principles.

Key Case Laws Upholding Constitutional Morality in India:

1. **Navtej Singh Johar v. Union of India (2018):** Decriminalisation of Section 377 IPC, which criminalised consensual homosexual acts. The Supreme Court **emphasised constitutional morality over social morality**, decriminalising consensual homosexual acts among adults.
2. **Sabarimala Temple Case:** Ban on entry of women of menstruating age into Sabarimala temple. The Supreme Court held the ban unconstitutional, which **affirmed the constitutional morality of gender equality and non-discrimination over religious customs**.
3. **Joseph Shine v. Union of India (2018):** The Supreme Court **decriminalised adultery**, stating that the law was archaic and violated constitutional guarantees of equality. This highlighted the importance of **individual autonomy, equality and human dignity to all**.
4. **NCT of Delhi vs. Union of India (2018):** The Supreme Court equated constitutional morality with the spirit of the Constitution itself. It held that Constitutional morality, in its strictest sense, implies a **strict and complete adherence to the constitutional principles** as enshrined in the Constitution.
 - a. **Eg. 7th Schedule- Division of powers between centre and states.**

Challenges to Constitutional Morality:

1. **Social and Cultural Norms:** Deep-rooted societal and cultural norms often conflict with constitutional values, leading to resistance to implementing judicial decisions.

- a. **Example: Resistance to the Sabarimala judgment due to traditional beliefs.**
2. **Political Influence:** Politicians may undermine constitutional morality for electoral gains, promoting majoritarian views over constitutional principles.
 - a. **Example: Political backlash against electoral bonds ruling of the Supreme Court.**
3. **Lack of Awareness:** Insufficient awareness and understanding of constitutional values among the general public can hinder the acceptance and enforcement of constitutional morality.
 - a. **Example: Many Indians still believe that Hindi is the national language.**
4. **Subjectivity:** Some argue that the concept of constitutional morality is highly subjective and that it can be used to justify different actions and decisions depending on the perspective of the person or institution interpreting it.
5. **Judicial Limitations and Overreach:** Balancing judicial activism to uphold constitutional morality without overstepping the separation of powers can be challenging.
6. **Economic and Social Inequality:** Economic and social inequalities can limit the ability of marginalised groups to seek justice and uphold constitutional morality.

Conclusion:

Constitutional morality is a cornerstone for ensuring that the spirit and values of the Constitution are upheld in governance and society. While key judicial rulings in India have reinforced this principle, various challenges such as societal norms, political interference, and lack of public awareness persist. **Addressing these challenges requires concerted efforts from all branches of government, civil society, and citizens to truly embed constitutional morality in the fabric of the nation.**

Mains Link:

Q: What is meant by the term 'constitutional morality'? How does one uphold constitutional morality? (UPSC 2019)

4. PATNA HIGH COURT STRIKES DOWN 65% QUOTA IN BIHAR

Context:

The Patna High Court recently struck down Bihar's attempt to raise Backward Classes (BC) reservation to 18%, Extremely Backward Communities (EBC) to 25%, and adjusted quotas for Scheduled Castes and Scheduled Tribes, **resulting in a total reservation of 65%.**

Background of the case:

- The Bihar government decided to increase reservations for Backward Classes, Extremely Backward Classes (EBC), Scheduled Castes (SC), and Scheduled Tribes (ST) following a caste-based survey, which showed these **castes constituted 84% of the population of Bihar.**
- This decision aimed to **address the inadequate representation of these groups** without adhering to a proportionate basis.
- The move, which included a **10% quota for Economically Backward Classes (EWS), raised reservations in Bihar to 75% (65% for backward castes and 10% for EWS),** surpassing the 50% ceiling mandated by the Supreme Court. Subsequently, a Public Interest Litigation (PIL) challenging this increase was filed in the Patna High Court.

The Patna High Court struck down amendments to Bihar's reservation system for the following reasons:

1. **Violation of Constitutional Equality:** The amendments were deemed to violate [Articles 14, 15, and 16](#) of the Constitution, which guarantee equality before the law and prohibit discrimination on various grounds including caste.
2. **Exceeding 50% Reservation Limit:** The amendments raised reservations in Bihar to 65%, which exceeded the 50% ceiling set by the [Supreme Court in the Indra Sawhney case \(1992\)](#). The court upheld the **50% limit as a legal restriction on total reservations.**
3. **Lack of Proportionate Basis:** The reservation increase was not based on a proportionate representation framework, which is required for reservation policies to align with constitutional principles.
4. **Absence of Adequate Study:** The state government did not conduct a thorough analysis or in-depth study to justify the need for and impact of the increased reservations, raising concerns about the rationale behind the amendments.
5. **Judicial Precedents:** The court referred to previous judgments and constitutional interpretations that underscored the importance of maintaining a balance between affirmative action and constitutional limits on reservations.

Ever Wondered?!**What was Indra Sawhney's judgment?**

The 1992 Indra Sawhney judgment by a 9-judge Constitution bench of the Supreme Court established that reservations for SCs, STs, and OBCs must not exceed 50% of total seats in legislatures, higher education, and public employment. This limit was considered **fair and reasonable, with flexibility** allowed only in extraordinary situations.

Other judgement:

- 1) **Maratha Reservation**: Increased total reservations in Maharashtra to 68%, struck down by the SC in 2021 for exceeding the 50% ceiling.

Exceptions:

1. **State Exceptions**: Despite the limit, some states, notably **Tamil Nadu with 69% reservation**, and occasionally the Union government and the Supreme Court itself, have breached this ceiling.
2. **Economically Weaker Sections (EWS) Reservation**: Upheld by a 3:2 majority in 2023, stating the 50% ceiling is flexible but applies primarily to SCs, STs, and OBCs reservations.

Arguments in favour of the 50% Ceiling:

1. **Contradiction with Equality**: Critics argue exceeding the 50% reservation limit contradicts the principle of equality.
2. **Balance Needed**: Maintaining a balance between reservations for affirmative action and equality under the law is crucial.
3. **Reservations as Exceptions**: Reservations should be exceptions to ensure equality, as warned by Dr B R Ambedkar in the Constituent Assembly.

Criticism of the 50% Ceiling and Support for Reservations:

1. **Arbitrary Limit**: Critics view the 50% reservation limit as arbitrary, imposed by courts despite legislative attempts to exceed it.
2. **Debate on Legitimacy**: Ongoing debate questions the legitimacy and flexibility of the 50% reservation ceiling established through judicial interpretation.
3. **Reservations as Fundamental Right**: Some argue reservations are integral to the fundamental right to equality and a part of the Constitution's basic structure.
4. **Judicial Perspective**: The Supreme Court's 2022 ruling upheld the OBC quota in NEET, affirming that reservations enhance merit distribution rather than undermine it.

Conclusion:

The Patna High Court's decision underscores the challenge of balancing social justice initiatives with constitutional limits on reservation quotas, highlighting the importance of rigorous study and adherence to judicial precedents in policy-making.

Insta Links:

- 2) **Reservation System in India**

Mains Link:

Q. Whether the National Commission for Scheduled Castes (NCSC) can enforce the implementation of constitutional reservation for the Scheduled Castes in the religious minority institutions? Examine. (UPSC 2018)

Prelims Link:

Q. Consider the following statements: (USPC 2020)

1. The Constitution of India defines its 'basic structure' in terms of federalism, secularism, fundamental rights and democracy.
2. The Constitution of India provides for 'judicial review' to safeguard the citizens' liberties and to preserve the ideals on which the Constitution is based.

Which of the statements given above is/are correct?

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

Ans: (d)

5. HUMAN DIGNITY VS. RELIGIOUS PRACTICES

Context:

The Madurai Bench of the Madras High Court allowed the resumption of “annadhanam” and “angapradakshanam” at Nerur Sathguru Sadasiva Brahmendral’s resting place.

What is “annadhanam” and “angapradakshanam”?

Annadhanam is the practice of offering **free food to devotees**. **Angapradakshanam** involves **circumambulation by rolling on the ground around a sacred site**, in this context, **rolling over plantain leaves left by other devotees after eating**, is believed to confer spiritual benefits. These practices were halted in 2015 due to concerns over human dignity.

What did HC say?

- Right to Privacy and Article 25(1):** Justice Swaminathan invoked these constitutional rights to reinstate the practices.
 - Article 25(1) of the Constitution guarantees** the right to freely profess, practice, and propagate religion.
- Spiritual Orientation:** Argued that the right to privacy includes spiritual orientation, similar to gender and sexual orientation.
- Communal Harmony:** Highlighted that the practice at Nerur involved all devotees, regardless of caste, promoting communal harmony and social integration.
- Comparison to Supreme Court Order:** Noted that the Karnataka case (which was banned by SC) involved only Brahmins’ leftovers, while at Nerur, all devotees participated.
- Communal Amity:** Observed that the practice points to communal amity and social integration.

However, critics argue that such practices, rooted in superstition, conflict with human dignity and the duty to promote scientific temper and humanism.

Ever Wondered?!

Ethical Issues with Such Practices:

- Human Dignity:** Practices like “angapradakshanam” may degrade human dignity by requiring participants to roll on leftovers.
- Health Risks:** Rolling on leftover food can pose significant hygiene and health risks.
- Equality and Non-Discrimination:** These practices may perpetuate social hierarchies and discrimination, violating principles of equality.
- Scientific Temper:** Promoting superstitious practices conflicts with the constitutional duty to foster scientific temper, humanism, and the spirit of inquiry.
- Consent and Voluntariness:** Even if voluntary, there may be social pressures that undermine genuine consent.
- Public Morality:** Practices perceived as degrading or harmful may be against public order and morality.
- Cultural Relativism vs. Universalism:** The conflict between respecting cultural practices and upholding universal human rights standards.

- In India, personal laws govern aspects like **religious rites, marriage, divorce, maintenance, and succession, among others**, based on religious affiliations, despite the country’s secular nature.
- This pluralistic approach contrasts with the constitutional **guarantee of equality under the law**, creating a dual system where personal laws apply differently to individuals based on their religion.
- These laws have **remained static and outdated**, while constitutional rights have evolved to reflect modern values, **leading to inevitable conflicts between the two.**

Other Contemporary incidents where personal laws have conflicted with Fundamental Rights:

Incident	Conflict with Fundamental Rights	Court Ruling/Comments
Triple Talaq Case	Violated the Fundamental Right to Equality and the Right to Life and Personal Liberty under Article 21	Declared unconstitutional by the Supreme Court in the Shayara Bano Judgement (2017)

Sabarimala Case	Gender equality and the Right to Freedom of Religion under Article 25	Supreme Court in 2018 allowed women of all ages to enter the Sabarimala temple
Female Genital Mutilation (FGM)	Violated the Right to Life and Personal Liberty under Article 21	Criticized and challenged for violating fundamental rights
Polygamy and Nikah Halala	Violated the right to equality	Referred to a Constitution Bench in the case of Sameena Begum vs Union of India
Uniform Civil Code Proposal	Align personal laws with Fundamental Rights, potential infringement on religious freedoms	Proposed by the government, implementation remains slow and contentious

Conclusion:

There is a significant **divergence in judicial opinions regarding the applicability of Fundamental Rights to Personal Laws in India**. While some judgments assert that Personal Laws are outside Article 13 and immune to challenges based on Fundamental Rights violations, a contrasting view has emerged recently, advocating for such laws to be tested against Fundamental Rights. Achieving harmony through judicial consistency is crucial.

Insta Links:

[Strike a fine balance, have a just civil code](#)

Mains Links:

‘Constitutional Morality’ is rooted in the Constitution itself and is founded on its essential facets. Explain the doctrine of ‘Constitutional Morality’ with the help of relevant judicial decisions. (UPSC 2021)

Prelims Links:

Q1. Consider the following provisions under the Directive Principles of State Policy as enshrined in the Constitution of India: (UPSC 2012)

1. Securing for citizens of India a uniform civil code
2. Organising village Panchayats
3. Promoting cottage industries in rural areas
4. Securing for all the workers reasonable leisure and cultural opportunities

Which of the above are the Gandhian Principles that are reflected in the Directive Principles of State Policy?

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

Ans: B

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

6. FEDERALISM IN INDIA AFTER THE 2024 GENERAL ELECTION

Context:

The aftermath of the 2024 general election in India has brought to light a significant **shift towards increased democratization**, with regional parties gaining substantial representation in Parliament. This development is expected to **bolster federalism in India**.

What is Federalism?

Federalism is a system of government **that combines a central or “federal” government with regional governments** within a single political framework, distributing powers between them. In India, the **Constitution outlines the structure of governance**, delineating the relationship between the federal government and state governments. Legislative, administrative, and executive powers are divided between the Union government and the states through the **Union List, State List, and Concurrent List**.

Features of Indian Federalism:

- Multilevel Government:** Federalism entails the existence of two or more tiers of government, typically a central or federal government and regional or state governments.
- Separate Jurisdiction:** Each level of government possesses its own authority and autonomy in areas such as legislation, taxation, and administration, even though they govern the same populace.
- Constitutional Specification:** The powers and functions of each tier of government are clearly delineated and safeguarded by the Constitution, ensuring a balance of authority.
- Dispute Resolution Mechanism:** The Supreme Court is vested with the authority to adjudicate disputes arising between state governments, providing a mechanism for resolving conflicts within the federal structure.

What does the 2024 Election result mean for Indian federalism?

- Increase in regional party** representation in Parliament.
- Diverse composition** in ruling coalition and opposition.
- Potential for more **inclusive governance**.
- Voter preference for **addressing local issues** directly.
- The challenge** to traditional **dominance of central parties**.
- Concerns over **central policies undermining** state autonomy.
- Tensions over resource allocation** and political rhetoric during the campaign.

Challenges to Centre-State Relations:

Challenges	Examples
State border disputes	Assam-Meghalaya, Assam-Mizoram disputes
Interference in state matters	Government of NCT of Delhi (GNCTD) Act, Agriculture laws, 2020
Alleged use of autonomous agencies against Opposition-led states	Enforcement Directorate raids
Governors sitting over state bills	Tamil Nadu, Telangana Governors pulled by Supreme Court
Resource Allocation Complaints	Kerala’s complaints on resource transfer, Karnataka’s drought relief concerns, West Bengal’s MGNREGS funds
Legal Disputes	Rise in legal disputes between states and Centre, as highlighted by Supreme Court
Bias in Finance Commissions	States argue for fair allocation, citing bias towards the Centre in Finance Commissions
Disparities	Richer states like Mumbai contribute significantly to national taxes but receive a smaller share, leading to development disparities. Poorer states require more resources for development , and while the Finance Commission aims for fair distribution, historical disparities remain.

The concept of cooperative federalism:

It implies a system of governance where central and state governments collaborate and work together to achieve common goals, respecting each other’s constitutional boundaries.

Constitutional Boundaries between Centre and States:

- Division of Powers:** The Constitution of India divides powers between the Union and state governments through three lists in the Seventh Schedule: Union, state and concurrent lists.
- The doctrine of Pith and Substance:** This doctrine is used by courts to determine under which list a particular legislation falls. If the core subject matter of legislation falls within a list assigned to one level of government, the law is deemed valid even if it incidentally encroaches on a subject in another list.

Some examples to illustrate the spirit of cooperative federalism:

- GST Council:** The GST Council, which includes representatives from both the central and state governments, is tasked with making decisions on tax rates, exemptions, and the implementation of GST. This collaborative framework ensures that both levels of government have a say in the tax policy, balancing regional interests with national

priorities.

2. **Disaster Management:** In the event of natural disasters, such as floods, earthquakes, or pandemics, the central government often works closely with state governments.
3. **National Education Policy (NEP) 2020:** While the policy outlines broad national objectives, it allows states to customise and implement reforms according to their specific needs and contexts.
4. **River Water Disputes:** The **Inter-State River Water Disputes Act** allows the central government to set up tribunals to adjudicate disputes, but the implementation of tribunal awards requires cooperation from the states involved. **For instance, the resolution of the Cauvery water dispute** involved extensive consultations and compliance from both Karnataka and Tamil Nadu, overseen by the central government.
5. **Niti Aayog:** NITI Aayog acts as the quintessential platform for the Government of India by bringing States together as 'Team India' to work towards the national development agenda.

Strengthening Federalism:

1. **Strengthening of Inter-State Council:** Over the years multiple committees have recommended strengthening of the Interstate Council where the concurrent list subjects can be debated and discussed, balancing Centre state powers.
2. **Democratic Decentralisation** of administration and strengthening governments at all levels in true spirit. Power should be decentralised based on the **principle of subsidiarity**.
3. **Increase Resource Devolution:** Raising the current 41% resource devolution from the Centre to the States can empower states, enabling more localized governance.
4. **Fair Finance Commission Practices:** The Sixteenth Finance Commission should strive for equitable treatment of all states, reducing friction and promoting fairer resource distribution, especially benefiting poorer states to address inequality.
5. **Enhance State Autonomy:** By diminishing the central government's control in programs such as the Public Distribution System and MGNREGS, states can affirm their constitutional roles as equal partners in governance, preventing central dominance over state initiatives.

Conclusion:

For the central government to exercise its powers within constitutional boundaries in the spirit of cooperative federalism, it must engage in continuous dialogue, respect the autonomy of states, and ensure that policies and decisions are made collaboratively. This approach not only strengthens the federal structure but also promotes a more inclusive and responsive governance system.

Insta Links:

- [Federal system of India- federalism with tilt towards centre](#)

Mains Links:

Though the federal principle is dominant in our constitution and that principle is one of its basic features, but it is equally true that federalism under the Indian Constitution leans in favour of a strong Center, a feature that militates against the concept of strong federalism. Discuss. (UPSC 2014)

Prelims Links:

Q. Which one of the following is not a feature of Indian federalism? (UPSC 2017)

- (a) There is an independent judiciary in India.
- (b) Powers have been clearly divided between the Centre and the States.
- (c) The federating units have been given unequal representation in the Rajya Sabha.
- (d) It is the result of an agreement among the federating units.

Ans: (d)

Q. Local self-government can be best explained as an exercise in (USPC 2017)

- (a) Federalism
- (b) Democratic decentralization
- (c) Administrative delegation
- (d) Direct democracy

Ans: (b)

7. GRASSROOTS GOVERNANCE: THE DYNAMICS OF VILLAGE GOVERNMENT IN INDIA

Context:

The World Bank Group released a Policy Research Working Paper titled “Two Hundred and Fifty-Thousand Democracies: A Review of Village Government in India,” analyzing the impact of the **73rd Constitutional Amendment** on India’s democratic path.

What is Panchayati Raj (PRI)?

A Panchayati Raj Institution (PRI) is a **local self-government system in rural areas of India**, established to decentralize administration and promote grassroots democracy.

What was the 73rd Constitutional Amendment?

- It added **Part IX to the Constitution, encompassing provisions from Article 243 to 243-O**.
- Led to the **establishment of Gram Sabha** as a permanent unit **comprising all registered village residents**
- Implementation of three tiers of Panchayati Raj Institutions (PRIs) at the village, intermediate, and district levels (**Exempt: states with populations below 20 lakh may not have the intermediate level**)
- Mandates **reservation of seats for Scheduled Castes (SCs) and Scheduled Tribes (STs) at every level of the Panchayat**, proportionate to their population, along with **1/3rd reservation of seats for women**.

A New Era for Village Governance:

1. **Increased Political Participation:** The amendment led to a surge in political participation at the grassroots level, with more candidates contesting Panchayat elections.
2. **Empowerment of Marginalized Communities:** Reserved seats for marginalized communities, including Scheduled Castes, Scheduled Tribes, and women, played a pivotal role in enhancing political competition.
 - **Eg: 21 states** in India have reserved 50% of seats in Panchayati Raj institutions (PRIs) for women.
3. **Formation of Multiple Political Parties:** The competitive landscape saw the emergence of multiple political parties at the local level, leading to a **vibrant political environment** within Panchayats.
4. **The shift in Power Dynamics:** The competitive nature of Panchayat elections signalled a shift in power dynamics, emphasizing the importance of local governance in shaping policies and addressing community-specific issues.
5. **Enhanced Accountability:** The competitive political landscape was envisioned to enhance accountability as elected representatives would be mindful of their performance to secure re-election in subsequent terms.

Key Findings of the World Bank Report:

- **Funding Dependency:** PRIs rely heavily on grants from state and national authorities.
- **Shortage of Functionaries:** Scarcity of Panchayat Secretaries, with an average of **0.67 per** Gram Panchayat.
- **Recentralization Trends:** Local government autonomy eroded by MIS-based beneficiary selection and digital tracking.
- **Revenue Composition:** Only 1% of revenue is generated by taxes, majority from grants.
- **Revenue Per Panchayat:** Average tax revenue per panchayat is Rs 21,000, while grants from central and state governments total Rs 17 lakh and Rs 3.25 lakh respectively.
- **Inter-State Disparities:** Kerala and West Bengal lead in revenue per panchayat, while Andhra Pradesh, Haryana, Mizoram, Punjab, and Uttarakhand lag behind.

Other issues with the Panchayats:

1. **Inadequate Capacity Building:** Many Panchayat members lack the necessary skills and knowledge to manage finances, plan projects, and monitor progress resulting in inefficiency.
2. **Financial Constraints:** Panchayats heavily rely on central government grants, which are often delayed or inadequate.
 - **Eg:** Panchayats received **95%** of their revenues from the **devolved** funds from the Centre/State while generating only 5% from own powers.
3. **Lack of Transparency and Accountability:** Weak monitoring systems and limited public access to information make it difficult to hold Panchayats accountable for their actions.
4. **Socio-economic Inequalities:** Existing social inequalities and discrimination can hinder equitable development within Panchayat jurisdictions. This requires specific interventions to address the needs of marginalized communities and ensure inclusive development.
5. **Limited Community Participation:** Many citizens remain unaware of their rights and responsibilities in the Panchayati Raj system.

Key Recommendations of the World Bank Report:

1. **Enhance Local Tax Capacity:** Improve property records and grant Panchayats more authority to levy taxes.
2. **Empower Gram Sabhas:** Increase their frequency and broaden their authority, including village planning and beneficiary selection.
3. **Strengthen SHG-Panchayat Linkages:** Foster greater coordination between Self-Help Groups (SHGs) and Panchayats to better address women’s needs and improve decision-making.

Other Suggested Measures:

- Fiscal autonomy:** Grant Panchayats greater fiscal autonomy by empowering them to raise and manage their own finances. Eg. **Kerala's** decentralized planning model has empowered Panchayats.
- Regular elections:** Ensure regular, timely elections to maintain the democratic functioning of Panchayats.
- Citizen participation:** Promote awareness campaigns and civic education to enhance citizen understanding and participation in local governance and enhance regular meetings and participation in **Gram Sabha**.
- Social audit:** Strengthen social audit mechanisms by providing training to villagers, ensuring transparency in financial records, and addressing concerns raised through audits.
 - Eg:** Social audits in **Rajasthan** have led to the identification and correction of irregularities.
- Inter-panchayat coordination:** Encourage joint planning and resource sharing through inter-panchayat **forums, workshops**, and knowledge exchange programs.
- Decentralisation:** Devolve additional powers and responsibilities to Panchayats across sectors like education, health, and agriculture, while providing **capacity-building support** to ensure effective implementation.

Ever wondered?

Government initiatives for Stronger Local Governance

- SVAMITVA Scheme:** Survey of Villages and Mapping with Improvised Technology in Village Areas (SVAMITVA) scheme was launched on National Panchayati Raj Day 2020 to enable the economic progress of Rural India by providing a "**Record of Rights**" to every rural household owner.
- e-Gram Swaraj e-Financial Management System:** e-Gram Swaraj is a Simplified Work Based Accounting Application for Panchayati Raj.
- Geo-Tagging of Assets:** The Ministry of Panchayati Raj (MoPR) has developed "mActionSoft", a mobile-based solution to help in capturing photos with Geo-Tags (i.e., GPS Coordinates) for the works which have assets as an output.
- Citizen Charter:** In order to focus on the commitment of the PRIs towards its Citizens in respect of the Standard of Services, the MoPR has provided a platform to upload Citizen Charter documents.

Conclusion:

The **Venugopal Committee report of 2018**, highlighted the critical role of Panchayats in fostering rural development and achieving sustainable progress. It emphasizes the need to address the challenges faced by Panchayats, such as inadequate capacity building, financial constraints, lack of transparency, and limited citizen participation.

Insta Links:

- [Local Self Governance](#)

Mains Links:

Q. To what extent, in your opinion, has the decentralisation of power in India changed the governance landscape at the grassroots? (UPSC 2022)

Q. Assess the importance of the Panchayat system in India as a part of local government. Apart from government grants, what sources can the Panchayats look out for financing developmental projects? (USPC 2018)

Q. In absence of a well-educated and organised local level government system, 'Panchayats' and 'Samitis' have remained mainly political institutions and not effective instruments of governance. Critically discuss. (USPC 2015)

Prelims Links:

Q. Local self-government can be best explained as an exercise in (UPSC 2017)

- (a) Federalism
- (b) Democratic decentralisation
- (c) Administrative delegation
- (d) Direct democracy

Ans: (b)

Q. The fundamental object of Panchayati Raj system is to ensure which among the following? (UPSC 2015)

- People's participation in development
- Political accountability
- Democratic decentralisation
- Financial mobilisation

Select the correct answer using the code given below

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

Ans: (c)

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

8. WOMEN MPS IN LOK SABHA

Context:

The 18th Lok Sabha will **have 74 women Members of Parliament (MP)**, a slight decrease from 2019 when 78 women were elected.

Status of women in legislatures:

- Women will now constitute 13.6% of the new Lok Sabha, down from 14.3% in the previous term.** (al-

though increasing from **5% in the first Lok Sabha**)

2. **India's representation of women in the Lok Sabha**, at **13.63%**, falls behind several other countries, with South Africa, the UK, and the US boasting higher percentages.
3. **In the 2024 elections, women MPs were elected from 14 parties**, with the BJP leading with 31 MPs, followed by Congress with 13, and TMC with 11.
4. **Of the 74 women MPs elected, 43 are first-time MPs**, and the average age is 50 years. **Around 10% of candidates in the 2024 elections** were women, marking an increase from previous years.
5. **Compared to other countries like Rwanda and Cuba**, India's representation of women in legislatures remains relatively low.

Reasons for low women representations:

1. **Gender conditioning:** Women may lack political ambition due to factors like less encouragement to run for office, self-doubt about qualifications, reluctance towards competition, fear of 'big politics', and family considerations.
2. **Patriarchal society:** Gender disparities, sexual division of labour, cultural and social expectations, and illiteracy hinder women's participation in politics.
3. **Gatekeepers:** Party leaders may show bias in promoting male candidates over female candidates, affecting the selection process and hindering women's chances of election.
4. **Lack of political education, growth in criminalization**, and corruption further contribute to the underrepresentation of women in politics.
5. **Structural Disadvantages:** Election campaigns are expensive, time-consuming, and fraught with issues like inappropriate commenting, hate speeches, abusive threats, and use of muscle power, which disproportionately affect women candidates.

Benefits of High Representation of Women in Legislature:

1. **Focus on gender issues:** Stronger attention to women's concerns and implementation of women-sensitive policies.
2. **Gender equality:** Essential for genuine democracy and ensuring women's interests are on government agendas.
3. **Accountability:** Direct engagement leads to better representation and accountability for women.
4. **Gender-sensitive governance:** Promotes reforms for gender equality in public policy.
5. **Encourage inclusive initiatives:** Supports programs and subsidies to enhance women's decision-making.
6. **Change stereotypes:** Collaboration with media to portray women as effective politicians, challenging stereotypes.

Steps Taken for Increasing Women's Political Representation:

1. **Nari Shakti Vandan Adhiniyam, 2023:** Amends the Constitution to reserve one-third of seats in Lok Sabha and State Legislative Assemblies for women.
2. **Constitutional Amendments:** The [73rd and 74th Amendments](#) reserve one-third of seats in Panchayats and Municipalities for women.
3. **SDG Target 5.5:** India pledged to achieve women's full and effective participation at all levels of decision-making in politics and public life.
4. **Constitutional Measures:** [Articles 14, 15, 46, and 243D](#) ensure equality, protection against social injustice, and reservation of seats for women in Panchayati Raj Institutions.
5. **Legislative Initiatives:** Establishment of the Parliamentary Committee on Empowerment of Women and gender-neutral rules in the Lok Sabha.
6. **International Commitments:** Agreements such as the [Convention on the Elimination of All Forms of Discrimination against Women](#) and the [Beijing Platform for Action](#) emphasize enhancing women's political representation globally.

Suggestions for Enhancing Women's Representation in Legislatures:

1. **Implement Quotas:** Establish clear, well-structured regulations with effective enforcement mechanisms to increase female representation. Quotas can significantly boost women's presence in parliament.
2. **Combat Violence:** Address psychological and physical violence against women in politics by establishing cross-party working groups, developing policies to combat sexism and harassment, and creating a fair complaints system.
3. **Mentorship Programs:** Provide mentorship opportunities for women politicians to connect with experienced counterparts, enabling them to gain valuable insights and leadership skills.
4. **Media Participation:** Increase women's participation in media by educating journalists, addressing bias, and monitoring press coverage to promote fair representation of women in politics.
5. **Women's Caucuses:** Support women's parliamentary caucuses to foster gender equality legislation and policy agendas, amplifying women's voices and influence in parliament.

Ever wondered?

How do women fare in politics globally?

- **Nepal, Bangladesh and Pakistan have opted for the legislative route**
- **Pakistan: 17% seats are reserved for women in its national assembly**
- **Bangladesh has reserved 50 out of 350 seats in its Jatiya Sangsad**
- **Nepal has reserved 33% of the total seats for women.**
- **In Australia, Canada, South Africa, Sweden, political parties are required to give a certain percentage of tickets to women candidates.**

Insta Links:

- [Women in the Indian political system](#)

Topics: Structure, organization and functioning of the Executive and the Judiciary; Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.

9. ALTERNATE DISPUTE REDRESSAL SYSTEM (ADR): ARBITRATION GUIDELINES

Context:

The **Department of Expenditure under the Ministry of Finance** released guidelines for **using arbitration and mediation in domestic public procurement contracts.**

Details on the Guidelines:

Aim:

Guidelines aim to **streamline the dispute resolution process** for domestic procurement by government entities and address unique challenges in arbitration.

Key Points:

1. **Avoid the automatic inclusion** of arbitration in large contracts.
2. **Restrict arbitration** to disputes **below Rs 10 crores.**
3. **Prefer institutional arbitration** when used.
4. **Adopt mediation** under the **Mediation Act, 2023**, for high-value matters.

What is Arbitration?

Arbitration is a **quasi-judicial method of resolving disputes outside the courts**, where the parties to a conflict agree to submit their issues to an **impartial third party (the arbitrator)** who makes a decision that is **binding**. It is often chosen for its faster resolution process, confidentiality, and the ability to select an expert in the relevant field.

- It is a type of **Alternate Dispute Resolution (ADR)**,

governed by the **Arbitration and Conciliation Act, 1996 (amended in 2021).**

What is ADR?

Alternate dispute resolution (ADR) refers to the means by which disputes are settled outside the traditional court system. In India, modes of ADR include arbitration, negotiation, mediation, and Lok Adalats.

What is Mediation?

It is an **alternative dispute resolution (ADR) method** in which a **neutral third party**, known as a mediator, helps parties in a dispute reach a mutually agreeable resolution. Mediation is considered a more **cost-effective, efficient, and less adversarial method** compared to traditional court litigation.

Why has the government shifted its policy against Arbitration?

1. **Government's Distrust in Arbitrators:** The government perceives that **arbitrators often lack integrity and col-lude** with private parties, resulting in unfavourable awards that are hard to challenge.
2. **The disadvantage of Transferable jobs:** Government officials' transferable jobs may limit their deep knowledge, putting them at a disadvantage against private parties in arbitration.
3. **Issue of Informal nature:** The informal, binding nature of arbitration can lead to errors and misapplication of the law. Many arbitration decisions are challenged in high courts, failing to ease the courts' burden.
4. **Decision-Making Ability of Officials:** Government officials, facing multiple layers of accountability and scrutiny, are unlikely to agree to any decision which might be unpopular with the government.
5. **Vivad se Vishwas – II Scheme:** The 2023 scheme shows the government's preference for settlements (rather than arbitration), often proposing significant discounts on arbitral awards.

Potential Implications of the Guidelines:

1. **Deter Foreign Investors:** Restrictions on arbitration, especially for high-value disputes, may deter foreign investment.
2. **Ease of Doing Business:** Complicates business operations; India ranked low in 'Enforcing Contracts' (163rd in 2019, World Bank).
3. **Arbitration Hub Vision:** Challenges India's ambition to be an international arbitration hub.
4. **Diminished Investor Confidence:** Unpredictable legal frameworks may erode investor confidence.
5. **Infrastructure Development:** Shift to court adjudication could delay projects and increase costs.
6. **Contractual Uncertainty:** Removing arbitration clauses introduces uncertainty in business contracts.
7. **Potential for Corruption:** Settlement negotiations may increase corruption due to a lack of transparency.

8. **Stifling Innovation:** A slow dispute resolution system can hinder startups and innovation.
9. **Overburdening Courts:** The overburdened Indian courts are ill-equipped for complex commercial disputes, leading to prolonged litigation despite efforts to expedite processes.

Other challenges with India’s ADR mechanism are:

Challenges	Description
Lack of Government Support	Uneven growth and limited support for ADR in different regions.
	Lack of funding for ADR centres , especially in smaller cities.
	Need for greater government backing to promote ADR mechanisms.
Insufficient Infrastructure	An inadequate number of ADR centres even after 27 years of the Arbitration and Conciliation Act, 1996.
	Lack of funding hampers the establishment of ADR facilities in small towns.
	Accessibility issues due to the concentration of ADR centres in cities.
Court Interference	Frequent interference of courts in arbitral and ADR proceedings.
	Over-interference affects the autonomy of ADR mechanisms.
	Hindrance to the flexibility and freedom of parties in ADR.
Execution Process	Parties often need to approach courts for execution after ADR awards.
	Counteracts the goal of a streamlined dispute resolution process.
Lack of Skilled Professionals	Limited availability of skilled arbitrators, negotiators, and mediators.
	Lack of specialized institutions for training in ADR skills.
	Unskilled professionals can lead to unsuccessful ADR outcomes.
Limited Remedies and Appeal	Narrow scope for appeal after the ADR award, offering few remedies.
	Parties may feel restricted in pursuing justice through ADR.
Lack of Awareness	Widespread lack of awareness about ADR mechanisms in society.
Potential for Coercion	In cases where one party is more influential, there’s a risk of coercion.
Inability to Reach Mutual Agreement	- Despite efforts by negotiators/mediators/arbitrators, parties may be unwilling to agree.

What should be done to improve Arbitration?

1. **Reconsideration of Policy:** The government should rethink excluding arbitration clauses and instead enhance the arbitration framework.
2. **Strengthening Arbitration:** Improving the arbitration process, including timely arbitrator appointments and award enforcement, can enhance its effectiveness.

Measures to Promote ADR:

1. **Strengthening Legal Frameworks:** Ensure laws support ADR, making mediated agreements enforceable and integrating ADR into the judicial system.
2. **Enhancing Awareness and Education:** Conduct awareness campaigns and educational programs about ADR benefits and processes.
3. **Improving Training and Certification:** Develop comprehensive training for mediators/arbitrators, establish certification processes, and integrate ADR training into education curriculums.
4. **Role of Technology:** Utilize AI, big data, Machine Learning, and blockchain in legal processes, especially for blockchain-driven arbitration processes for smart contracts.
5. **Government’s Shift to Mediation:** Establish ADR centres, particularly mediation centres, within government departments to resolve disputes. For example, the Maharashtra Mediation and Conciliation Centre in India resolves disputes involving government departments.

Insta Links:

- [Reforming arbitration law](#)
- [Bills & Acts – Arbitration Laws in India](#)
- [Mediation Act, 2023](#)

Mains Links:

Q. What are the major changes brought in the Arbitration and Conciliation Act, 1996 through the recent Ordinance promulgated by the President? How far will it improve India’s dispute resolution mechanism? Discuss. (UPSC 2015)

Prelims Link:

Q. With reference to Lok Adalats, which of the following statements is correct? (UPSC 2010)

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

Ans: D

Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.

10. NHRC NOTICE TO ODISHA GOVT ON CUSTODIAL DEATH

Context:

The National Human Rights Commission (NHRC) has issued a **notice to the Odisha government, demanding an explanation for not paying the recommended** compensation to the family of a person who died in custody.

About Custodial Death:

Custodial death, often a **result of custodial violence including torture and rape**, is a significant concern in India. Between **2017 and 2022, over 660 custodial deaths** were reported, with Gujarat recording the highest number at 80, followed by Maharashtra.

Safeguards against custodial violence:

1. **Article 14** ensures the right to equality before the law
2. **Article 21** guarantees the right to life
3. **Sections 330 and 331 of the IPC prescribe** punishments for injuries inflicted to extort confessions during custody
4. **Section 176 of the Cr. P.C. mandates** a magisterial inquiry in cases of custodial death.
5. **Sections 120 and 127 of the Bhartiya Nyaya Sanhita**, offer additional protections for the accused
6. **NHRC's 1993 guidelines**, which require reporting custodial deaths or rapes within 24 hours
7. **Supreme Court's directives in the DK Basu case**, outlining procedures for detainee protection and arrest protocols.

About NHRC:

The National Human Rights Commission (NHRC) is a **statutory body** established in India to safeguard and promote human rights in the country. It was established under the **Protection of Human Rights Act, 1993**, with a mandate to address human rights violations, provide remedies to victims, and create awareness about human rights principles among the public.

The mandate of the National Human Rights Commission (NHRC):

Mandate of NHRC	Description
Investigate Human Rights Violations	The NHRC is responsible for investigating and inquiring into complaints of human rights violations, covering civil, political, economic, social, and cultural rights.
Recommend Remedial Measures	After investigation, the NHRC has the authority to recommend remedial measures to the concerned authorities for the protection and promotion of human rights. This includes suggestions for compensation, rehabilitation, and legal action against the perpetrators.
Spread Awareness and Education	The NHRC is tasked with spreading awareness about human rights, promoting human rights education, and conducting research on various issues related to human rights in India.
Monitor State and Central Government Actions	The NHRC monitors the actions of both state and central government authorities to ensure compliance with human rights standards and principles.
Provide Assistance and Advice	The NHRC provides assistance and advice to individuals, groups, and organizations on human rights issues, offering guidance and support in addressing violations or concerns.
Promote Human Rights Culture	The NHRC aims to promote a culture of human rights by organizing seminars, workshops, and campaigns on various human rights issues. It collaborates with civil society organizations, academia, and other stakeholders to create awareness and advocacy for human rights.
Cooperation with International Bodies	The NHRC collaborates with international organizations, including the United Nations and its agencies, to exchange information, expertise, and best practices in the field of human rights. This fosters cooperation on a global scale to address and advance human rights concerns.

Evaluation of its success in achieving its objectives:

Positives:

- **Investigation of Human Rights Violations:** The NHRC has been successful in investigating numerous cases of human rights violations in India.
 - As of September 2021, the **NHRC had registered over 17,000 cases** and completed inquiries in more than 13,000 cases.

- **Recommendations for Remedial Measures:** The NHRC's recommendations have led to positive changes and accountability in some cases.
 - One notable example is the **NHRC's intervention in the encounter killings in Manipur**, where it recommended the registration of FIRs, compensation to the victims' families, and disciplinary action against the involved security personnel.
- **Awareness and Education:** The NHRC has played a crucial role in spreading awareness about human rights through its campaigns, workshops, and publications.
 - As of 2020, the NHRC had organized **more than 5,000 human rights awareness** programs across the country.
- **Monitoring of Prisons and Jails:** The NHRC has the authority to visit and inspect prisons, jails, and detention centres to ensure the protection of the human rights of inmates.
 - **It conducts regular inspections and takes appropriate** actions to address issues such as overcrowding, torture, and other forms of ill-treatment.
- **International Engagement:** The NHRC actively participates in international human rights forums and collaborates with international organizations. It engages in dialogue with various countries and shares best practices in the promotion and protection of human rights.

Negatives:

- **Implementation and Enforcement:** Despite its recommendations, the implementation of NHRC's directives by the concerned authorities has been a challenge. In some cases, the authorities have **failed to take adequate action, leading to a lack of accountability and justice.**
- **Limited Jurisdiction:** It does not have jurisdiction over human rights violations by non-state actors, such as private companies. NHRC is also limited by temporal jurisdiction of **cases violation limited to the past 1 year.**
- **Delayed Justice:** For instance, the NHRC's recommendations in cases of extrajudicial killings and custodial deaths have not always led to prompt action and redress for the victims and their families.
- **Limited Resources and Staffing:** The NHRC has often faced resource constraints, including limited budgetary allocations and understaffing. This hampers its ability to effectively handle a large number of complaints and conduct comprehensive investigations in a timely manner.

Conclusion: The National Human Rights Commission (NHRC) plays a **crucial role in promoting and protecting human rights** in India. The Supreme Court has emphasized the need to provide the NHRC with greater autonomy, independence, and financial resources to enhance its effectiveness in addressing human rights issues.

Insta Links:

- [National Human Rights Commission](#)

Prelims Links:

Q. Other than the Fundamental Rights, which of the following parts of the Constitution of India reflect/reflects the principles and provisions of the Universal Declaration of Human Rights (1948)? (UPSC 2020)

1. Preamble
2. Directive Principles of State Policy
3. Fundamental Duties

Select the correct answer using the code given below:

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

Ans: D

Q. Consider the following: (UPSC 2011)

1. Right to education
2. Right to equal access to public service
3. Right to food.

Which of the above is/are Human Right/Human Rights under "Universal Declaration of Human Rights"?

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

Ans: D

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

11. DISPARITIES IN EDUCATION OUTCOMES IN INDIA

Context:

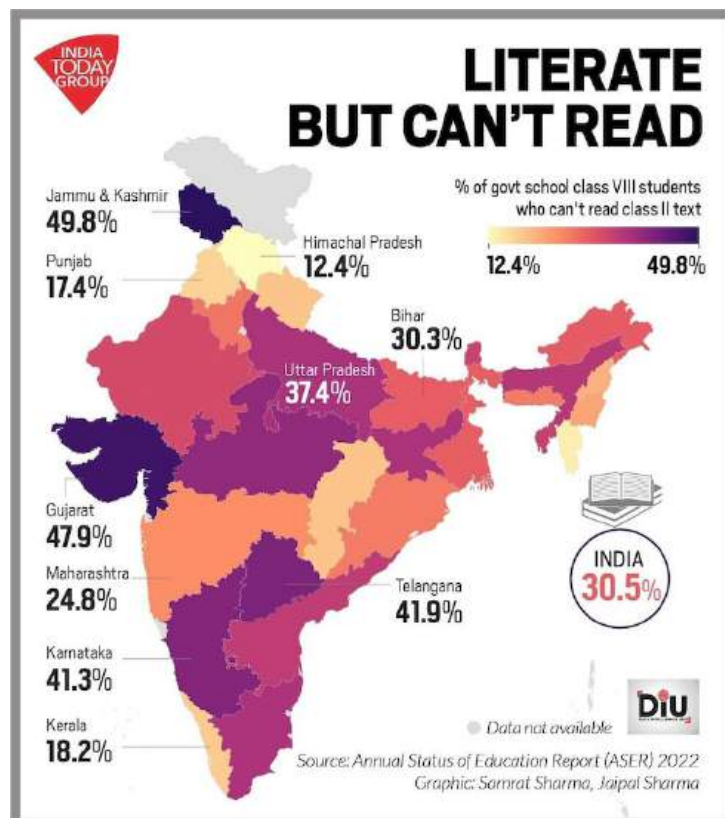
National Achievement Survey (NAS) 2021 highlights the **disparities in educational outcomes** among Indian states, advocating for improved teaching methods and targeted interventions to enhance learning outcomes for all students.

What is NAS 2021?

NAS 2021 is a **nationwide assessment conducted** (by the Ministry of Education) **to gauge** the academic performance of students across India.

Findings:

- Performance Decline:** NAS 2021 shows a significant decline in student performance compared to NAS 2017. Class 10 scores fell by **13.4% in Mathematics, 18.6% in Science, and 9.1% in Social Science**.
- Disparities Across States:** Some states like Punjab, Rajasthan, and Haryana perform well, while Meghalaya, Mizoram, Nagaland, and Chhattisgarh lag behind in educational outcomes.
- Performance Drop with Progression:** Scores decline as students progress from Class 3 to Class 10. Language scores fell from **64.6%** in Class 3 to 52% in Class 10, and Mathematics scores dropped from **61.2%** in Class 3 to 44% in Class 10.
- According to UNESCO,** India has the **highest number of children out of school globally**, with an estimated 17 million children between the ages of 6-14 still out of school.



Reasons for the decline:

- Inequality:** Marginalized groups like **Dalits and tribal communities** face discrimination and lack opportunities compared to privileged students.
 - A study by NCERT** shows these students often experience abuse and mistreatment in schools.
- Shift in Assessment Style:** The transition from **rote learning to competency-based assessments** poses challenges for students accustomed to traditional methods.
- Impact of COVID-19 Pandemic:** Disruptions caused by the pandemic, including school closures and remote learning, have significantly contributed to learning setbacks.
- Inadequate Foundational Learning:** Weak foundational skills in early grades result in difficulties that accumulate as students advance.
- Insufficient Reinforcement of Concepts:** Lack of regular revisiting and reinforcement of core concepts, as per Bruner's Spiral Curriculum Theory, leads to knowledge gaps as students progress.

Other Issues with Education in India:

Issues	Description
Education Sector Crisis	Reckless commercialization and politicization have led to a crisis in the education sector, lacking a coherent strategy and focusing on quick-fix solutions like technology.
Limits of Edutech	Despite the hype around technology in education, start-ups like Byju's have failed to deliver, highlighting the need for quality teachers' over-reliance on technology .
Preference for Tuition Centers	Parents increasingly favour tuition centres over regular schools, contributing to mental health issues among students and furthering the educational divide.
Quality Variance in Schools	Disparities between public and private schools persist due to poorly trained teachers in government schools, neglecting efforts for quality improvement.
Widening Educational Divide	The gap between rich and poor students widens within a failing education system, underscoring the need for innovative teaching methods and greater societal involvement.
Lack of Societal Involvement	Education should be a societal concern, but there is a lack of community engagement and volunteerism , hindering efforts for meaningful change in the education sector.
Insufficient Education Spending	India's education spending remains low , stagnating at 2.61% of GDP, far below the recommended 6% by the Education 2030 Framework for Action
Political Leadership and Fiscal Imagination	There is a lack of political commitment and imagination in allocating sufficient funds for education, hindering India's potential for global leadership in the sector.
Inadequate Infrastructure in Schools	Many schools lack basic infrastructure like internet facilities , computers, furniture, electricity, ramps for the disabled, and proper WASH facilities, impacting the learning environment.
High Dropout Rate	NFHS-5: 21.4% of girls, and 35.7% of boys dropped out due to lack of interest in studies.

Legal and Constitutional Safeguards:

- Legal provisions** include **Sarva Shiksha Abhiyan (SSA) under the Right to Education Act** for primary education, **Rashtriya Madhyamik Shiksha Abhiyan** for secondary education, and **Rashtriya Uchhattar Shiksha Abhiyan (RUSA)** for higher education, now part of Samagra Shiksha Abhiyan.
- Constitutional provisions** include **Article 45** ensuring free and compulsory education up to 14 years, later amended to include early childhood care and education, and the 86th Constitutional Amendment Act of 2002 introducing **Article 21A**, making elementary education a fundamental right.

Suggestions for Improvement:

- Experiential Learning Approach:** Introduce problem-solving subjects for hands-on learning, and utilize Artificial Intelligence for experiential learning.
- Implementation of National Education Policy (NEP):** Shift to a 5+3+3+4 system, ensuring uniformity across states.
- Education-Employment Corridor:** Integrate vocational learning, and provide mentorship in government schools, especially in rural areas.
- Reducing the Language Barrier:** Give equal importance to Indian languages, and establish special agencies for translation.
- Taking a Note From Past to Future:** Learn from the ancient 'Gurukul' system, emphasize holistic development and values education, and adopt practical assessment methods.

Mains Link:

Q1. How have digital initiatives in India contributed to the functioning of the education system in the country? Elaborate on your answer. (UPSC 2020)

Q2. Discuss the main objectives of Population Education and point out the measures to achieve them in India in detail. (USPC 2021)

Prelims Link:

Q. Which of the following provisions of the Constitution does India have a bearing on Education? (UPSC 2012)

1. Directive Principles of State Policy
2. Rural and Urban Local Bodies
3. Fifth Schedule
4. Sixth Schedule
5. Seventh Schedule

Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 3, 4 and 5 only
- (c) 1, 2 and 5 only
- (d) 1, 2, 3, 4 and 5

Ans- (d)

12. ISSUES WITH THE NATIONAL EDUCATION POLICY (NEP)

Context:

The implementation of the National Education Policy (NEP) in India has faced significant challenges and criticism, highlighting several areas of failure.

What is National Education Policy (NEP) 2020?

National Education Policy was introduced in India (based on the recommendations of **Kasturirangan and T.S.R. Subramanian** committees), aiming to **reform the education system from pre-primary to higher education levels**. It focuses on **universalizing education, adopting a flexible curriculum, promoting multilingualism**, and integrating vocational education.

Major Features of NEP 2020:

1. **Universalization of education by 2030** through a 100% Gross Enrollment Ratio (GER) from pre-primary to secondary.
2. **Open schooling system for out-of-school children**, without admission requirements like NIOS.
3. **Adoption of a 5+3+3+4 curriculum system**, replacing the existing 10+2 system.
4. **Teaching in mother tongue** up to class 5 without imposition of any language.
5. **Broad-based, multi-disciplinary, holistic undergraduate education** with a flexible curriculum, integration of vocational education, and multiple entries and exit points with respective degrees, including undergraduate programs in regional languages.
6. **Establishment of an Academic Bank of Credits** to enable credit transfers between institutions.
7. **Introduction of HECI (Higher Education Commission of India)** as an umbrella regulator, except for legal and medical education.
8. **Promotion of multilingualism** in schools and colleges.
9. Setting up of a new **National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development)**
10. A separate **Gender Inclusion fund** and **Special Education Zones** for disadvantaged regions and groups

Significance of NEP 2020:

1. **Inclusive Education for All:** NEP 2020 prioritizes inclusive education, accommodating diverse learner needs through early identification and intervention, with proposed Special Education Zones (SEZs) for students with disabilities.
2. **Reducing Disparities:** Emphasis on equitable access to quality education, with initiatives like Samagra Shiksha Abhiyan targeting underprivileged areas for infrastructure expansion.
3. **Multilingualism and Cultural Inclusion:** Promotion of multilingualism and indigenous language preservation to foster cultural diversity and inclusivity.
4. **Gender Equity:** Measures to promote girls' enrollment and retention, including gender-sensitive curriculum devel-

opment and establishment of women’s hostels.

- Vocational Education and Skill Development:** Integration of vocational courses to provide practical skills for employment, benefiting students with diverse academic interests or limited access to traditional pathways.

Issues with the NEP:

- Reduction in Syllabus Content:** Truncation of syllabi limits comprehensive understanding, as seen in the case of Walt Whitman’s poem “Passage to India,” now taught with only 68 lines instead of 255.
- Dilution of Core Subjects:** Some institutions, like St Xavier’s University, Kolkata, focus on one major core subject per semester in programs like Economics Honours, potentially leading to insufficient knowledge in core fields.
- Administrative Overload:** NEP mandates numerous exams and continuous assessments per semester, increasing bureaucratic burdens for students and educators.
- Pedagogical Change:** Implementation challenges in introducing multi-language learning, foundational skills development, and value-based education, requiring thorough reexamination and adaptation of teaching methods.
- Assessment Rethinking:** Need for reevaluation of school leaving exams, development of appropriate learning rubrics, and reforming school textbooks to align with the new educational paradigm.
- Educator Training:** Essential to training teachers and educational staff to deliver child-centred, engaging learning experiences and foster joyful learning environments.
- Removing Barriers for Teachers:** Addressing personal and professional barriers faced by teachers, especially in remote and inaccessible areas, to ensure the successful implementation of NEP.
- Funding and Pay Scale:** Challenges in meeting the demand for qualified teachers and improving their pay scale to facilitate conceptual and experimental teaching methods.
- Funding Constraints:** Challenges in fully implementing NEP proposals due to limited resources, necessitating increased scholarships and private sector involvement without clear strategies outlined in the policy.
- Digital Connectivity:** Addressing the digital divide by ensuring internet access in remote areas, implementing digital classrooms, and providing training in AR/VR technologies to enhance learning experiences.

Major Initiatives under NEP 2020:

Initiative	Description
PM Schools for Rising India (SHRI)	A scheme aiming to provide high-quality, equitable, and joyful education in schools. Launched in September 2022 for the development of over 14,500 schools nationwide.
NIPUN Bharat	A mission focused on ensuring universal foundational literacy and numeracy by the end of Grade 3 by 2026-27.
PM e-VIDYA	Initiative promoting online education and digital learning through platforms like DIKSHA and offering e-books and content to students.
NCF FS and Jai Pitarā	Introduction of National Curriculum Framework for Foundational Stage (NCF FS) and Jai Pitarā for play-based learning for children aged 3 to 8 years.
NISHTHA	Capacity-building program for teachers and school principals in India.
NDEAR	National Digital Education Architecture blueprint for digital technology-based education applications.
Academic Frameworks	Introduction of the National Credit Framework (NCrF) and National Higher Education Qualification Framework (NHEQF) to facilitate credit transfer and academic flexibility.
Increased Investment	Advocacy for the Central and State Governments to allocate a combined 6% of GDP to education.
International Campuses	Support for Indian universities to establish campuses abroad and invite foreign institutions to operate in India.
Educational Innovation	Initiative allowing specialized courses by foreign universities and institutions in Gujarat’s GIFT City, focusing on financial services and technology.
World-Class Institutions	Scheme aiming to create affordable, top-notch academic and research facilities, designating “Institutions of Eminence” (IoEs).
GIAN and SPARC	GIAN taps into expertise to enhance academic resources, while SPARC fosters research collaborations between Indian and foreign institutions.

Conclusion:

“Education is the passport to the future, for tomorrow belongs to those who prepare for it today.” To improve NEP, we

should reassess its credit-based system, emphasizing core subjects for deeper knowledge. Cutting non-core courses can elevate academic standards. Stakeholder input is crucial for meaningful reforms in higher education.

Insta Links:

- [Schemes under Ministry of Education](#)

Mains Links:

Q. How have digital initiatives in India contributed to the functioning of the education system in the country? Elaborate on your answer. (UPSC 2020)

Q. Discuss the main objectives of Population Education and point out the measures to achieve them in India in detail. (USPC 2021)

Prelims Links:

Q. Which of the following provisions of the Constitution does India have a bearing on Education? (UPSC 2012)

1. Directive Principles of State Policy
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3. Fifth Schedule
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Select the correct answer using the codes given below:

- (a) 1 and 2 only
- (b) 3, 4 and 5 only
- (c) 1, 2 and 5 only
- (d) 1, 2, 3, 4 and 5

Ans - (d)

13. POST OFFICE ACT 2023 COMES INTO EFFECT

Context:

The **Post Office Act 2023**, effective today, replaces the **Indian Post Office Act, 1898**. It simplifies the legislative framework for citizen-centric services, banking, and government scheme benefits.

Major provisions of the Act:

Provision	Details
Flexibility	Grants the postal department flexibility in determining service prices to respond quickly to market demands.
Legal Framework	Establishes a strong legal framework for citizen-centric services in the post office, facilitating various initiatives.
Digital Code	Introduces the option to replace physical addresses with digital codes using geospatial coordinates to identify specific premises.
Privilege	Eliminates the provision of “exclusive privilege” previously granted by the central government.
Authority of DG	It broadens the authority of the Director General of Postal Services beyond mail services. It empowers them to regulate activities for additional services prescribed by the central government and set charges without requiring parliamentary approval.
Authority of Centre	Empowers the central government, through notification, to authorize any officer to intercept, open, or detain items during transmission by the Post Office for reasons related to state security, foreign relations, public order, emergency, or public safety.
Exemptions from liability	Post office will not incur any liability with regard to its services , except such liability as may be prescribed with regard to a service provided by the Post Office.
Removal of Offences and Penalties	The Act does not contain the punishment for theft, misappropriation or destruction of postal articles by an officer of the Post Office which was part of the original Act of 1898.

Issues with the New Act

- High Government Control:** The provision allowing the interception and opening of parcels by the government may enhance control but also raise potential issues of privacy and misuse.
- Loss of Exclusive Privileges:** The elimination of exclusive privileges for the central government in conveying letters and issuing postage stamps may impact traditional postal services.
- Liability Concerns:** Shifting liability from the central government to the Post Office for its services may raise questions about accountability and responsibility.
- Data Privacy and Security:** The expanded interception powers necessitate the establishment of robust data privacy and security measures to safeguard the personal information of postal service users.
- Differing Legislation for Couriers:** The absence of similar legislation for courier firms raises concerns about regulatory disparities.

Conclusion:

The introduction of the **new Post Office Act (2023) marks** a significant step in clarifying **vague definitions**, particularly regarding what constitutes a **'letter.'** The bill's emphasis on **digital addressing not only streamlines** sorting processes but also opens avenues for efficient mail and parcel delivery, including the possibility of drone deliveries. Overall, the changes reflect an **adaptation to evolving needs, prioritizing legality**, and enhancing security in the postal service landscape.

About Indian Post:

India Post (formed 1854; HQ: New Delhi) operates under the **Department of Post within the Ministry of Communications.** Initially, the post was established **in 1766 under the East India Company as "Company Mail,"** it was later transformed into a **Crown service in 1854 by Lord Dalhousie.** Under Dalhousie's reforms, **uniform postage rates** and the India Post Office Act of 1854 were introduced, marking significant advancements in the postal system, including the creation of **the Director General of Post** for the entire country. With **1, 55,531 Post Offices**, the DoP has the most widely distributed postal network in the world.

Ever Wondered?!

The Role of Post Offices in Financial Inclusion

<i>Post Office Schemes</i>	<i>Description</i>
<i>National Saving Recurring Deposit Account</i>	<i>Government-supervised savings system, requiring a minimum deposit of Rs. 10.</i>
<i>National Savings Time Deposit Account</i>	<i>Offers accounts with varying maturity dates (1, 2, 3, and 5 years) for individuals or groups of up to three persons.</i>
<i>Senior Citizen Savings Scheme Account</i>	<i>Fixed-income investment for individuals over 60, ensuring a steady flow of income after retirement, with a 5-year lock-in term.</i>
<i>Public Provident Fund Account</i>	<i>Long-term investment plan with a 15-year lock-in period, offering a mix of security, earnings, and tax savings.</i>
<i>National Savings Certificates (NSC)</i>	<i>Government savings bonds for smaller savings and tax-saving investments, with a 5-year maturity period.</i>
<i>Kisan Vikas Patra Account</i>	<i>Modest savings instrument encouraging long-term savings, doubling the principal in 9 years and 4 months.</i>
<i>Sukanya Samridhi Account</i>	<i>Government-sponsored savings program aimed at securing a prosperous future for girls in India, particularly for education and marriage.</i>

Insta Links:

- [New Post Office Bill, 2023](#)

Prelims Link:

Q. 'Right to Privacy' is protected under which Article of the Constitution of India? (UPSC 2021/2024)

- (a) Article 15
- (b) Article 19
- (c) Article 21
- (d) Article 29

Ans: (c)

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

14. PM AWAS YOJANA: TRANSFORMING HOUSING WITH RS 4 TRILLION EXPANSION

Context:

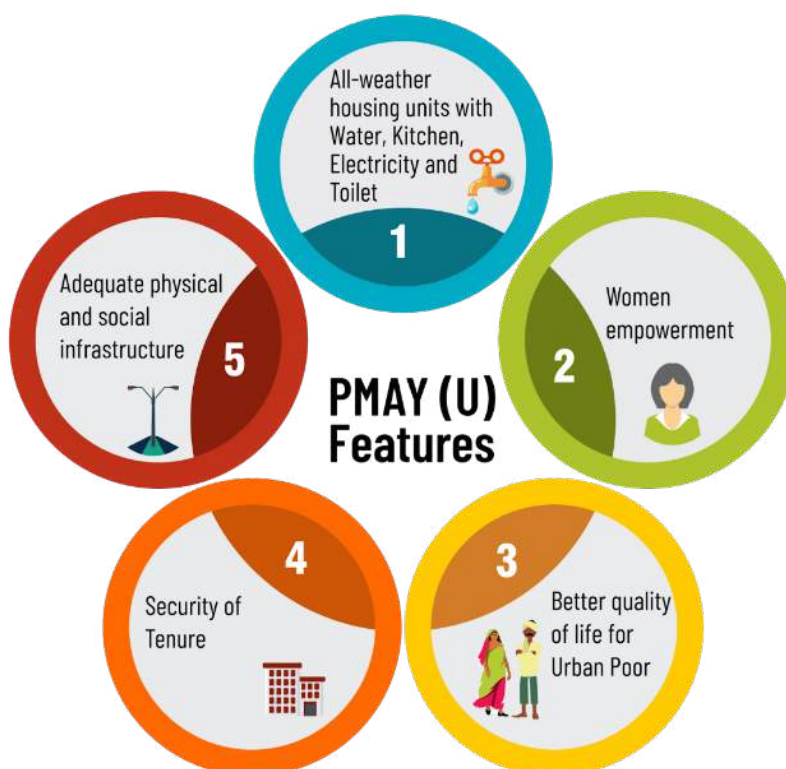
The Union Cabinet has approved the construction of **20 million more houses under PMAY-Gramin and 10 million under PMAY-Urban**.

What is PM Awas Yojana?

It is a **housing scheme launched by the government of India** to provide affordable housing for all by 2024. The scheme has two variants, **PMAY –Rural and PMAY – Urban**

About PMAY:

	PMAY-Urban	PMAY-Rural
Nodal Ministry	Launched in 2015 by Ministry of Housing and Urban Affairs	Launched in 2016 by Ministry of Rural Development
Type	Both Centrally Sponsored and Central Sector Scheme	Centrally Sponsored
Beneficiaries	EWS (economically weaker section) : up to 3 lakh incomes; LIG (Lower income group) : 3-6 lakh income MIG (Middle income group) : 6-12 lakh income EWS is eligible for Assistance in all four verticals of Mission; LIG/MIG is eligible under only the CLSS component (Central Sector Scheme)	Identified through Socio-Economic and Caste Census (SECC), 2011
Four Verticals	<ol style="list-style-type: none"> In-situ Slum Redevelopment Credit Linked Subsidy Scheme (CLSS) Affordable Housing in Partnership Beneficiary-led Construction/Enhancement 	N/A
Current Status	Over 83 lakh houses completed as of 3rd June 2024 (of 2.95 crore houses sanctioned)	About 2.62 crore houses completed as of 11 June 2024



Significance of Pradhan Mantri Awas Yojana:

1. **Targets poor:** Targets urban poor including EWS, LIGs, and MIGs in Urban areas. PMAY-Gramin improves housing for rural poor.
2. **Wide Coverage:** PMAY-Urban covers all 4041 statutory towns from the Census 2011, focusing on 500 Class I cities.
3. **Financing through Subsidy:** 6.5% interest subsidy on housing loans for 15 years; **Rs 1.5 lakh** for eligible urban poor for construction or renovation.
4. **Affordable Housing Partnership:** Rs **1.5 lakh** Central Assistance per EWS house; projects must have at least 35% EWS houses to qualify.
5. **Women Empowerment:** Promotes female ownership or joint ownership of houses.

Performance of PMAY-G:

1. **Completion Rate:** Only 55% of the target met.
2. **Construction:** Over **83 lakh houses completed** as of 3rd June 2024 (of **2.95 crore** houses sanctioned)
3. **Funding:** 85% of beneficiaries received sanctioned funds.
4. **Employment:** Generated employment, especially for migrant labourers during the lockdown.

Limitations of the scheme:

- **COVID pandemic:** the pandemic has slowed down the timely construction of houses and therefore government was forced to extend the deadline from **2022 to March 2024**.
 - In rural areas, Pradhan Mantri Awas Yojana has a completion rate of **67.72%**.
- **Poor implementation by state:** Six States account for 70% of the target units
 - **Bihar** has one of the lowest completion rates at **59%**.
- **Lack of clear land titles and documents:** In both rural and urban areas, issues such as a lack of clear titles and other land documents tend to crop up, further slowing down the pace of construction of houses.
- **Withholding of funds by the Centre:** Recently, the Centre withheld funds for the scheme in two Opposition-ruled States — **West Bengal** and **Chhattisgarh**.
- **Credit linked limit:** According to the PMAY Credit Linked guidelines the interest subsidy of **6.5%** will be given to the people who fall under backward classes or economically weaker groups.
 - However, the subsidy is not for all the people living in these groups.
- **Tenure limit:** As the yojana says the applicant will get a tenure of **15 years** to repay the loan. But the time will be granted only if the loan amount is 6 lakhs or less.
 - If the loan amount is more than **6 lakhs** then the tenure will be less than 15 years.

Ever wondered!?

What's India's history of affordable housing?

- **Post-independence India initially focused on rural housing due to its agrarian economy.**
- **The Housing and Urban Development Corporation (HUDCO) was established in 1970 to facilitate affordable housing.**
- **The National Housing Policy of 1988 aimed to address both rural and urban housing challenges, recognizing the growing urban population and housing demands.**

For Sustainability Concerns with the housing (under PMAY): [Click Here](#)

Government Initiatives under PMAY-U:

1. **Affordable Rental Housing Complexes (ARHCs):** Provide affordable rental housing for urban migrants/poor near their workplaces.
2. **Global Housing Technology Challenge (GHTC):** Mainstreams innovative, sustainable, eco-friendly, and disaster-resilient construction technologies.
 - a. **Light House Projects (LHPs):** Part of GHTC, aimed at reducing construction time and building resilient, affordable houses.
3. **CLSS Awas Portal (CLAP):** Integrates all stakeholders in real-time to process applications and track subsidy status.
4. **Mivan Construction Technology:** Uses advanced aluminium formwork for faster and environmentally friendly construction.
5. **Insulating Concrete Formwork (ICF) Technique:** Utilizes polystyrene panels filled with concrete for strong, durable, and well-insulated structures.
6. **Hybrid Concrete Construction:** Combines cast-in-place concrete with precast materials, accelerating construction and reducing costs.

Conclusion

The government has done a commendable job by **converging the Pradhan Mantri Awas Yojana with other schemes that provide electricity, toilets and LPG gas connections**. The implementation of PMAY has remained largely transparent and the progress has been satisfactory. However, the government should address the major issues with the PM Awas Yojana.

Insta Links:

- [Pradhan Mantri Awas Yojana- Gramin \(PMAY-G\)](#)

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

15. ANTENATAL HEALTHCARE

Researchers have recommended that **oral glucose tolerance test (OGTT)** used to determine if a **pregnant woman** has developed gestational diabetes **should be replaced by an HbA1c test** that can also be used at the point of care.

About Antenatal / Prenatal healthcare:

Antenatal healthcare refers to the medical and **healthcare services provided to a pregnant woman** throughout her pregnancy. The primary goals of antenatal care are to **ensure the health and well-being of both the mother and the developing foetus.**

Key components of antenatal healthcare:

1. Regular Check-ups and Screening tests
2. Nutritional Guidance
3. Health Education
4. Management of Pregnancy Symptoms
5. Monitoring for Complications like gestational diabetes
6. Emotional Support

Government initiatives for pregnant women:

1. **Janani Suraksha Yojana (JSY)**, a demand promotion and conditional **cash transfer** scheme for promoting institutional delivery.
2. **Janani Shishu Suraksha Karyakaram (JSSK)** entitles every pregnant woman to **free delivery**, including for c-section, in public health institutions along with the provision of free transport, diagnostics, medicines, other consumables, diet and blood.
3. **Over 25,000 'Delivery Points'** across the country have been strengthened in terms of infrastructure, equipment, and trained manpower for provision of comprehensive **Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition (RMNCAH+N) services.**
4. **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provides pregnant women a fixed day, free of cost assured and quality **Antenatal Care** on the 9th day of every month.
5. **LaQshya (Labour room Quality improvement Initiative)** to improve the quality of care in Labour room and Maternity operation theatres to ensure that pregnant women receive respectful and quality care during delivery and immediate post-partum.

Challenges with maternal Healthcare in India:

1. **Maternal mortality rate:** A **United Nations report** highlighted that India was among the top 10 countries responsible for 60% of global maternal deaths, stillbirths, and new-born deaths. In **2020, India accounted for over 17% of such deaths**, making it the second-highest contributor after Nigeria.
2. **Antenatal care (ANC): Only 34.1% of mothers attended one, two, or three visits**, falling short of the World Health Organisation's (WHO) recommendation of four visits.
3. **Postnatal care: 16% of women** in India did **not receive any postnatal health check-ups**, while 22.8% experienced delayed check-ups occurring two days after childbirth.
4. **Lack of skilled health providers:** 8% of Indian women did not receive tetanus shots, which are crucial for preventing infections during and after surgery. **In about 11% of cases, no skilled health providers were present at the time of delivery**, posing risks in detecting and managing complications.

16. NET-NEET CRISIS: THE REASONS BEHIND INDIA'S FAILING EXAM SYSTEM

Context:

The **NET (National Eligibility Test)** and **NEET (National Eligibility cum Entrance Test)** controversy highlights **systemic failures and poor policy implementation** over the years. Recurrent paper leaks, exam cancellations, incorrect results, and unexplained grace marks have **eroded trust in the National Testing Agency (NTA).**

What is NET?

NET (National Eligibility Test) is an exam conducted in India to determine the **eligibility of candidates for Junior Research**

Fellowship (JRF) and Assistant Professor positions in Indian universities and colleges. It is administered by the **National Testing Agency (NTA)** under the guidance of the **University Grants Commission (UGC)**.

What is the NET Controversy?

The NET controversy involves **allegations of paper leaks**, exam cancellation, and other irregularities that have compromised the integrity of the examination. These issues have led to widespread distrust among students and calls for reforms and stricter oversight to ensure fair and transparent conduct of the exam.

What is NEET?

NEET (National Eligibility cum Entrance Test) is an **entrance examination** in India for students who wish to **study undergraduate medical courses (MBBS) and dental courses (BDS)** in government or private medical and dental colleges.

Why was the NEET introduced?

- Standardising Competence:** NEET aims to standardize the educational competence of medical aspirants, ensuring a minimum standard in basic sciences like Chemistry, Physics, and Biology.
- Reducing Entrance Exams:** NEET consolidates around **46 different entrance exams** into a single, standardized test, simplifying the admission process and reducing stress and confusion for students.
- Eliminating Capitation Fees:** NEET seeks to eliminate capitation fees in private medical colleges by **basing admissions solely on merit, ensuring fair and transparent selection**, and making medical education accessible to deserving students regardless of financial background.

What is the NEET Controversy?

The NEET controversy involves **systemic issues such as frequent paper leaks, rank inflation, incorrect results, and unexplained grace marks**, leading to a loss of public trust in the National Testing Agency (NTA). These problems have highlighted **the need for policy reforms and better implementation** to ensure the integrity and fairness of the exam.

Other Issues with NEET

- Bias in the Education System:** NEET's syllabus aligns more with the CBSE curriculum, disadvantaging students from state boards. This creates an educational imbalance.
- Coaching Industry Growth:** To compete effectively, many state board students resort to extra coaching, fueling a Rs 58,000 crore coaching industry growing at 15% annually.
- Legal Hurdles:** NEET was **suspended by the Supreme Court in 2013** due to petitions from private colleges claiming it infringed on their autonomy. It was **restored in 2016 by a five-judge bench**.
- Impact on Tamil Nadu:** The introduction of NEET has significantly affected rural and Tamil-medium students in Tamil Nadu.

Tamil Nadu's Response to NEET

- Opposition to NEET:** Tamil Nadu prefers linking medical college admissions to high school performance rather than NEET scores.
- Expert Committee Findings:** In 2021, the Justice A K Rajan Committee found that Tamil-medium student admissions dropped from **15% to 1.6-3.2%** (2017-2021). Admissions of rural students to government medical colleges fell from 62% to 50%.
- Impact on Public Health System:** Tamil Nadu's public health system relies on rural students willing to work in primary health centres, unlike urban students who often pursue careers in corporate hospitals or abroad.
- Legislative Action:** The state government passed a law to scrap NEET, but it was blocked by the Governor.

Way forward:

Reform	Description
Improving School Education	Shift from rote learning to inquiry-based and critical thinking-oriented education. Regular updates to curricula to include the latest scientific and educational advancements.
Decentralising Examinations	Allow states and universities to conduct their own entrance exams tailored to local standards and curricula. Address disparities and dissatisfaction, especially among non-CBSE students. Encourage flexible and innovative examination formats .

Constituting Regional Boards	Create regional examination boards to standardize exams within specific geographic areas . Operate under a central body's guidance while adapting to local educational standards. Balance national standardization with local relevance.
Anti-paper leak law	The provisions of Public Examinations (Prevention of Unfair Means) Bill, 2024 must be strictly implemented.

Conclusion:

The current NET-NEET crisis **highlights a systemic failure in ensuring high-quality school** education in India. The above steps are essential to restore confidence and credibility in the examination system, ensuring fairness and integrity for all students.

Additional Information:

About NTA:

The [National Testing Agency \(NTA\)](#) is an autonomous organization registered under the **Indian Societies Registration Act of 1860**. It conducts entrance examinations for admission into higher educational institutions in India. NTA is chaired by an eminent educationist appointed by the **Ministry of Human Resource Development**, with the Chief Executive Officer (CEO) serving as the **Director-General appointed by the Government**. Its functions include identifying partner institutions for online examinations, creating a question bank, fostering research and development, collaborating internationally, and conducting examinations as assigned by Government Ministries/Departments.

Insta Links:

1. [NEET & Tamil Nadu's Protest](#)
2. [What is the Bill to scrap NEET in Tamil Nadu?](#)

17. PUBLIC EXAMINATIONS (PREVENTION OF UNFAIR MEANS) ACT 2024 NOTIFIED

Context:

The Union government has implemented the [Public Examinations \(Prevention of Unfair Means\) Bill, 2024](#), effective from June 21, to curb malpractices and organised cheating in government recruitment exams.

Need for the Bill:

The act is introduced against the **backdrop of widespread exam cancellations** (including the recent NEET and NET exams controversy) due to paper leaks in various competitive tests across states like Rajasthan, Haryana, Gujarat, and Bihar. **Over 1.5 crore students have been affected by paper leaks from 2016 to 2023**, with more than 70 cases reported during this period. Despite these incidents, **there is currently no specific law to address unfair practices** in public examinations conducted by the central government and its agencies.

Key Highlights of the [Public Examinations Act:](#)

Highlights	Description
Objective	Enhance transparency, fairness, and credibility in public exams.
	Reassure youth of fair rewards for sincere efforts.
	It will supplement the other initiatives government in this direction such as introducing self-attestation; shortening the examination cycle (from 18-22 months to 6-10 months), etc.
Applicability	Covers central recruitment and entrance exams conducted by UPSC, SSC, RRBs, IBPS, and NTA.
	All central ministries, departments, and recruitment offices are included.
Definition of Public examination	Section 2(k) of the Act defines a public examination as any exam conducted by a public examination authority listed in the Act's Schedule or designated by the Central Government through notification.
Exclusion of Students	Candidates are not targeted by the bill.
	Students are covered under existing administrative provisions of exam authorities.

Punishments	Prison terms of 3-5 years for paper leak involvement.
	Up to 10 years if linked to organised crime.
	A fine of Rs 1 crore; exam organising firms may be barred from conducting exams.
Unfair Means Defined	Section 3 lists 20 offences, including impersonation, tampering, Leakage of question papers or answer keys, Unauthorized access to question papers or Optical Mark Recognition (OMR) response sheets, Creating fake websites, etc.
Nature of Offences	Cognizable, non-bailable, and non-compoundable.
	Cognizable: Offenses for which police can make an arrest without a warrant
	Non-bailable: Offenses for which bail is not guaranteed and must be determined by a magistrate
	Non-compoundable: Offenses that cannot be settled out of court, requiring a trial to proceed regardless of any agreement between parties involved
Investigation	Led by officers of rank, not below Deputy Superintendent of Police or Assistant Commissioner of Police.
	States have the option to send a probe to a Central agency.
National Technical Committee	NTC was formed to enhance security in computerized exams.
	It will develop protocols for IT security and surveillance.
Model Draft for States	The act is binding for central authorities and; a model for states.

Concerns with the Bill:

- State Government Discretion:** The bill’s reliance on state governments to draft their own acts may lead to partisan interests, as seen in past model bills.
- Exploitable Loopholes:** Excluding students from criminal sanctions may allow paper leak gangs to pose as students to evade punishment.
- Lack of Committee Composition:** The absence of clarity on the composition and qualifications of the National Technical Committee on Public Exams raises concerns about potential partisanship.
- Subordinate Legislation Scope:** The bill’s allowance for subordinate legislation grants executive authorities extensive discretionary power in implementation.

Reasons for cheating in exams include a positive attitude towards cheating, societal pressures prioritizing marks over integrity in learning, frustration with delayed justice in the judicial system, and students’ overambition and pursuit of self-interest to gain unfair advantages.

Ethical issues related to cheating in exams include:

- Violation of academic integrity:** Cheating undermines the principles of honesty, fairness, and trustworthiness in academic settings, compromising the integrity of educational institutions.
- Unfair advantage:** Cheating gives dishonest individuals an unfair advantage over their peers who choose to abide by the rules, distorting competition and merit-based evaluations.
- Deception and dishonesty:** Cheating involves deception and dishonesty, as individuals misrepresent their knowledge, skills, or abilities to achieve undeserved academic outcomes.
- Lack of personal accountability:** Cheating reflects a lack of personal accountability and responsibility for one’s actions, as individuals prioritize short-term gains over long-term integrity and character development.
- Diminished learning and skill development:** Cheating inhibits genuine learning and skill development by promoting shortcuts and rote memorization instead of critical thinking, problem-solving, and mastery of academic content.
- Damage to reputation:** Cheating tarnishes the reputation of individuals and institutions involved, eroding trust and credibility within academic communities and beyond.
- Ethical erosion:** Engaging in cheating can lead to a **slippery slope of ethical erosion**, where individuals become desensitized to dishonest behaviour and compromise their ethical standards in other areas of life.

Conclusion:

The bipartisan support of the bill underscores the **seriousness of the issue and the government’s commitment** to ensuring transparency and fairness in examinations. The bill’s focus on **strict punishments for offenders and technological solutions** signifies a step towards protecting the integrity of examination systems.

Mains Links:

In India, why do you think there are so many instances of paper leaks for competitive exams and government posts? Elaborate on the moral hazards of the same.

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

18. COOPERATIVE SOCIETIES ARE NOT SUBJECT TO THE RTI ACT

Context:

The Madras High Court ruled that **cooperative societies are not subject to the RTI Act**. The court set aside a **Tamil Nadu Information Commission order** that had directed a cooperative society to **disclose loan details**.

Justice V. Bhavani Subbaroyan stated that **cooperative societies do not qualify as 'public authorities'** under **Section 2(h)** of the **RTI Act**. The court's decision aligns **with previous rulings, including a 2013 Supreme Court verdict**.

Positive Implications of the Judgement:

1. **Autonomy of Cooperative Societies:** Reinforces the independence of cooperative societies by not categorizing them as public authorities under the RTI Act.
2. **Legal Clarity:** Provides a clear legal interpretation that can guide similar cases in the future.
3. **Operational Efficiency:** Cooperative societies can operate without the administrative burden of complying with RTI requests, potentially increasing efficiency.

Negative Implications:

1. **Reduced Transparency:** Limits public access to information on cooperative societies, potentially reducing transparency and accountability.
2. **Potential for Misuse:** Without RTI oversight, there may be a higher risk of corruption or misuse of funds within cooperative societies.
3. **Public Distrust:** The decision might foster distrust among the public, particularly if cooperative societies are seen as non-transparent entities.

About RTI Act, 2005:

1. **Objective:** Ensures transparency and accountability by providing citizens access to information from public authorities.
2. **Constitutional Basis:** Rooted in the right to freedom of speech and expression (Article 19 of the Indian Constitution) [State of UP vs. Raj Narain Case (1975)].
3. **Key Provisions:** Time limits for information provi-

sion, proactive disclosure, appointment of Public Information Officers (PIOs), and establishment of Central and State Information Commissions.

Public Authorities (PAs) under the RTI Act, 2005:

1. **Definition:** Includes government bodies, state-controlled entities, and NGOs significantly funded by the government.
2. **Duties:** Maintain organized records, regularly disclose information, and designate PIOs for information dissemination.

Exemptions under Section 8:

1. Information affecting the **sovereignty, integrity, or security of India**.
2. Information **forbidden by courts** or constituting contempt of court.
3. Information **breaching Parliament's or State Legislature's privilege**.
4. **Commercial confidences, trade secrets**, and intellectual property (unless public interest requires disclosure).
5. **Personal information** invades privacy without public interest.

Cooperatives in India and issues faced by them:

Meaning: Co-operatives are voluntary, democratic, and autonomous organisations controlled by their members who actively participate in their policies and decision-making.

Efforts to promote them:

- **After independence**, the first five-year plan (1951-56) emphasised the adoption of co-operatives to cover various aspects of community development.
- **97th Amendment (2011):** It inserted Article 43B in the DPSP of the Indian Constitution inserted,
 - As per Article 43B. States shall endeavour to promote voluntary formation, autonomous functioning, democratic control and professional management of cooperative societies

Issues faced by the co-operatives:

- Inadequacies in governance
- **Politicisation and the excessive role of the government**
- Inability to ensure active membership
- Lack of efforts for capital formation
- **Inability to attract and retain competent professionals**
- Elections to co-operative boards have been postponed indefinitely

What are Multi-state Co-operative Societies?

- Regulated by the **Multi-State Co-operative Societies Act 2002**, these are societies that have operations in more than one state (like FPOs).

- **Part IXB (also inserted by the 97th amendment) of the Indian constitution** is applicable only to multi-state co-operative societies (as per an SC verdict), as states have the jurisdiction to legislate over state co-operative societies.

Read about The Multi-State Cooperative Societies (Amendment) Bill 2023: [Here](#)

Insta Links:

- [Bill to amend Multi-State Cooperative Societies Act introduced in LS](#)

19. FLAWS IN THE CRIMINAL JUSTICE SYSTEM

Context:

Recently, **a woman in Bareilly, Uttar Pradesh, falsely accused a man of rape**, leading to wrongful imprisonment. It highlights the loopholes in India’s Criminal Justice System. Also, the government recently extended the centrally sponsored scheme for **Fast Track Special Courts (FTSC) till 2026**.

Structure of the Criminal Justice System in India:

The Criminal Justice System in India ensures justice for victims and fair treatment for the accused . It operates based on the Indian Penal Code (IPC) and Criminal Procedure Code , soon to be replaced by Bharatiya Nyaya Sanhita and Bharatiya Nagarik Suraksha Sanhita .	
Three main pillars:	Police: Investigate crimes, apprehend suspects, and enforce laws.
	Judiciary: Interpret laws and deliver judgments, with the Supreme Court and High Courts at the top.
	Correction System: Manage prisons, focusing on punishment and rehabilitation.
Key Principles	<ul style="list-style-type: none"> • Presumption of innocence (the accused is considered innocent until proven guilty beyond a reasonable doubt) • The right to a fair trial (the accused has the right to a fair and public trial, including the right to defend themselves and present evidence) • Adherence to due process.

Major Challenges in India’s Criminal Justice System

1. **British Legacy:** The old laws were remnants of British colonial rule, designed to maintain their control over India’s justice system.
2. **Punitive Approach:** The focus of the laws was punishment rather than ensuring justice for citizens.
3. **Low Conviction Rates:** The laws contributed to low conviction rates and delayed justice, eroding public trust in the legal system.

4. **Pendency:** Over 5 crore pending cases (July 2023).
5. **Delays:** Delays violate the right to a speedy trial (N.S Sahni v. Union of India).
6. **Lack of Resources:** Only 21 judges per million population (Dec 2023); 35% lower judiciary posts and 400 High Court vacancies (May 2023).
7. **The politicization of Police:** Despite SC (Prakash Singh v. Union of India (2006)) warning Separation of duties was not implemented.
8. **Bail Issues:** Over 75% of the prison population are undertrial; prisons at 130% occupancy.
9. **Gender Bias:** Persistent biases, e.g., Karnataka HC judge’s comments on a rape victim.
10. **Prison Conditions and Mental Health:** Model Prison Manual 2016 mandates mental health services, however, there is a high rate of mental illness among prisoners.
11. **Maharashtra:** 42,577 prisoners but only one psychiatrist and two psychologists (2022).
12. **Non-Implementation of Police Complaints Authority:** Prakash Singh (2006) mandated Police Complaints Authorities (PCAs).
13. **Human Rights Violations:** 175 deaths in police custody (2021-2022).

The positive aspects of the proposed criminal law reforms (Bharatiya Nyaya Sanhita and Bharatiya Nagarik Suraksha Sanhita.):

1. **Modernization of Criminal Justice System:** E.g., using e-FIR, Zero FIR, new cyber offences, and modernised evidence collection.
2. **Update of Outdated Laws**
3. **Stringent Provisions for Women and Children:** The Bharatiya Nyaya Sanhita (BNS) has dedicated a separate chapter to these matters and introduced new forms of offence.
4. **Innovations:** Innovations such as trial in absentia and the introduction of community service as a penalty for minor offences are noteworthy.
5. **Gender Inclusivity:** The proposed reforms have reviewed language for gender neutrality and replaced outdated terms such as ‘insanity’ with ‘mental illness.’
6. **Specific Definitions and Offenses:** The bills define and address offences like terrorism, organized crime, mob lynching, and negligent acts, adding new dimensions to criminal law.
7. **Protection for Victims:** Eg., protection and rights of victims, including provisions related to victims’ participation, and rights.
8. **Expedited Justice:** E.g., Requirement for judgments to be given within 30 days after the trial concludes and limitations on adjournments.

What more needs to be done:

1. **Bail Reform: Supreme Court directive:** Bail should

- be the rule (*Balchand v. State of Rajasthan*, 1978), a norm, not the exception.
2. **Victim and Witness Protection:** Fully implement the Witness Protection Scheme (2018) with proper funding and oversight, as recommended by the Malimath Committee (2003).
 3. **Revamping Fast-Track Courts:** Assign dedicated judges, improve infrastructure, set binding timelines, and introduce case management systems to expedite cases.
 4. **Combatting Criminalization of Politics:** Establish an institution to tackle political criminalization, investigate the political-criminal nexus, and take decisive action, as suggested by the **Vohra Committee (1993)**.
 5. **Legal Aid Reform:** Increase funding and create performance-based incentives for legal aid providers to ensure effective representation for disadvantaged defendants.
 6. **AI in Case Management:** Integrate AI for case management, scheduling, and pretrial risk assessment, ensuring transparency and preventing biases.
 7. **Prison Administration Reform:** Implement mandatory segregation of undertrials, convicts, and first-time offenders, and enforce national health insurance schemes in prisons, following the **Justice Amitava Roy Committee recommendations**.
 8. **Gender Sensitization:** Mandatory training for judicial officers on gender sensitivity, and establishing accountability mechanisms for gender-biased comments, referencing the **SC Handbook on Gender Stereotypes**.
 9. **Victim-Centric Justice:** Provide comprehensive victim support services, including counselling, legal aid navigation, and a guaranteed right to be heard in court.
 10. **Promoting Restorative Justice:** Adopt restorative justice practices focusing on **healing harm caused by crime**, as recommended by **the Madhav Menon Committee (2007)**.

Additional information:

Reforms in Indian Criminal Law



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

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Insta Links:

- [India's Criminal Justice System](#)

Mains Link:

Q. We are witnessing increasing instances of sexual violence against women in the country. Despite existing legal provisions against it, the number of such incidences is on the rise. Suggest some innovative measures to tackle this menace. (UPSC 2014)

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

20. NEED FOR DEMOCRATIZATION OF TECHNOLOGY

Context:

At the recent G7 meeting, the Indian PM emphasized the need to turn technology monopolies into mass usage to build an inclusive society and eliminate social inequalities. He also highlighted India's commitment to making AI transparent, fair, secure, accessible, and responsible.

What is the Democratization of Technology?

Democratization of technology refers to making advanced technological tools and innovations accessible to a broader population, rather than being confined to a privileged few.

Need for Democratization of Technology

1. **Inclusion and Equality:** Ensures technology benefits all sections of society, reducing social inequalities.
2. **Access to Knowledge: Provides** widespread access to information and educational resources. e.g., [Massive Open Online Courses offered by NPTEL](#).
3. **Empowerment:** Empower individuals to innovate and participate in technological advancements.
4. **Economic Opportunities:** Creates new economic opportunities and supports small businesses.
5. **Innovation and Creativity:** Encourages diverse perspectives, leading to more creative and innovative solutions.
6. **Transparency and Accountability:** Enhance transparency in governance and corporate practices.
7. **Global Connectivity:** Facilitates global communication and collaboration.
8. **Public Participation:** Increases public participation in decision-making processes.
9. **Sustainability:** Promotes the use of technology for sustainable development and environmental protection.
10. **Security and Fairness:** Ensures technology is secure, fair, and accessible to all users.


Impact of Democratization of Technology

1. **Cultural Impact:** Broader access to technology has challenged traditional expertise and supported the DIY trend. The economic shift demanded technological innovation, fostering optimism in progress. Technology's design includes diverse interests, promoting inclusiveness.
2. **Industry Impact:** Democratization has broadened markets and reduced professional demand due to consumer empowerment. This shift has led to increased business device usage and associated security concerns.
3. **Political Impact:** Technology promotes citizen advocacy and government transparency, supporting democratic engagement. Increased global connectivity and access to information have fostered democratic trends worldwide.
4. **Major Innovations:** The Internet democratized knowledge and access to high-tech products. Cloud computing and social media furthered accessibility and user engagement. Open-source models, Arduino, littleBits, and 3D printers made technology more accessible to everyone.

How India Has Democratized Technology:

1. **Digital Public Infrastructure:** 'India Stack' was created for digital identification, payments, and data management.
2. **Common Service Centres:** Access point for delivery of Government-to-Citizen (G2C) e-services by creating physical ICT infrastructure.
3. **Ayushman Bharat:** World's largest health insurance scheme providing a safety net for 200 million families using a tech platform.
4. **CoWIN Platform:** Managed the world's largest COVID-19 vaccine drive.
5. **Svmitva Scheme:** Used drones to map rural land and provide property cards, reducing land disputes and improving access to financial services.
6. **Jan Dhan - Aadhaar - Mobile Trinity:** Enabled direct transfer of benefits to authenticated beneficiaries, reaching billions of rupees to the poor.
7. **Government e-Marketplace (GeM):** An e-commerce platform for small traders and businesses to fulfil government needs, reducing corruption and boosting transparency.
8. **Online Tendering:** Accelerated projects and improved transparency with a procurement value of ₹1 trillion in 2021.
9. **Open Courses:** One of the largest repositories of free online courses with over 10 million certifications.
10. **Low Data Tariffs:** India has some of the lowest data tariffs in the world, making internet access more affordable.
11. **NAMO Drone Didi Initiative:** Helps Women SHGs purchase drones for farming purposes.
12. **India AI Mission:** Aims to democratize the benefits of AI across all strata of society.

Digital Public Infrastructure (DPI)

Digital Public Infrastructure (DPI)	
What is DPI?	<p>Digital Public Infrastructure (DPI) refers to the technological foundation that enables the delivery of essential digital services to people.</p> <p>DPI facilitates the flow of people, money, and information through digital ID systems, real-time payment systems, and secure data sharing.</p>
Goal	The goal of DPI is to empower citizens, promote inclusion, and improve lives by leveraging digital technology to provide accessible and efficient public services.
Three Pillars of DPI	<p>DPIs is enables three fundamental things:</p> <ul style="list-style-type: none"> • Flow of people through a digital ID System E.g., Aadhar • Flow of money through a real-time fast payment system E.g., UPI • Flow of personal information through a consent-based data sharing system e.g., Account Aggregator
Other examples of DPI in India	India, through India Stack , became the first country to develop various types of DPI for services to people. E.g., Aadhaar ; DigiYatra (biometric-enabled technology for faster travel clearance and based on facial recognition system); DigiLocker (digital document storage platform) and UPI (Unified Payment Interface)
What is India Stack?	<p>India Stack is a set of APIs (Application Programming Interfaces) that provide a unique digital infrastructure to solve India's challenges in presence-less, paperless, and cashless service delivery. India Stack provides a secure and reliable platform for digital identification (Aadhaar), digital document storage (DigiLocker), and digital payments (UPI)</p> <div style="text-align: right;">  </div>
Data Protection Initiatives for DPI	<ul style="list-style-type: none"> • Aadhaar Act, 2016: Provides a legal framework for the Aadhaar • Personal Data Protection Bill: Aims to protect the privacy of personal data • National Cyber Security Policy, 2013: Provides a framework for the protection of critical information infrastructure and prevention of cyber-attacks. • Cyber Swachhta Kendra: It secures digital devices and networks through free tools and security solutions.
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Challenges Related to DPI in India	Securing political will, public support, and necessary resources for developing and implementing DPI; Ensuring strong privacy and security measures; Addressing the digital divide and ensuring accessibility for all citizens

Challenges in Democratization of Technology

1. **Digital Divide:** Lack of reliable and affordable internet, especially in remote areas.
2. **Gender and Social Inequities:** Persistent disparities in access to education, employment, and resources.
3. **Cybersecurity and Privacy:** Concerns about data privacy and online fraud deter full tech adoption.

Conclusion:

To advance technology's democratization, India and the world must prioritize expanding **internet access, promoting gender equality, strengthening cybersecurity**, fostering digital literacy, and encouraging collaborative efforts between stakeholders. These steps can ensure that technology becomes a force for equality, empowerment, and societal progress.

Insta Links:

1. [Use of Technology for election](#)
2. [Social Construction of Technology Theory](#)

21. UN LAUNCHES FRAMEWORK TO COMBAT ONLINE MISINFORMATION

Context:

The United Nations, led by Secretary-General António Guterres, has introduced the **Global Principles for Information Integrity, a framework to tackle misinformation**, disinformation, and hate speech online.

Key terms:

Term	Definition	Example
Misinformation	False or inaccurate information is spread without malicious intent.	A person shares an outdated news article about a natural disaster, believing it to be a current event.
Disinformation	Deliberately false information is spread with the intent to deceive or mislead.	A fake news website publishes a fabricated story claiming a political candidate has committed a crime to sway public opinion against them.
Hate Speech	Any speech, gesture, conduct, writing, or display which may incite violence or prejudicial action.	A social media post using derogatory terms to incite hatred against a particular ethnic group or religious community.

Key principles from the UN's Global Principles for Information Integrity:

- Combating Disinformation and Hate Speech:** All stakeholders should avoid using, supporting, or amplifying disinformation and hate speech.
- Promoting Media Freedom:** Governments should ensure timely access to information, maintain a free, independent, and plural media landscape, and protect journalists and researchers.
- Enhancing Tech Company Responsibilities:** Technology companies should incorporate safety and privacy by design, apply policies consistently across countries and languages, and prioritize crisis response and support information integrity during elections.
- Ethical AI Development:** AI developers must ensure AI applications are designed, deployed, and used ethically and safely, upholding human rights.
- Reforming Business Models:** Tech companies should explore business models that do not rely on programmatic advertising and prioritize human rights, privacy, and safety. Users should have greater control over their online experiences and personal data.
- Transparency in Advertising:** Advertisers should demand transparency in digital advertising processes to ensure their budgets do not fund disinformation or hate and do not undermine human rights.
- Data Transparency and Accountability:** Tech companies and AI developers should ensure meaningful transparency, allow researchers access to data while respecting user privacy, commission independent audits, and co-develop accountability frameworks.
- Protecting Children:** Special measures should be taken to protect and empower children, with governments providing resources for parents, guardians, and educators.

Initiatives Taken to Combat Misinformation

- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:** Social media platforms must remove content deemed false by the Press Information Bureau's fact-check unit.
- IT Act 2008:** Section 66 D regulates electronic communication offences. Penalizes individuals who send offensive or fake news messages through communication services or social media.
- Disaster Management Act 2005 and Epidemic Diseases Act 1897:** Regulate the circulation of fake news or rumours, especially during emergencies like Covid-19, to prevent public panic.
- Indian Penal Code of 1860:** Regulates fake news that causes riots and defamation. Holds individuals accountable for spreading fake news that incites violence or defames someone.
- Digital Personal Data Protection Bill 2023** has provisions to curb the misuse of individuals' data on online platforms.

Other measures: **Misinformation Combat Alliance (MCA):** The Misinformation Combat Alliance (MCA) is a group of 14 digital publishers that have proposed forming a self-regulatory body to provide fact-checking services to social media platforms.

Way Forward: Battling Misinformation in India

- India must prioritize verifying information sources**, with media organizations regularly fact-checking and raising

public awareness.

- **Establishing fact-checking standards** based on international best practices, like the **IFCN code**, is crucial. A robust legislative framework is needed to **balance free speech and protect citizens from disinformation**.
- **Broad awareness programs** should educate society about the laws and harms of fake news.
- Law enforcement agencies need **capacity building to tackle fake content effectively**.
- Digital media regulation should be strengthened, with platforms like Facebook and Google forming an **Information Trust Alliance** to combat misinformation.

Mains Link:

Q. What do you understand by the concept of “freedom of speech and expression”? Does it cover hate speech also? Why do films in India stand on a slightly different plane from other forms of expression? Discuss. (UPSC 2014)

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

22. CHINA’S ‘GREY-ZONE’ WARFARE TACTICS AND ITS IMPACT

Context:

China is **using ‘grey-zone’ tactics** against Taiwan involving sophisticated methods to frustrate the island’s leadership. This includes **simulated audiovisuals depicting invasion scenarios and sustained pressure through military sorties** and cognitive warfare tactics.

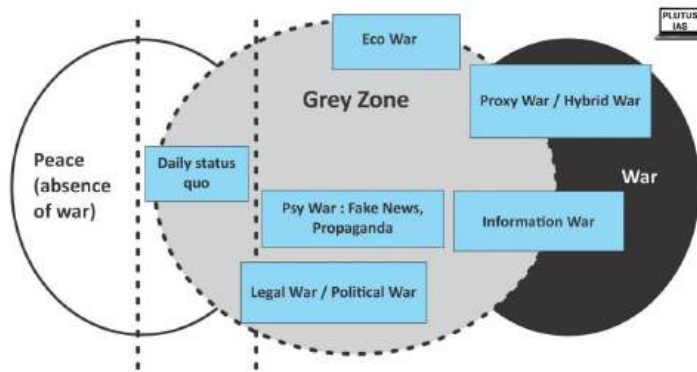
What is Grey-zone warfare?

Grey-zone warfare refers to a **strategic approach where aggressors employ a combination of conventional and non-conventional methods to harm adversaries** without triggering a full-scale military response. It operates in the ambiguous space between peace and overt conflict, utilizing tactics like cyberattacks, economic coercion, disinformation campaigns, and proxy forces to achieve strategic objectives.

Characteristics of Grey-zone Warfare:

1. **Below threshold operations:** Aggressors employ non-military tools that don’t warrant a military response.
2. **Gradual bold steps:** Actions unfold over time, often spanning years or decades, minimizing chances for decisive countermeasures.
3. **Lack of attributability:** Aggressors evade accountability, making it challenging to attribute actions and formulate responses.
4. **Target specificity:** Typically targets vulnerable na-

tions with limited capacity for retaliation due to domestic or strategic constraints.



Background of China-Taiwan Conflict:

The **China-Taiwan conflict** stems from the **Chinese Civil War**, with the Nationalist Party retreating to Taiwan in 1949. China claims **Taiwan as a province**, but Taiwan sees itself as a separate, democratic entity. This dispute over Taiwan’s status fuels tensions. Taiwan’s strategic location and semiconductor industry make it crucial.

What Techniques are being used by China as a part of its ‘Grey zone warfare’ against Taiwan:

Technique	Description
Cognitive Warfare	China’s Weibo account released a 3D animation video depicting an invasion scenario of Taiwan’s areas in Taipei and Kaohsiung with land warship-based ballistic missile launchers.
Sustained Military Pressure	China has maintained sustained pressure on Taiwan’s defence and Intelligence forces since 2020, with daily sorties conducted by PLA fighter jets, UAVs, strategic fighters, and early warning aircraft inducing wear-out within Taiwanese forces.
Intelligence Gathering	UAVs are deployed to conduct intelligence work in the areas surrounding the island.
Ideological and Psychological	Pushing narratives within Taiwanese territory to thrust ideological choices upon its citizens by initiating public discussions on social media and garnering attention for the Chinese cause.
Economic Warfare	China has taken coercive economic measures, leveraging the cross-strait trade and business interdependence to seek concessions. Example: Unilateral suspension of preferential tax rates for chemical imports from Taiwan under the ECFA.

Other tactics being used by different states as part of Grey-Zone Warfare:

1. **Maritime militia:** State-sponsored actors use non-state actors like “**maritime militia**” to harass coastal communities, disrupt trade routes, and test boundaries without triggering direct conflict.
 - **Eg:** China’s use of Coast Guard vessels and fishing fleets in the South China Sea against other claimants.
2. **Combat Drones:** Armed drones pose new threats, targeting warships, and critical infrastructure, and conducting surveillance and intelligence gathering.
 - **Eg:** Houthi rebels in Yemen attacking ships in the Red Sea with drones.
3. **Persistent Piracy:** While declining, Somali pirates still operate in the Indian Ocean, threatening shipping and hindering trade.
 - **Eg:** 2023 hijacking of Bulk carrier vessel MV Ruen in the Arabian Sea.
4. **Environmental Crimes:** **IUU** or Illegal, unreported, and unregulated fishing depletes fish stocks, harms ecosystems, and disadvantages legitimate fishermen.
 - **Eg:** Large-scale IUU fishing by Chinese vessels in the South China Sea and Indian Ocean.

China’s Grey Zone Tactics against India:

1. **South China Sea Activities:** China utilizes naval and civilian vessels to assert control over the South China Sea, causing tensions with neighbouring countries, including India.
2. **Infrastructure Construction in Border Areas:** China builds infrastructure and establishes villages near India’s borders, reinforcing territorial assertions and gaining strategic advantages.
3. **Investments in Digital Technologies:** China directs investments into Indian apps, media, and digital platforms, potentially influencing public perceptions and narratives.

How is India impacted due to these challenges?

1. **National Security Concerns:** Proxy conflicts with non-state actors can destabilize coastal regions, threaten communication cables, and potentially escalate into regional tensions.
 - **Eg:** 2018 Maldives political crisis.
2. **Disruptions to trade:** Piracy and grey-zone warfare attacks on shipping routes can cost India billions annually, impacting **vital imports** like oil and raw materials.
 - **Eg:** the current cost of shipping rose due to the Red Sea and Hormuz instability.
3. **Terrorism:** Maritime terrorism poses a direct threat to coastal cities, critical infrastructure, and tourism-reliant communities.
 - **Eg:** 2008 Mumbai attacks.
4. **Pollution:** Oil spills from accidents or deliberate dumping can devastate marine ecosystems, impacting fishing, tourism, and public health.
 - **Eg:** 2021 Sri Lanka oil spill.

5. **Climate change:** Rising sea levels and increasing storm frequency threaten coastal infrastructure, displace communities, and exacerbate pollution concerns.
 - **Eg:** India is the **7th-most vulnerable** country with respect to climate extremes (German-watch 2020).

India’s Preparedness against Grey-zone Warfare:

1. **Chief of Defence Staff:** Coordinates the three Services (Army, Air Force, Navy).
2. **Self-reliance in Defence Manufacturing:** Promoted through initiatives like Defence Procurement Procedure (DAP) 2020.
3. **Cooperation with like-minded countries:** Signed agreements like the [General Security of Military Information Agreement \(GSOMIA\)](#) with the US.
4. **Other measures:** Establishment of the Indian Computer Emergency Response Team (CERT-In), among others.

Needful measures:

1. **Modernize Naval Capabilities:** Invest in advanced submarines, drones, and electronic warfare systems to counter emerging threats like grey-zone activities and drone attacks.
 - **Eg:** Kalvari-class submarines under [Project 75I](#).
2. **International Cooperation:** Partner with regional and global powers to share intelligence, combat piracy, and address environmental crimes.
 - **E.g.:** multilateral initiatives like the [Indian Ocean Rim Association \(IORA\)](#) and [Quadri-lateral Security Dialogue \(QUAD\)](#).
3. **Coastal Surveillance and Infrastructure:** Enhance coast guard patrols, utilize satellite technology, and strengthen critical port infrastructure to deter attacks and monitor threats.
 - **Eg:** Coastal Radar Chain Project.
4. **Sustainable Fisheries Management:** Implement stricter regulations, promote responsible fishing practices, and collaborate with neighbouring countries to combat illegal fishing.
 - **Eg:** [National Policy on Marine Fisheries 2017](#).
5. **Climate Change Adaptation:** Invest in coastal infrastructure resilience, develop early warning systems for natural disasters, and promote public awareness and preparedness.
 - **Eg:** [National Action Plan on Climate Change \(NAPCC\)](#).

Conclusion:

In conclusion, the diverse challenges posed by the complex maritime domain demand innovative and collaborative solutions. India’s “Security and Growth for All in the Region” (**SAGAR**) initiative exemplifies a proactive approach, prioritizing both regional security and shared prosperity in the Indian Ocean.

Insta links:

- [Today's weapon of choice, its expanding dimensions](#)

Mains Links:

Q South China Sea has assumed great geopolitical significance in the present context. Comment. (UPSC 2016)

23. INDIA-BANGLADESH RELATIONS

Context:

Recently, the Prime Minister of Bangladesh visited India for **2-day state visit**.

Key Highlights of the Bilateral Meet:

Key Highlights	Description
Promotion of Shared Vision	Peace, prosperity, and development focusing on connectivity, commerce, and collaboration.
Digital and Green Partnership	Collaboration on digital and green technologies, joint development of a small satellite.
Trade and Investment	Strengthening trade links, CEPA negotiations, and operationalizing SEZs in Bangladesh .
Power and Energy Collaboration	Intra-regional electricity trade and high-capacity grid interconnections.
Regional and Global Cooperation	Anchoring regional integration under BIMSTEC, SAARC, and IORA .
Cross-Border Travel	E-Medical Visa facilities for Bangladeshi citizens , new Assistant High Commission in Rangpur.
Water Resource Management	Renewing Ganges Water Sharing Treaty , managing Teesta River.
BBIN Motor Vehicle Agreement	Operationalization for transit facilities to Nepal and Bhutan .
Indo-Pacific Cooperation	Co-leading the ' Disaster Risk Reduction and Management ' pillar of IPOI.

Dimensions of India-Bangladesh Relations:

Dimensions	Description
Historical Ties	India and Bangladesh share a deep-rooted relationship marked by historical ties and growing cooperation across multiple fronts. Initially forged during the 1971 Liberation War , bilateral relations have evolved positively under Sheikh Hasina's leadership since 1996 , culminating in significant agreements such as the Ganga water-sharing treaty
Economic Cooperation	Bilateral trade growth, reaching USD 14 billion in 2023-24 . Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh in Asia. Joint feasibility study for Comprehensive Economic Partnership Agreement (CEPA)
Infrastructure	Resolved Land Boundary Agreement (LBA) and maritime disputes. Inauguration of Akhaura-Agartala Rail Link . BIMSTEC Master Plan for Transport Connectivity. Matarbari Port development connecting Dhaka and Northeast India.
Energy	Bangladesh's electricity imports from India. Cooperation in the Rooppur Nuclear Power Plant project. India-Bangladesh Friendship Pipeline will transport one million Metric Tonnes Per Annum (MMTPA) of High-Speed Diesel from Siliguri, West Bengal, to Parbatipur, Dinajpur district, Bangladesh.
Defence Cooperation	Shared border of 4096.7 km . Joint military exercises (Army - Exercise Sampriti, Navy - Exercise Bongo Sagar).
Multilateral Cooperation	Engagement in SAARC, BIMSTEC, and IORA forums. According to the India Tourism Statistics Report 2022 of the Ministry of Tourism, Bangladesh has been the second-largest tourist-generating market for India in the year 2021.

Issues between the two countries:

1. **Illegal Migration:** Concerns over illegal migration from Bangladesh to India, impacting resources and security, including Rohingya refugees and implications of **India's National Register of Citizens (NRC)**.

2. **Sharing of Transboundary River Waters:** Unresolved treaties for major rivers like Teesta and Feni despite sharing 54 rivers, impacting water management and bilateral relations.
3. **Growing Chinese Influence in Bangladesh:** Bangladesh's involvement in China's Belt and Road Initiative (BRI), raises concerns for India's regional influence and strategic interests.
4. **Drug Smuggling & Trafficking:** Challenges with cross-border drug smuggling, human trafficking (especially women and children), and wildlife poaching, affecting both countries' security and stability.

Way forward and Conclusion:

Efforts to strengthen India-Bangladesh relations should focus on establishing joint task forces to combat cross-border drug smuggling and human trafficking effectively. **Utilizing shared intelligence and coordinated operations** can disrupt illegal networks. Implementing **smart border management solutions**, leveraging artificial intelligence and data analytics will enhance security and efficiency. Furthermore, **creating a digital connectivity corridor** with high-speed internet and digital services will spur trade, collaboration, and technological exchange between the two nations.

Insta Links:

- [India-Bangladesh relations](#)

Mains Links:

Q. Analyse internal security threats and transborder crimes along Myanmar, Bangladesh and Pakistan borders including Line of Control (LoC). Also discuss the role played by various security forces in this regard. (UPSC 2018)

Q. Project 'Mausam' is considered a unique foreign policy initiative of the Indian Government to improve relationships with its neighbours. Does the project have a strategic dimension? Discuss. (UPSC 2015)

Prelims Links:

Q. With reference to river Teesta, consider the following statements: (UPSC 2017)

1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

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

Ans: (b)

24. INDUS WATER TREATY

Context:

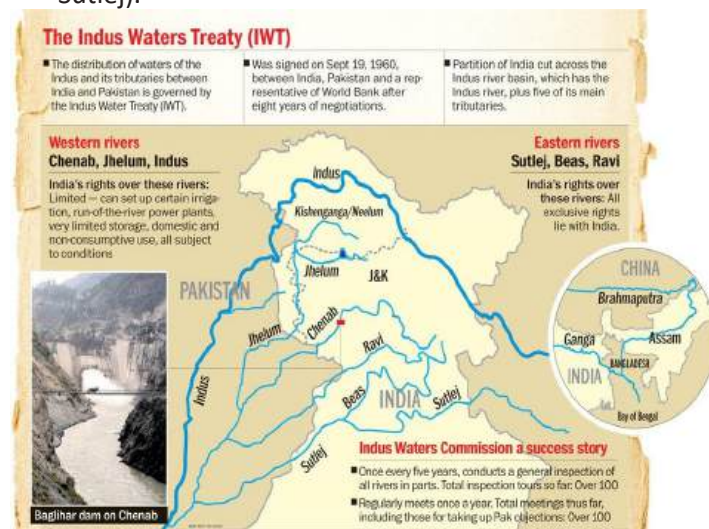
A Pakistani **delegation arrived in Jammu's Kishtwar district** to inspect hydroelectric power projects (**Kishanganga HEP** on the Jhelum River basin and Ratle HEP on the Chenab River) **under the Indus Water Treaty**, amidst ongoing disputes over technical objections raised by Pakistan regarding certain projects.

- This visit marks the **first inspection since the revocation of Jammu & Kashmir's special status in 2019.**

What is the Indus Water Treaty?

The Indus Waters Treaty (IWT) is a **water-sharing agreement signed in 1960 between India and Pakistan**, mediated by the World Bank. It allocates the waters of the Indus River system between the two countries. Under the treaty:

- Pakistan receives the waters of the **Western Rivers** (Indus, Jhelum, Chenab)
- India receives water from the **Eastern Rivers** (Ravi, Beas, Sutlej).



Also, India can use the Western Rivers for limited purposes like **hydroelectric power generation**, with certain restrictions and a dispute resolution mechanism managed by a **Permanent Indus Commission and involving Neutral Experts** and a Court of Arbitration if necessary.

Ever wondered!

What is the Dispute Resolution Mechanism?

The treaty provides a structured mechanism for resolving disputes related to water-sharing:

Step 1: The Permanent Indus Commission (PIC) is mandated to meet at least once a year to discuss and resolve issues arising from the implementation of the treaty.

Step 2: If disputes remain unresolved after PIC discussions, a Neutral Expert is appointed to adjudicate on technical matters concerning the interpretation or application of the treaty's provisions.

Step 3: If disputes persist beyond the Neutral Expert's determination, the matter can be referred to a Court of Arbitration, consisting of a seven-member arbitral tribunal. This tribunal is tasked with providing a binding decision on the dispute.

Current Issue:

India and Pakistan have **disagreements over the design features and operation of certain** hydroelectric projects, notably the Kishenganga and Ratle Hydroelectric Projects (HEPs), which are constructed on the Jhelum and Chenab rivers respectively.

Issues faced by the IWT:

1. **Challenges for setting up new power projects:** The continuing dispute creates challenges for the setting up of new power projects
2. **Limits water usage:** The IWT permits Jammu and Kashmir to use the waters of the rivers in a limited manner, thus affecting water availability for agricultural purposes.
3. **Lack of collaboration** and mutual trust between countries
4. **No regular data sharing** as planned in the treaty.
5. **Limited to a conflict-resolution mechanism** instead of strengthening the interaction, trust and cooperation
6. **Dispute resolution:** The most crucial reason to alter the treaty is to **clarify Article IX of the treaty's dispute resolution system.**
 - a. Though India is rightful of **using the western rivers for non-consumptive purposes**, each time India plans a hydroelectric project, **Pakistan challenges it by calling for international arbitration.** E.g., the **hydroelectric power plants, Kishanganga and Ratle.**
7. **Climate change factor:** The treaty **did not consider climate change, global warming, environmental impact assessments and such issues.**
8. **Ineffectiveness of the Permanent Indus Commission**
9. **Does not cover groundwater:** The Treaty is no longer fit for its purpose as it only covers surface water but not groundwater.
 - b. **Groundwater depletion may increase by up to 75% in 2050**, putting further pressure on the upstream portions of the Indus River.

Way Forward:

1. **Negotiation and Dialogue:** Use established mechanisms like the **Permanent Indus Commission (PIC)** to address and resolve disputes through direct discussions.
2. **Technical Solutions:** Employ technical experts to resolve disputes over the design, construction, and operation of water infrastructure, as seen in the Baglihar Dam case.
3. **Mediation:** Seek third-party mediation if negotiations fail, with potential assistance from the World Bank or other international organizations.
4. **Legal Recourse:** Utilize the treaty's arbitration panel for unresolved disputes after failed negotiations or mediation.
5. **Long-term Solutions:** Address larger political issues through sustained dialogue and cooperation for lasting resolution.

Conclusion

As a document, the treaty may have certain weaknesses, but the larger problem is the fraught relationship between India and Pakistan. Experts are calling for the renegotiation of the treaty. There is a need for **both countries should revive the treaty** in such a way that the resources are equitably shared between both countries.

Mains Link:

Q. Present an account of the Indus Water Treaty and examine its ecological, economic and political implications in the context of changing bilateral relations. (UPSC 2016)

Prelims Link:

Q1. With reference to the Indus river system, of the following four rivers, three of them pour into one of them which joins the Indus directly. Among the following, which one is such a river that joins the Indus direct? (UPSC 2021)

- (a) Chenab
- (b) Jhelum
- (c) Ravi
- (d) Sutlej

Ans: (d)

Q2. Consider the following pairs (UPSC 2019)

	Glacier	River
1.	Bandarpunch	Yamuna
2.	Bara Shigri	Chenab
3.	Milam	Mandakini
4.	Siachen	Nubra
5.	Zemu	Manas

Which of the pairs given above are correctly matched?

- (a) 1, 2 and 4
- (b) 1, 3 and 4
- (c) 2 and 5
- (d) 3 and 5

Ans: (a)

Topics: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

25. THE GROUP OF SEVEN (G7)

Context:

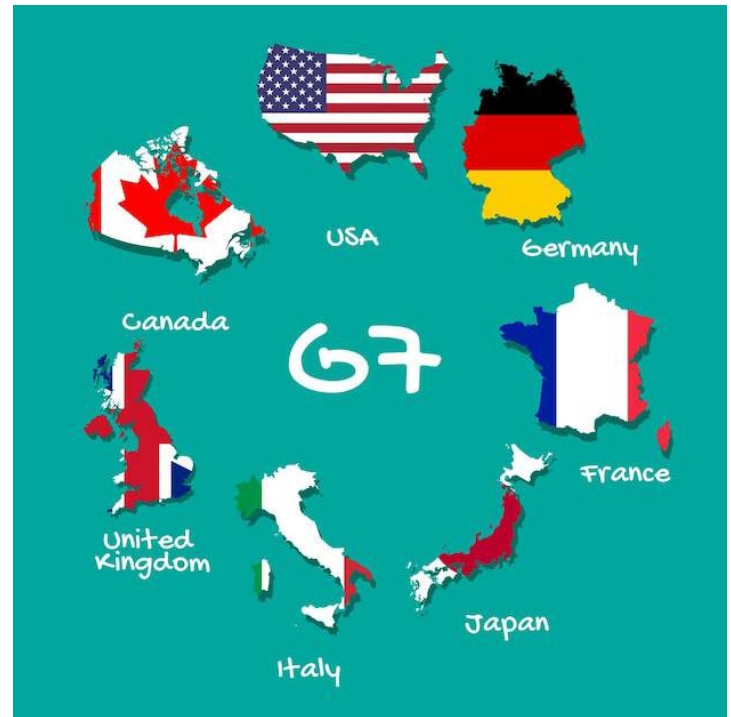
The Group of Seven (G7), consisting of the world's most advanced economies—Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States—has been a significant global platform addressing economic policy, international security, and multilateral cooperation. India's association with the G7 has evolved over the years, reflecting its growing economic stature and strategic importance in global geopolitics.

G7:

- The G7, originally G8, was set up in 1975 as an informal forum bringing together the leaders of the world's leading industrial nations.
- The summit gathers leaders from the European Union (EU) and the following countries: Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
- The major purpose of the G-7 is to discuss and deliberate on international economic issues. It sometimes acts in concert to help resolve other global problems, with a special focus on economic issues.

The Role and Significance of G7

- **Economic Powerhouse:** Global GDP Contribution: The G7 countries together contribute to a significant portion of the world's Gross Domestic Product (GDP), making their economic policies influential globally.
- **Financial Stability:** The group plays a crucial role in maintaining global financial stability through coordinated policies and collective action.
- **Agenda Setting:** The G7 sets the agenda for critical global issues, including climate change, trade policies, and international security.
- **Development Aid:** The member countries are among the largest contributors to development aid, influencing global developmental priorities.



India and the G7: A Growing Partnership

Historical Context

- **Observer Status:** India has been invited as a guest country in various G7 summits, signifying its strategic importance.
- **Shared Values:** As the world's largest democracy, India shares common values with G7 nations, such as a commitment to democratic governance, rule of law, and human rights.

Economic and Strategic Synergies

- **Trade and Investment:** [India's trade with G7 countries has grown significantly](#), with bilateral trade agreements enhancing economic ties.
- **Strategic Partnerships:** India has strategic partnerships with several G7 nations, focusing on defense, technology transfer, and counter-terrorism.

Collaborative Initiatives

- **Climate Action:** India collaborates with G7 countries on climate initiatives, aligning with global efforts to combat climate change.
- **Technology and Innovation:** Partnerships in technology and innovation are critical, with initiatives like the India-EU Connectivity Partnership promoting digital transformation.

Enhancing India-G7 Cooperation

Deepening Economic Ties

- **Trade Liberalization:** Enhancing trade liberalization efforts and reducing trade barriers can bolster economic relations.
- **Investment Opportunities:** Encouraging investment in sectors like renewable energy, technology, and infrastructure can drive mutual growth.

Strategic Collaborations

- **Defense and Security:** Strengthening defense coop-

eration through joint exercises, intelligence sharing, and technology transfers can address common security challenges.

- Health and Pandemic Preparedness: Collaborating on global health initiatives and pandemic preparedness can enhance resilience against future health crises.

Multilateral Engagement

- Global Governance: India’s active participation in G7 forums can contribute to shaping inclusive global governance frameworks.
- Climate Leadership: Joint efforts in climate action, focusing on sustainable development and green technologies, can set benchmarks for global environmental policies.

Technological Innovation

- Digital Transformation: Collaborative efforts in digital infrastructure development, cybersecurity, and artificial intelligence can drive the next wave of technological advancements.
- Research and Development: Joint research initiatives in fields like biotechnology, space exploration, and renewable energy can foster innovation.

Criticisms against G7:

- G7 gatherings tend to attract thousands of protesters, and it is protested by thousands every year.
- Many protesters claim the G7 – which has no representative from any African, Russian or Middle Eastern nation – is completely outdated.
- Protest groups also use the worldwide platform as a stage to lobby and campaign on issues that are important to them.
- G7 leaders are creating a wide gap between the ‘haves’ and the ‘have-nots’ both in their countries as well as across the globe, according to a new report published by non-profit Oxfam International. As a result, they are making the fight against alleviating poverty more difficult, claimed the report.

Conclusion

- India’s evolving relationship with the G7 signifies its growing importance in global economic and strategic affairs.
- The synergies between India and G7 nations, driven by shared values and mutual interests, present vast opportunities for collaborative growth.
- Moving forward, **deepening economic ties, strategic collaborations, and multilateral engagements** will be crucial in navigating global challenges and fostering sustainable development.
- As India continues to rise on the global stage, its partnership with the G7 will play a pivotal role in shaping a balanced and inclusive world order.
- The G7 and India are poised to collaborate on various fronts, from economic policies to strategic secu-

riety and technological innovation. By leveraging their strengths and aligning their goals, they can address global challenges more effectively and drive collective progress.

- The way forward lies in deepening partnerships, fostering mutual trust, and working towards common objectives for a prosperous and stable global future

26. PRIME MINISTERS REVIEW INDIA-ITALY STRATEGIC PARTNERSHIP

Context:

The Prime Minister met Italian **Prime Minister Giorgia Meloni at the G7 Summit** to review their **strategic partnership**. They focused on the **Indo-Pacific and the India-Middle East-Europe Economic Corridor (IMEC)**.

What is Strategic Partnership in International Relations?

A strategic partnership is a formal alliance between countries that collaborate on key issues such as security, trade, and political matters. It involves mutual commitments to support each other’s interests and aims to enhance stability and prosperity through cooperation. These partnerships often include agreements on **defence cooperation, economic collaboration, and diplomatic support** in international forums.

Highlights of the recent meeting between the two PMs:

1. Commitment to a **free and open Indo-Pacific**.
2. Discussed expanding commercial ties in clean energy, manufacturing, space, AI, and critical minerals.
3. Welcomed recent MoU **on Industrial Property Rights**.
4. Announced forthcoming **visit of Italian naval ships to India**.
5. Emphasized strong people-to-people ties and the **establishment of an ICCR chair at the University of Milan**.
6. Discussed the implementation of the **Migration and Mobility Agreement**.
7. Indian PM thanked Italy for recognizing **Indian contributions during WWII** and informed about upgrading the **Yashwant Ghadge Memorial in Italy**.

Various dimensions of the India-Italy relationship are as follows:

Dimension	Examples
Diplomatic ties	India and Italy established diplomatic relations in 1947 . India and Italy have elevated their bilateral relationship to the level of strategic partnership 2020-2025 Action Plan for bilateral relations

Trade	In 2022, bilateral trade has reached \$15bn between both countries. Italy is India's 4th largest trading partner in the EU, after Germany, Belgium, and Netherlands. The balance of trade has been in India's favour since the early eighties. India invited Italy to partner in 'Make in India' and 'Aatmanirbhar Bharat Abhiyan' with a focus on the areas of renewable energy, green hydrogen, IT, telecom, and space among others.
Investment	Establishment of a 'Startup Bridge' between India and Italy (2023) India-Italy Strategic Partnership on Energy Transition announced in 2021 Indo-Italian Joint Economic Commission Cooperation has been in existence since 1976. Migration and Mobility Partnership Agreement signed in 2023 to ensure safe and legal migration. Italian car manufacturer Fiat has been operating in India since 1997 . Indian IT company Tata Consultancy Services (TCS) has a large presence in Italy, with over 2,500 employees in the country.
Cultural ties	Settimana della Lingua Italiana nel Mondo (Week of the Italian Language in the World) celebrated the Italian language and culture in India. Year-long Festival of India in Italy 'Srijan' . Indian community in Italy is the third largest community of Indians in Europe after the UK and the Netherlands.
Science	Italian Space Agency (ASI)-ISRO working group in heliophysics New Executive Programme of Cooperation for 2025-27 to promote joint research and development in Science & Technology
Education	Italy is a popular destination for Indian students studying abroad . India and Italy have also signed agreements for academic and research cooperation.
Defence	Indian Army played a significant role in the liberation of Italy in the 2nd world war . Joint military exercises and training courses on a regular basis: PASSEX Exercise, MILAN (Naval Exercises)
Collaborations	In 2023, Italy joined the Indo-Pacific Ocean Initiative's Science and Technology Pillar. Italy joined the India-led International Solar Alliance, Coalition for Disaster Resilient Infrastructure, Global Biofuels Alliance, and IMEC

Who was Yashwant Ghadge?

Naik Yeshwant Ghadge was an Indian war hero in WWII's Italian campaign (1943-45). He captured an enemy post in Montone, Italy, at age 23. Posthumously awarded the **Victoria Cross, Britain's highest military honour**.

What was the Italian campaign of World War II?

- Allied Forces fought against the **Axis Powers (Nazi Germany, Italy, Japan)**.
- Aimed to liberate Italy**, beginning with the 1943 invasion of Sicily.
- Naik Ghadge died battling** German resistance between the Trasimene/Albert Line and the Gothic Line.

The heroism of Indian soldiers in the war:

- Over 2.5 million Indian soldiers** fought for the Allies in WWII.
- Around 50,000 participated in the Italian campaign, with 5,782 casualties.
- Indian forces, including several divisions and brigades, **were the third-largest Allied group in Italy**.
- They played key roles in battles like **Monte Cassino and the Gothic Line breach, earning high recognition**.

Insta Links:

- [Shaping a trilateral as Rome looks to the Indo-Pacific](#)

Mains Link:

Elucidate upon the potential of a trilateral relationship between India, Japan & Italy.

Prelims Link:

The region often mentioned in the news: (UPSC 2022)

- | | |
|-----------------|----------|
| 1. Anatolia | Turkey |
| 2. Amhara | Ethiopia |
| 3. Cabo Delgado | Spain |
| 4. Catalonia | Italy |

How many pairs given above are correctly matched?

- Only one pair
- Only two pairs
- Only three pairs
- All four pairs

27.TWO DECADES OF QUAD: DIPLOMACY AND COOPERATION IN THE INDO-PACIFIC

Context:

A report has been released on the **TWO DECADES OF THE QUAD: Diplomacy & Cooperation in the Indo-Pacific**

What is QUAD?

The Quad, or Quadrilateral Security Dialogue, is a strategic partnership between Australia, India, Japan, and the US. It is not a military alliance or mutual defense agreement. It

was formed during the ASEAN Regional Forum, the Quad nations account for 24% of the global population, 35% of the world's GDP, and 18% of global trade.

TIMELINE: GENESIS AND EVOLUTION

2004	FORMATION OF THE QUAD	The Quad was formed by Australia, India, Japan, and the United States, to coordinate relief efforts after the Indian Ocean Tsunami.
2007	TRANSFORMATION INTO A STRATEGIC DIALOGUE	The first Quad officials' meeting takes place and focuses on shared interests in the Indo-Pacific region.
2008-2012	DISSOLUTION OF THE QUAD	Australia withdraws from the Quad over concerns of antagonizing China, however, Prime Minister Shinzo Abe of Japan later calls for a revival of the partnership.
2017-2024	REVIVAL OF THE QUAD	In 2017, the Quad was revived and expanded its focus to include new policy areas.
	EXPANSION OF COOPERATION	The Quad now includes joint military exercises, six working groups, and an investors network, among other initiatives.
2021-2024	LEADERS' SUMMITS CHART THE PATH FORWARD	Annual Quad Leaders' Summits have provided high-level guidance through joint statements on shared goals and principles.

Policy/Initiative under QUAD:

Policy/Initiative	Description
Health	Established <u>Quad Vaccine Partnership</u> , evolving into the broader <u>Quad Health Security Partnership</u> in 2023. Initiatives include e-health systems expansion and the Quad Pandemic Preparedness Exercise.
Climate	Launched the <u>Quad Climate Change Adaptation and Mitigation Package (Q-CHAMP)</u> in 2022. In 2023, released Principles on Clean Energy Supply Chains in the Indo-Pacific.
Critical and Emerging Technology	Initiated the Semiconductor <u>Supply Chain Initiative in 2021</u> to diversify technology supply chains.

Space	Launched the Indo-Pacific Partnership for <u>Maritime Domain Awareness (IPM-DA)</u> in 2022.
Infrastructure	Launched the <u>Trilateral Partnership for Infrastructure Investment in the Indo-Pacific (TIP)</u> in 2018.
Cybersecurity	Established the <u>Quad Cybersecurity Partnership</u> in 2022.

How does QUAD contribute to enhancing India's strategic interests

- Counterbalance to China:** As a member of the QUAD, in the event of a rise in the Chinese hostilities on its borders, India can take the support of the other QUAD nations to counter it.
- Strategic Partnerships:** QUAD facilitates strategic partnerships among like-minded democracies. This strengthens India's diplomatic ties, fostering a multilateral approach to regional challenges.
- For a free and open Indo-Pacific:** This aspect becomes important for India, in the wake of China's aggressiveness and coercive nature in the strategic Indo-Pacific region.
- India as a Net Security provider:** For India to assert this role as a Region, its dominance in the Indian Ocean Region needs to be maintained and sustained. QUAD provides India with a platform to enhance security through partnerships in the region.
- Multipolar World:** India has supported a rule-based multipolar world and QUAD can help it achieve its ambition of becoming a regional superpower.
- Maritime Security Cooperation:** QUAD members collaborate on maritime security, including joint naval exercises and patrols. This enhances India's capabilities in addressing common challenges.
- Infrastructure Development:** QUAD aims to promote infrastructure development in the Indo-Pacific, fostering connectivity. This aligns with India's interests in the region.
- Humanitarian Assistance and Disaster Relief:** This enhances India's capacity to respond to natural disasters in the Indo-Pacific, showcasing its commitment to regional stability.
- Technology and Cybersecurity Cooperation:** This collaboration benefits India by leveraging technological advancements and enhancing cyber resilience.
- Promotion of Democratic Values:** QUAD promotes democratic values, the rule of law, and international norms. India, as the world's largest democracy, aligns with these principles.

Issues Related to Quad:

- Undefined Vision:** Quad lacks a clear strategic mission despite its potential for cooperation.
- Maritime Focus:** Emphasis on the Indo-Pacific makes Quad primarily maritime, limiting cooperation in the Asia-Pacific and Eurasian regions.
- India's Aversion to Alliances:** India's reluctance to join a formal treaty alliance hinders stronger Quad engagement.

Conclusion

QUAD serves as a **key platform** for India to advance its strategic interests in the Indo-Pacific by promoting **security, stability, economic opportunities**, and **collaborative solutions** to regional challenges. Navigating the complex geopolitical dynamics requires a **nuanced** and **strategic** approach from India to safeguard its interests and promote regional stability.

Insta Links:

- [QUAD](#)

Mains Link:

Q. Quadrilateral Security Dialogue (Quad) is transforming itself into a trade bloc from a military alliance, in present times Discuss. (UPSC 2020)

Topics: Effect of policies and politics of developed and developing countries on India’s interests, Indian diaspora.

28. US-CHINA TRADE WAR AND ITS IMPACT ON INDIA

Context:

A potential US-China trade war presents both opportunities and challenges for India.

Background:

The [US-China trade tensions](#) have escalated with **President Biden’s decision to increase tariffs on \$18 billion worth of Chinese imports**. The move aims to bolster American industries and reduce reliance on Chinese imports, with significant tariff hikes planned for electric vehicles and lithium-ion batteries. This escalation **underscores the ongoing trade disputes between the two economic giants**.

Notably, tariffs on **electric vehicles will surge from 25% to 100%**, and tariffs on lithium-ion **EV batteries will rise from 7.5% to 25%**. Further tariff increases are anticipated in the future, impacting sectors like semiconductors and solar panels.

Reasons for high tariff:

- **US’s broader strategy outlined in Section 301 of the Trade Act of 1974.**
- China’s unfair practices related to technology transfer, intellectual property, innovation, and its large manufacturing capacities.
- **China’s dumping of low-priced exports** into global markets has negatively impacted American businesses and workers.

Economic and Political Implications

Aspects	Description
Domestic Industry	The tariffs will bolster U.S. domestic manufacturing by making Chinese imports less competitive.
Election Politics	With an election looming, President Biden is likely aiming to appeal to voters sceptical of his economic policies.
Inflation Concerns	While intended to protect American jobs, tariffs could lead to higher consumer prices and contribute to inflation.
	Companies may find it difficult to operate with huge taxes, leading to increased product prices, and burdening consumers.
On developing Countries	The trade war between the U.S. and China could hurt the economic prospects across developing countries.
On Global Economy	A trade war could weaken investment, depress spending, unsettle financial markets , and slow the global economy.
	Other countries could face disruptions in their supply chains , and multinational companies may need to rethink their production and sourcing strategies.

Implications for India:

1. Positives:

- Indian exporters stand to benefit from the trade war**, especially in categories like face masks, syringes,

medical gloves, and natural graphite, where both China and India have a significant presence in the US market.

- b. **India can seize opportunities to enhance its exports to the US** and bridge the trade deficit by focusing on sectors like information and communication technology, eCommerce, chemicals, outsourcing, and automotive.

2. Negatives:

- a. Indian authorities must ramp up efforts to **prevent the influx of low-priced Chinese goods into India**, which could harm domestic manufacturing.
- b. **The risk of cheap electric vehicles (EVs) flooding** the Indian market due to potential EU tariffs on Chinese EV imports could negatively impact Indian businesses.
- c. **US tariffs on products like lithium-ion batteries and semiconductors** from China might divert these goods to India, impacting local industries.
- d. **India’s significant trade relationship with China**, which already faces a trade deficit, could pose challenges in managing the repercussions of the US-China trade war.

Protection measures available with India:

India has measures in **place to address imports sold below the country of origin’s price**, with the **Directorate General of Trade Remedies** imposing anti-dumping duties. However, there are delays in accessing and analyzing trade data, hindering prompt action.

Way forward:

To address the new US-China trade tensions, both sides have agreed to engage in talks. However, **China has not committed to specific actions to address American concerns** yet. China defends its cheap solar panels and green products as crucial in the fight against climate change. Nonetheless, Beijing recognizes challenges such as **manufacturing overcapacity and weak consumer spending**, hindering sustainable growth. Consequently, **China requires better policy coordination** to foster new technology development without causing overinvestment or regional disparities.

US tariffs on Chinese imports may impact global trade, prompting vigilance from DGTR. Establishing a department for daily trade data analysis could expedite action. A trade policy strengthening India’s manufacturing growth while diversifying from China warrants attention for **India’s ‘China plus one’ strategy**.

Ever wondered?

“Litigotiation”

“Litigotiation refers to the strategic combination of litigation and negotiation used to resolve legal disputes”

For instance, recently, India and the USA notified the World Trade Organization (WTO) of reaching a mutually agreed solution in the poultry dispute, withdrawing their respective pending WTO cases in the matter, following the settlement reached between the two countries.

Insta Links:

- [US-China Trade War](#)
- [2023 World Trade Report: Re-globalization](#)

Mains Links:

Q. What are the key areas of reform if the WTO has to survive in the present context of the ‘Trade War’, especially keeping in mind the interest of India? (UPSC 2018)

29. AUKUS ALLIANCE AND ITS PIVOT TO FRANCE

Context:

The [article](#) discusses the AUKUS alliance among the US, UK, and Australia to bolster military capabilities against China, **including sharing nuclear submarine technology**.

What is AUKUS?

AUKUS, a **trilateral partnership formed in 2021**, aims to bolster security and defence interests, primarily countering China's influence in the **Indo-Pacific region**. It entails deeper information and technology sharing, along with the integration of security-related industries. **India is not a member but has engaged in informal talks** with the AUKUS bloc on emerging technologies, though no formal dialogue has taken place yet.

Technologies shared among AUKUS:

AUKUS shares **nuclear submarine propulsion technology with Australia**, marking the first time the U.S. has done so outside the UK. Additionally, the partnership spans **eight high-tech military domains**, including AI, quantum technologies, cyber warfare, undersea warfare, hypersonic technologies, electronic warfare, and innovation/information sharing.

AUKUS's impact on India:

Despite operating similar aircraft to AUKUS nations, **India wasn't offered participation** in AUKUS's nuclear technology sharing. Traditionally, the US reserves such technology for closer allies.

What can be an alternative for India?

France could be a **strategic partner for India**, especially in developing nuclear submarine technology. **France's use of low-enriched uranium aligns** with non-proliferation standards, making it a suitable option. The existing strategic relationship between France and India could support this partnership.

Significance of Indo-Pacific:

The **Indo-Pacific region has emerged as a critical geopolitical and geoeconomic space**, capturing the attention of major powers around the world. India being the source of the name "Indo" in the region, has been a key partner of various like-minded stakeholders, led by the USA.

Elements of India's Indo-Pacific Approach:

- **Security and Défense Cooperation:** India emphasizes the importance of a free, open, and inclusive Indo-Pacific region, with a focus on maritime security and defence cooperation.
- **Connectivity and Infrastructure Development** in the Indo-Pacific, emphasizing the principles of transparency, sustainability, and respect for sovereignty.
- **Economic Cooperation and Trade** aiming to foster economic growth, shared prosperity, and sustainable development. Initiatives like the Act East policy and East Asia Summit, focus on strengthening economic linkages with South-east Asian countries.
- **People-to-People Exchanges:** India emphasizes people-to-people exchanges, cultural diplomacy, and soft power initiatives as essential components of its Indo-Pacific approach.
- **Multilateralism and Regional Cooperation:** India believes in the importance of multilateralism and regional cooperation in addressing common challenges and it actively engages in forums such as ASEAN-led mechanisms, QUAD, BIMSTEC et al to promote dialogue, cooperation, and collective action.

The extent to which India's approach aligns with the objectives and initiatives of the QUAD and AUKUS:

Positive alignment:

- **Free and open Indo-Pacific:** India's Indo-Pacific approach aligns with the objective of the QUAD and AUKUS to promote a free and open Indo-Pacific region.
- **Defence and maritime security focus:** India's emphasis on security cooperation and maritime security aligns with the objectives of the QUAD and AUKUS.
- **China's aggression in the region:** India's Indo-Pacific approach aligns with the concerns of the QUAD and AUKUS regarding China's assertive actions in the Indo-Pacific region. All three entities share a common objective of maintaining a balance of power.
- **US alignment:** India's Indo-Pacific approach aligns with the US's strategic vision for the Indo-Pacific region. The QUAD and AUKUS are initiatives driven by the US, and India's alignment with these entities demonstrates its commitment to strategic partnerships and cooperation with the US.

Limitations:

- **Going over security:** While India's Indo-Pacific approach emphasizes multi-sectoral cooperation, the QUAD and AUKUS have a stronger focus on defence and military cooperation.
- **Regional focus:** India's Indo-Pacific approach encompasses a more regional focus limited to the Indian Ocean, whereas the QUAD and AUKUS have a broader focus on the Indo-Pacific as a whole with the Pacific side in focus.
- **Engagement with China-led groupings:** India's approach to engaging with China-led groupings, such as the Shanghai Cooperation Organization (SCO) and the BRICS, may differ from the positions of the QUAD and AUKUS.
- **ASEAN Centrality:** The ASEAN countries play a central role in the Indo-Pacific region, and their centrality gets tacit

approval from India's vision. However, QUAD-AUKUS do not recognise ASEAN centrality to the same degree.

Insta Links:

- [AUKUS Alliance](#)

Mains Links:

Q. The new tri-nation partnership AUKUS is aimed at countering China's ambitions in the Indo-Pacific region. Is it going to supersede the existing partnerships in the region? Discuss the strength and impact of AUKUS in the present scenario. (UPSC 2021)

30. INDIAN MIGRANTS TO GULF COUNTRIES

Context:

The article discusses the **tragic death of 49 migrant workers in a fire in Kuwait**, primarily caused by poor living conditions and employer negligence. It criticizes **Kuwait's inadequate enforcement of worker protections and the Kafala system**, which leaves migrants vulnerable by limiting their rights.

What is the Kafala System?

The Kafala system is a **sponsorship system used in some Middle Eastern countries**, including Kuwait, to regulate the employment of migrant workers. Under this system, a **migrant worker's legal residence and work permits are tied** to an individual employer or sponsor (Kafeel). This sponsor has **significant control over the worker's employment** and residency status, often leading to situations of exploitation and abuse, as workers may find it challenging to change jobs or leave abusive employers without risking deportation.

Status of Indian Workers in Gulf Countries:

1. There are around **8.88 million Indian Workers residing in six Gulf nations**, including the UAE, Saudi Arabia, Kuwait, Qatar, Oman, and Bahrain. Indians form the largest expatriate community in the region, **constituting approximately 30% of the total expatriate workforce**.
2. **Kerala has been a major contributor to the migrating workforce**, but recently, Uttar Pradesh and Bihar have seen an increase in migration to the Gulf.
3. **The migrating workforce** primarily consists of individuals aged between 20 and 40, with an increasing participation of women, particularly in the hospitality sector.
4. **Education levels vary, with many workers** having minimal formal schooling or vocational training.
5. **Around 70% of Indian migrants in the GCC are blue-collar workers**, contributing to various sectors in the region.

Diaspora can be a tool for advancing national interests:

1. **Soft power ambassadors**: The Indian diaspora serves as unofficial global ambassadors, showcasing India's rich culture, diverse languages, and artistic heritage.
 - **Bollywood's** international reach, the popularity of festivals like **Diwali**, and the success of Indian **cuisine** worldwide are testaments to their soft power influence.
2. **Knowledge and expertise transfer**: India boasts a highly skilled diaspora in fields like technology, medicine, and finance.
3. **Economic catalysts**: India saw the highest amount of **remittance** inflows in the world in **2023 at USD 125 billion**, which are a crucial lifeline for the Indian economy.
4. **Political lobbying and advocacy**: The Indian diaspora actively lobbies for India's interests in foreign policy issues like trade agreements and international aid distribution.
5. **Cultural exchange**: The diaspora acts as a bridge between India and the world, fostering cultural exchange and networking opportunities.
 - Events like **Pravasi Bharatiya Divas** strengthen this connection.

Migrant workers in GCC States are vulnerable due to:

1. **Dependence on Employers**: The Kafala system ties visas to employers, leaving workers reliant on them for housing, food, and transportation.
2. **Low Wages**: Workers often earn insufficient wages, leading to financial insecurity.
3. **Poor Living Conditions**: Workers reside in crowded and unsafe accommodations, as seen in the Mangaf fire incident.
4. **Limited Rights**: GCC states prohibit labour organizing, depriving workers of the ability to demand better conditions.
5. **Family Separation**: High minimum salary requirements prevent low-income workers from sponsoring family members, leading to family separation.

6. **Labour Exploitation:** Low-skilled workers face exploitation through withheld pay and inadequate conditions.
7. **Recruitment Abuses:** Agents charge high fees and alter contracts, risking passport confiscation.
8. **Legal Vulnerabilities:** Visa restrictions and the kafala system limit migrants’ rights and expose them to deportation threats.
9. **Poor Living Conditions:** Overcrowded and unsafe accommodations impact migrants’ health.
10. **Data Gaps:** Lack of data hinders addressing migrant issues effectively.
11. **Legal Hurdles:** Complex legal procedures and lack of aid worsen migrants’ plight.
12. **Cultural Barriers:** Language and cultural differences hinder integration and support access.
13. **Mental Health Struggles:** Migration stress leads to mental health issues.

Government Initiatives:

Initiative	Description
Emigration Act	The Emigration Act of 1983 regulates emigration and mandates the registration of recruitment agencies to ensure adherence to emigration procedures.
E-Migrate System	An online platform enabling skilled and semi-skilled workers to obtain emigration clearances and monitor immigration status, preventing exploitation by unregistered agents.
Labor Mobility Partnerships	India has signed agreements with GCC nations to enhance worker protection , covering employment contracts, labour policies, and rights.
Pre-Departure Orientation Programs	PDOS aims to enhance the soft skills of migrants , especially in the Gulf and Malaysia, educating them on destination country culture, laws, and customs.
Indian Community Welfare Fund	ICWF provides financial aid to distressed Indian workers abroad for repatriation, legal assistance, shelter, and medical needs.
Indian Workers Resource Centre	Set up in Dubai and approved for four additional locations, IWRCs offer guidance and counselling on various issues concerning overseas Indian workers.
Awareness Campaign	The ‘Surakshit Jaaye Prasikshit Jaaye’ campaign promotes safe and legal migration among prospective migrants.

Conclusion:

India’s global diaspora presents a unique opportunity for the nation to expand its influence and soft power. While limitations exist, careful navigation and collaboration can transform them into valuable partners in advancing India’s interests, as seen in the institutionalisation of **“diaspora diplomacy”** under PM Modi.

Insta Links:

- [Indian Diaspora: The roots of global success](#)

Mains Link: UPSC 2017

Q. Indian Diaspora has an important role to play in Southeast Asian countries’ economies and societies. Appraise the role of the Indian Diaspora in South-East Asia in this context. (10M)

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

31. FINANCIAL ACTION TASK FORCE (FATF) AND MUTUAL EVALUATION REPORT

Context:

The **Mutual Evaluation Report of India**, adopted at the **FATF** plenary in Singapore from June 26 to 28, places India in the **“regular follow-up”** category, a status shared by only four other G-20 countries. This distinction highlights India’s significant **progress in combating money laundering (ML) and terrorist financing (TF)**.

About Financial Action Task Force (FATF):

1. **FATF** is an inter-governmental policy-making and standard-setting body dedicated to **combating money laundering and terrorist financing**.
2. **Objective:** To establish international standards, and to develop and promote policies, both at national and international levels, to combat money laundering and the financing of terrorism.
3. **Origin:** It was established in 1989 **during the G7 Summit** in Paris to develop policies against money laundering. **In 2001** its mandate **expanded to include terrorism financing**.

4. **Headquarters:** Paris, France.

5. **FATF members include 39 countries**, including the United States, India, China, Saudi Arabia, Britain, Germany, France, and.



Financial Action Task Force (FATF)



Context: FATF suspends Russia's membership over Ukraine war

About FATF

FATF (est. in 1989 on the initiative of G7, HQ: OECD headquarters in Paris) is an intergovernmental organisation to develop policies to combat money laundering, combat terrorism financing and counter the financing of proliferation of Weapons of Mass Destruction (WMD).

- It sets **Global anti-money laundering (AML)** and **Counter-terrorist financing (CFT)** standards.



FATF is a 39-member body. India became a full member of FATF in 2010

Black List :

It is issued to list countries which are found to be non-cooperative in the global fight against money laundering and terrorist financing.

e.g. Myanmar along with Iran and North Korea

Grey List :

It serves as a warning for countries to be compliant to the directions else face risk of blacklisting.

e.g. UAE, Nigeria, Turkey, Jordan, South Africa and 20 other nations are in Grey List

The countries on Grey/Black list face:

- **Economic sanctions** e.g. from IMF, World Bank, ADB etc.
- **Issues in getting credit/loans**
- **Sanctions on international trade**
- **International boycott**

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FATF Plenary is the decision making body of the FATF. It meets three times per year— in February, June and October

Mutual Evaluation Report of FATF:

1. **The mutual evaluation report** is an assessment of a country's measures to combat money laundering, financing of terrorism and proliferation of weapons of mass destruction
2. The **reports are peer reviews**, where members from different countries assess another country.
3. During a mutual evaluation, the **assessed country must demonstrate that it has an effective framework** to protect the financial system from abuse.
4. **The FATF conducts peer reviews** of each member on an ongoing basis to assess levels of implementation of the FATF Recommendations, providing an in-depth description and analysis of each country's system for preventing criminal abuse of the financial system.

Mutual Evaluations have two main components:

1. **Effectiveness:** The most important part of a mutual evaluation is a country’s effectiveness ratings. During this visit, the **assessment team will require evidence** that demonstrates that the assessed country’s measures are working and delivering the right results.
2. **Compliance:** The assessed country must **provide information on the laws, regulations** and any other legal instruments it has in place to combat money laundering and the financing of terrorism and proliferation.

FATF has 2 types of lists:

1. **Black List:** Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put on the blacklist. These countries support terror funding and money laundering activities. The FATF revises the blacklist regularly, adding or deleting entries. Three countries **North Korea, Iran, and Myanmar** are currently in FATF’s blacklist.
2. **Grey List:** Countries that are considered a **safe haven for supporting terror funding** and money laundering are put on the FATF grey list. This inclusion **serves as a warning** to the country that it may enter the blacklist.

Consequences of being on the FATF blacklist:

1. **No financial aid** is given to them by the International Monetary Fund (IMF), the World Bank, the Asian Development Bank (ADB) and the European Union (EU).
2. They also face a number of international economic and **financial restrictions and sanctions..**
3. In addition to economic consequences, Black- and Grey-Listing **damages a country’s reputation** and reduces its international standing.

GENERAL STUDIES – 3

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

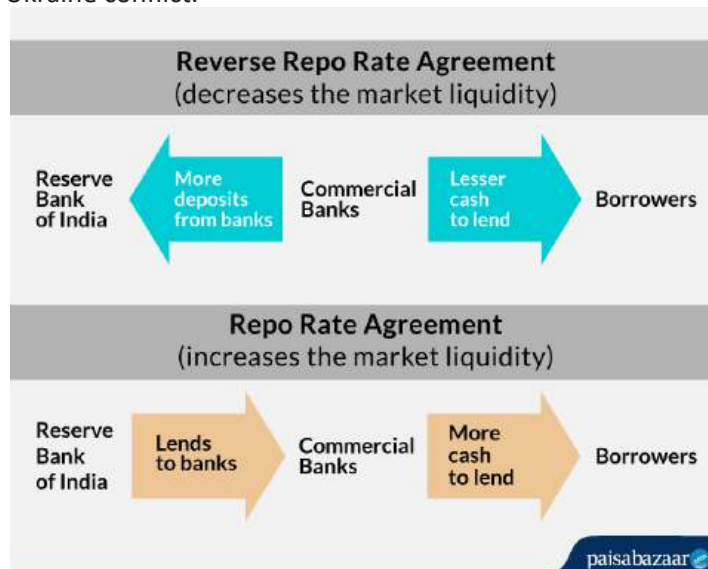
1. RBI HOLDS REPO RATE STEADY

Context:

The **Reserve Bank of India (RBI)** has refrained from cutting the repo rate despite stable inflation rates. The repo rate, which influences loan EMIs, has **remained unchanged since February 2023.**

What is the Repo Rate and who maintains it?

- The repo rate is the interest **rate at which the RBI lends money to commercial banks.**
- It impacts economic activity: a lower rate stimulates borrowing and spending, while a higher rate discourages it.
- **The RBI’s monetary policy aims to maintain price stability,** target a 4% inflation rate, and promote economic growth by **adjusting the repo rate accordingly.**
- Lowering the rate **stimulates borrowing post-pandemic,** while raising it curbs excessive spending during inflationary periods like the Russia-Ukraine conflict.



Other Tools for Controlling Interest rates

- Open Market Operations (OMO):** The RBI buys or sells government securities to adjust money supply and interest rates.
- Cash Reserve Ratio (CRR):** The percentage of deposits banks must hold with the RBI, influencing their lending capacity.
- Statutory Liquidity Ratio (SLR):** The percentage of deposits banks must invest in government securities, also affecting liquidity and interest rates.

Reasons for Not Cutting Interest Rates:

Reasons	Description
1) Sticky Inflation:	Despite a gradual decline, inflation hasn't reached the 4% target since January 2021, hovering around 5% in the first four months of 2024.
2) Commitment to Durable Inflation Targeting:	The RBI aims for sustained inflation around 4% , not just occasional dips below this level.
3) Strong Economic Growth:	India's GDP growth rate has been robust, with forecasts revised upwards to 7.2% for the current financial year , suggesting no urgent need for rate cuts to stimulate activity.
4) Fiscal Deficit Concerns:	The RBI's decision may be influenced by the forthcoming Union Budget and government borrowing plans , which could impact inflation or interest rates.

Ever Wondered!?

What is sticky Inflation?

- Sticky inflation refers to a **situation where inflation rates remain relatively high or stable over time, despite changes in economic conditions or monetary policy.***
- This phenomenon is characterized by a **slow decline in inflation rates and resistance to central bank efforts to lower them through measures like interest rate cuts.***

Understanding the Impact of High Interest Rates:

Positives:

- Taming Inflation:** High rates discourage borrowing and spending, reducing the money supply and easing inflationary pressures.
- Financial Stability:** Attract foreign investments, strengthening the rupee and foreign exchange reserves, boosting financial stability.
 - E.g. India's foreign exchange reserves surged past \$600 billion in 2023 amidst

high interest rates, providing a cushion against global uncertainties.

- Promoting Savings:** Higher interest rates on deposits **incentivize saving, increasing domestic capital availability for investment and growth.**
 - E.g. Fixed deposit rates above 7% in India have encouraged individuals to save more, leading to **higher bank deposits.**
- Curbing Asset Bubbles:** Discourage **excessive speculation in assets** like real estate and stocks, promoting financial market stability.
 - Example: **High interest rates during 2010-11** helped cool down the overheating real estate market in India, **preventing a potential bubble.**
- Encouraging Financial Discipline:** High rates promote prudent borrowing and lending practices among businesses and individuals, **reducing risk-taking and defaults.**

Negatives:

- Slower Economic Growth:** Expensive borrowing can **dampen investment and consumer spending**, potentially slowing economic growth.
- Increased Debt Burden:** Existing borrowers face higher interest payments, straining finances and **potentially leading to defaults.**
- Impact on Investment:** High rates can discourage investments in key sectors like **infrastructure and manufacturing, hindering long-term growth.**
- Pressure on Businesses:** High borrowing costs can squeeze profit margins and hamper business expansion plans, potentially **impacting job creation.** E.g. **Small and medium enterprises (SMEs)** often face challenges in **accessing credit at high interest rates.**
- Impact on Consumer Spending:** High interest rates on credit cards and personal loans can **reduce discretionary spending, impacting retail sales and overall consumption.** E.g. High interest rates on auto loans have led to a **slowdown in car sales in India.**
- Currency Appreciation:** High interest rates can **attract foreign capital, leading to currency appreciation, which can hurt export competitiveness.** E.g. The Indian rupee's appreciation in 2023 due to high interest rates posed challenges for **export-oriented sectors like textiles and IT.**

Conclusion

The RBI's decision to maintain high interest rates reflects its efforts to **balance inflation control with growth** considerations. It will continue to **monitor economic data and adjust rates** as needed to achieve a harmonious outcome for the Indian economy.

Other steps announced by RBI in this MPC Meeting:

- Rationalization of Export and Import regulations** under the Foreign Exchange Management Act (1999) to boost ease of doing business.
- Establishment of a Digital Payments Intelligence Platform (DPIP)** using advanced technology to combat payment fraud.

3. **Formation of a committee chaired by A.P. Hota** to explore setting up a digital public infrastructure for DPIIP.
4. **Integration of UPI Lite into the e-mandate framework** with an auto-replenishment feature for the UPI Lite wallet.
5. **Revision of bulk deposit definition to include Single Rupee term deposits of ₹3 crore** and above for Scheduled Commercial Banks (excluding Regional Rural Banks(RRBs)) and Small Finance Banks. For Local Area Banks, the threshold is ₹1 crore and above as applicable for RRBs.

About MPC:

The **Monetary Policy Committee (MPC)**, established under the **amended RBI Act of 1934**, comprises **six members**: three from the RBI and three appointed by the government. It decides the policy repo rate aimed at meeting the inflation target. Each member holds one vote, with the Governor having a casting vote in case of a tie.

Insta Links:

- [Variable Rate Repo \(VRR\)](#)
- [What is the RBI's MPC?](#)

Mains Link:

Q. Do you agree with the view that steady GDP growth and low inflation have left the Indian economy in good shape? Give reasons in support of your arguments. (UPSC 2019)

Prelims Link:

Q. Which of the following statements is/are correct regarding the Monetary Policy Committee (MPC)? (UPSC 2017)

1. It decides the RBI's benchmark interest rates.
2. It is a 12-member body including the Governor of RBI and is reconstituted every year.
3. It functions under the chairmanship of the Union Finance Minister.

Select the correct answer using the code given below:

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

Ans: (a)

Q. If the RBI decides to adopt an expansionist monetary policy, which of the following would it not do? (UPSC 2020)

1. Cut and optimize the Statutory Liquidity Ratio
2. Increase the Marginal Standing Facility Rate
3. Cut the Bank Rate and Repo Rate

Select the correct answer using the code given below:

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

Ans: (b)

2. REFORMS NEEDED FOR INDIA TO BECOME A DEVELOPED COUNTRY

Context:

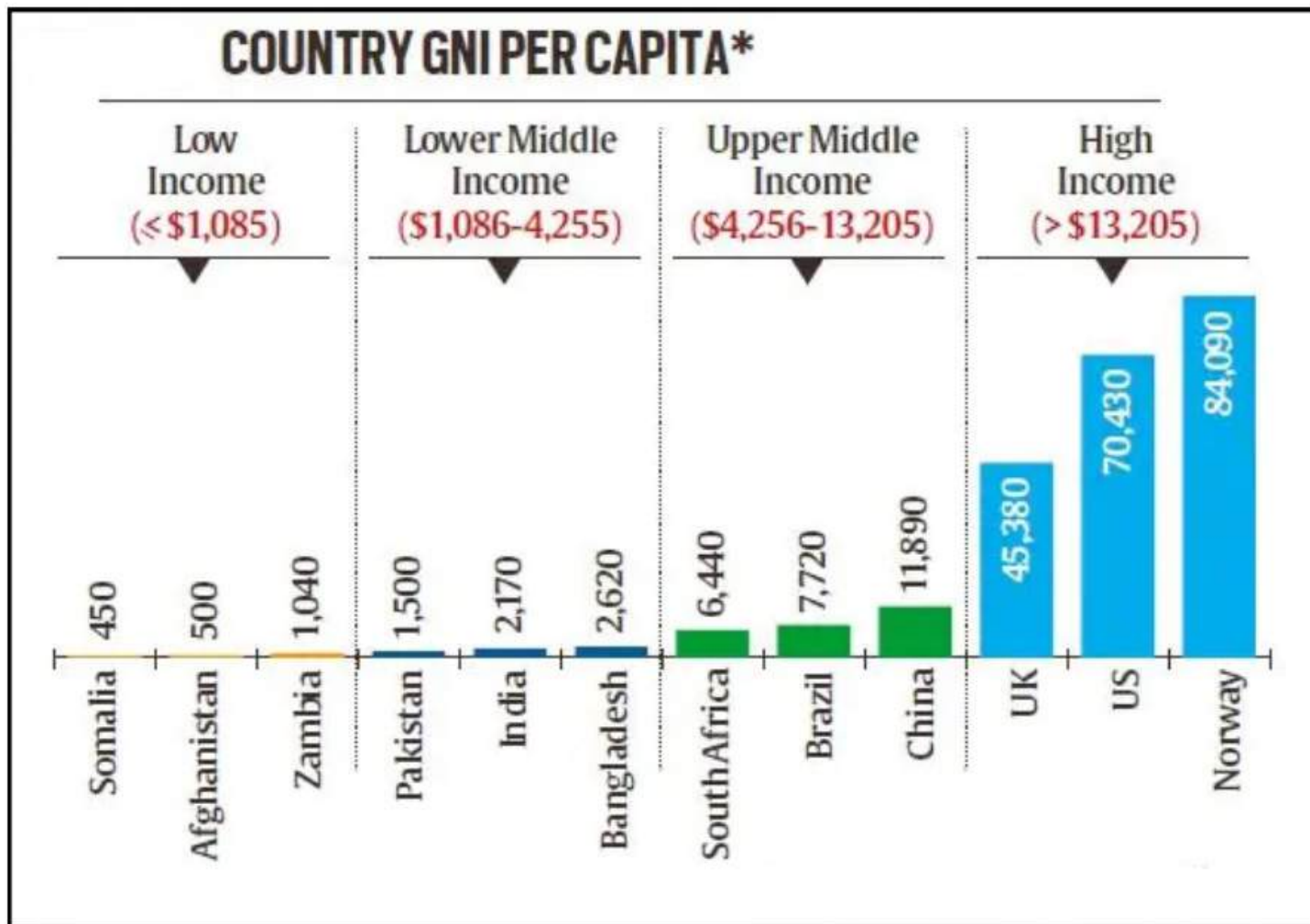
India aims to become **a developed country by 2047**. This will require a **7.5% annual growth in per capita income and a 9% GDP growth**. The [article](#) highlights the reforms needed.

What is a developed country?

A developed country is characterized by a mature and advanced economy with high levels of **industrialization, technological infrastructure, and overall societal well-being**. These countries are **distinguished from developing nations**, which are still progressing economically and socially. India, despite being the **world's fifth-largest economy** with a **GDP of 3.42 lakh crores USD**, is currently classified as a developing nation.

Key characteristics of a developed country:

Economic Factors	Social and Human Development Factors	Technological and Innovation
High per capita income (USD 12,000 - 25,000+)	Countries with an HDI score above 0.8 are considered developed	Advanced technological infrastructure
Diversified industrial and service sectors	High levels of education and literacy and Access to quality healthcare and social services	Strong emphasis on R&D
Robust infrastructure (transport, communication, utilities)	Low infant mortality and high life expectancy	High levels of innovation and productivity
Stable and efficient financial markets	Robust legal and political institutions with democratic governance	



Where does India Stand?

India lags behind both developed and some developing countries. While it is the fifth largest economy by GDP, its **per capita income is** significantly lower than China’s and the UK’s.

India’s achievement since Independence:

Area	Achievements
GDP	India’s GDP rose from Rs 2.79 lakh crore in 1950-51 to an estimated Rs about 280 lakh crore currently.
Forex	India’s foreign exchange reserves increased from Rs 911 crore in 1950-51 to over \$650 billion USD currently. India has the sixth-largest forex reserves in the world.
Food Production	Foodgrain production has grown from 50.8 million tonnes in 1950-51 to over 329 million tonnes currently.
Literacy Rate	The literacy rate improved from 18.3% in 1951 to 78%. Female literacy rate increased from 8.9% to over 70%.

Major Challenges with India’s Goal of a Developed Economy

Category	Issues	Details
Economic Growth	Jobless Growth	Despite 7.8% economic growth in FY 2023–24, job creation remains insufficient.
	Agricultural Employment	44% of the workforce is in low-productivity agriculture, contributing only 15% to GDP.
	Job Creation Needs	115 million jobs are needed by 2030 to meet the rising workforce.
Education and Skills	Poverty-Education-Skill Trap	Poor primary and secondary education limits cognitive development and higher education benefits.
	Skills Shortage	150 million skilled workers are needed; nearly half of graduates are unemployable (India Skills Report 2021).
	Education System	Not adapting quickly enough to industry demands despite the National Education Policy.
Public Debt	High Public Debt	Public debt at 81.9% of GDP raises fiscal sustainability concerns, crowding out private investment.
Income Inequality	Income Disparity	22.6% of national income went to the top 1% in 2022-23, hindering inclusive growth.
	HDI Ranking	India’s HDI score in 2022 was 0.644 , placing it at 134th out of 192 countries.
Rural-Urban Divide	Unbalanced Development	Urban centres grow economically, while rural areas suffer from poverty and lack of infrastructure.
	Potential Social Unrest	Neglecting rural development could lead to social unrest.
Climate Change	Vulnerabilities	Environmental degradation impacts health and undermines growth sustainability.
	Economic Risk	Up to 4.5% of India’s GDP could be at risk by 2030 due to climate change (RBI).
Infrastructure	Deficit and Financing Challenges	The infrastructure gap in transportation, power, and urban sectors is estimated at USD 1.5 trillion (World Bank).
	Project Delays	Issues with land acquisition, environmental clearances, and regulatory hurdles cause delays and cost overruns.

Major Advantages of India (Towards Becoming a Developed Economy)

- Services Sector:** India’s services sector accounts for over 50% of GDP, offering high-value jobs and attracting foreign investment.
- Demographic Dividend:** India’s young population (median age of **28.2 years** in 2023) presents a vast human capital pool for economic growth if properly skilled and employed.
- Government Initiatives:** E.g., The Pradhan Mantri Gati Shakti National Master Plan drive infrastructure development, enhancing efficiency and economic activity.
- Digital Transformation and Startup Ecosystem:** Digital India Initiative and Unified Payment Interface democratization drive digital revolution, with 8% year-on-year internet penetration growth in 2023.
- Economic Growth:** Despite global uncertainties, India’s domestic demand shows resilience, with an expected over 7% real GDP growth in 2024-25.

What should be done?

- Sound Economy: Focus on sustained fiscal deficit reduction**, targeting **4.5%** of GDP by 2025-26.
- Skill Development for Demographic Dividend:** Invest in vocational education and industry-aligned skills.
 - Tier II cities should be focused** as these new cities have the potential to **generate 70% of the country’s new jobs** and GDP over the next 20 years.
- Rural Development and Infrastructure:** Prioritize rural infrastructure and promote agro-processing.
- Affordable Healthcare and Prevention:** Increase healthcare spending and promote preventive measures.
- Innovative Infrastructure Financing:** Explore new financing models (e.g. Crowdfunding) and public-private partnerships.
- Technology and Innovation Promotion:** Boost R&D investment and establish innovation ecosystems.

7. **Blue Economy Harnessing:** Develop sustainable maritime activities and coastal infrastructure.
8. **Formalizing Informal Sector:** Implement portable social security and support startup hubs.
9. **Green Collar Jobs Creation:** Train workforce for green sectors and incentivize green employment.
10. **Enhance revenue productivity** of the tax system

Insta Links:

- [Reaping India’s demographic dividend](#)

Mains Link:

Q. “Industrial growth rate has lagged behind in the overall growth of Gross-Domestic-Product(GDP) in the post-reform period” Give reasons. How far the recent changes in Industrial Policy capable of increasing the industrial growth rate? (UPSC 2017)

Q.2 Normally countries shift from agriculture to industry and then later to services, but India shifted directly from agriculture to services. What are the reasons for the huge growth of services vis-a-vis the industry in the country? Can India become a developed country without a strong industrial base? (UPSC 2014)

Prelims Links:

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

- (a) Poverty rates vary from State to State
- (b) Price levels vary from State to State
- (c) Gross State Product varies from State to State
- (d) Quality of public distribution varies from State to State

Ans: (b)

Q. Increase in absolute and per capita real GNP does not connote a higher level of economic development if (UPSC 2018)

- (a) industrial output fails to keep pace with agricultural output.
- (b) agricultural output fails to keep pace with industrial output.
- (c) poverty and unemployment increase.
- (d) imports grow faster than exports.

Ans: (c)

3. 7 YEARS OF GST: BALANCING TECH & TRANSFORMATION

Context:

After seven years, the **Goods and Services Tax (GST)** has proven to be a game-changer for India’s digital economy. This tech-driven tax system has **facilitated automation for both the government and businesses, moving towards the vision of “one nation, one tax.”**

About Goods and Services Tax (GST):

Types Of GST in India		Valid On	Collected By	<div style="background-color: red; color: white; padding: 5px; text-align: center;">VOTING STRENGTH</div> Centre 1/3 VOTE IN COUNCIL States 2/3 WEIGHT IN COUNCIL <div style="border: 2px solid red; border-radius: 50%; padding: 10px; text-align: center; margin-top: 10px;">DECISIONS NEED 75% VOTE SUPPORT</div>	<div style="background-color: red; color: white; padding: 5px; text-align: center;">GST COUNCIL</div> Chairperson Union finance minister <hr/> Other Member From Centre Minister of state for finance <hr/> Vice-chairperson One of the state finance ministers <hr/> Members State finance ministers
1	CGST (<i>Central Goods and Services Tax</i>)	<i>Intrastate</i>	Central Government		
2	SGST (<i>State Goods and Services Tax</i>)	<i>Intrastate</i>	State Government		
3	ITGST (<i>Integrated Goods and Services Tax</i>)	<i>Interstate</i>	Central Government		
4	UTGST (<i>Union Territory Goods and Services Tax</i>)	<i>Union Territory (UT)</i>	Union Territory (UT Government)		

- It is an **indirect tax** (not directly paid by customers to the government) that came into effect on July 1, 2017, as a

result of the **101st Amendment to the Indian Constitution**.

- It is imposed on both manufacturers and sellers of goods, as well as suppliers of services.
- For tax collection, it is divided into five tax slabs – **0%, 5%, 12%, 18%, and 28%**.

About GST Council:

- It is an **apex committee** to modifies, reconciles or makes recommendations to the Union and the States on GST, like the goods and services that may be subjected to or exempted from GST, model GST laws, etc.
- **Article 279A of the Indian Constitution** empowers the President of India to constitute a joint forum of the Centre and States called the GST Council.

Need for GST:

- **The inclusion of several indirect taxes** at various levels of the supply chain **hampered the Indian tax system**.
- **This resulted in a complicated and fragmented tax framework** that included excise duty, service tax, VAT, central sales tax (CST), and other taxes.
- These led to tax **cascading (tax on tax)**, raising the entire tax burden on goods and services.
- Hence, the primary goal of GST is –
 - **To simplify the tax system by substituting a single indirect tax for several indirect levies**
 - Eliminating tax cascading by establishing a uniform tax structure

Achievements of GST:

- **Revenue collection:**
 - **The Gross Goods and Services Tax (GST)** collections hit a record high in **April 2024 at Rs 2.10 lakh crore**.
- **A seamless market and digitised compliance:**
 - **Digital Infrastructure:** The GST Network (GSTN) streamlined registration, tax payments, and return filing for taxpayers.
 - **Enhanced Compliance:** GSTN's data analytics and automation (e.g., e-waybills, e-invoicing) improved compliance and tax evasion prevention.
- **Benefits for MSMEs:**
 - A simplified system with measures like **quarterly returns and relaxed GSTR-9C** requirements increased MSME registrations.
 - Improved access to credit accelerated MSME growth.
- **Unified Market and Competitiveness:**
 - Established a common market and eliminated tax cascading, boosting domestic and global competitiveness.
 - Removed entry taxes and checkpoints, ensuring smooth movement of goods, faster transit times, and reduced logistics costs.

Challenges still persisting:

- **Complexities** in return forms and the **ambiguity** surrounding tax rates and **classifications** of certain goods and services lead to **disputes and uncertainty**.
- **Combating tax fraud remained a priority**, with measures in place to ensure compliance and weed out fraudulent businesses.

Some areas that deserve attention are:

- **Commence taxation** of petroleum crude, high-speed diesel, petrol, natural gas and aviation turbine fuel and similarly, alcohol meant for human consumption;
- **Inclusion of other levies** such as electricity duty, stamp duty, etc;
- **Clarifying taxation of online gaming activities**, transactions involving cryptocurrency, etc.
- **The officials should also look into** rationalisation of the **tax rates (slabs); upgrading the law to deal with a digital world** and keep up with the various technological developments.

Conclusion:

- The implementation of GST has definitely been a success **but is still a new reform with the potential to witness phenomenal growth and harmonisation** in the coming years.
- **GST has shown immense promise**, reshaping the economy and driving digitization while also confronting challenges and fraud.

Insta Links:
Five years stronger

Mains Links:

Explain the rationale behind the Goods and Services Tax (Compensation to States) Act of 2017. How has COVID-19 impacted the GST compensation fund and created new federal tensions? (UPSC 2020)

Prelims Links: (UPSC 2017)

What is/are the most likely advantages of implementing ‘Goods and Services Tax (GST)’?

1. It will replace multiple taxes collected by multiple authorities and will thus create a single market in India.
2. It will drastically reduce the ‘Current Account Deficit’ of India and will enable it to increase its foreign exchange reserves.
3. It will enormously increase the growth and size of the economy of India and will enable it to overtake China in the near future.

Select the correct answer using the code given below:

1. 1 only
2. 2 and 3 only
3. 1 and 3 only
4. 1, 2 and 3

Ans: 1

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

4. REVAMPING INDIA’S FARMS: CHALLENGES AND SOLUTIONS

Context:

The farm sector faces the challenge of sharing growth gains sustainably, beyond just boosting productivity.

Significance of Agriculture Sector in Indian Economy:

Significance	Description
Contribution to GDP	Agriculture contributes around 15-16% to India’s Gross Domestic Product (GDP) , showcasing its pivotal role in economic growth and development.
Resilience during Covid-19	Despite economic downturns in other sectors during the COVID-19 pandemic, agriculture remained resilient, contributing 18.8% to Gross Value Added (GVA) in 2021-22.
Employment Generation	The farm sector employs over 45% of the country’s labour force , especially vital in rural areas where most engage in agricultural activities, according to the Periodic Labour Force Survey (PLFS) report for 2021-22.
Food Security	India’s agriculture sector plays a vital role in ensuring food security for its 1.3 billion population , producing staple crops like rice, wheat, pulses, and vegetables.
Foreign Exchange Earnings	Agricultural exports contribute significantly to foreign exchange earnings, surpassing USD 56 billion in 2021. India ranks as the largest producer of milk and pulses , and the second-largest producer of wheat and rice globally.
Raw Material Provider for Industries	Agriculture supplies raw materials for various industries such as cotton for textiles, sugarcane for sugar, and oilseeds for edible oils, fostering strong linkages within the economy and supporting the Ethanol Economy.
Strategic Significance	A robust agricultural sector reduces dependence on imports, ensuring food security, especially vital for a populous nation like India.

Current Major Challenges Related to India’s Agriculture Sector:

1. **Fragmented Landholdings:** **89.4%** of agricultural households own less than two hectares of land.
2. **Menace of Climate Change:** Erratic monsoon patterns and rising temperatures disrupt crop yields.
3. **Water Scarcity:** Over-exploitation of groundwater and inadequate irrigation infrastructure limit productivity.

4. **Market Inefficiencies and Price Fluctuations:** Lack of access to well-developed markets and fair pricing affects farmers. Middlemen and complex supply chains lead to price gaps.
5. **Inadequate Storage and Transportation Facilities:** Poor storage infrastructure and transportation networks result in post-harvest losses. **Around 74 million tonnes of food is** lost annually in India.
6. **Limited Access to Credit and Insurance:** Small farmers struggle to access affordable credit and crop insurance.
7. **Soil Degradation and Resource Depletion:** Overuse of chemical fertilizers and inadequate soil conservation practices lead to soil degradation.
8. **Inefficient Agriculture Policy:** Complex policies and ineffective implementation hinder progress. The gap between policy and reality is highlighted by controversies like Minimum Support Prices (MSPs).
9. **Stagnated Growth:** Despite employing a significant labour force, agriculture's contribution to GDP is low.

Agrarian Reforms role in driving Socio-Economic Change

1. **Land Redistribution:** Reforms like the **West Bengal Land Reforms Act** aimed to **redistribute land to landless farmers, reducing inequality and poverty** in rural areas.
2. **Improved Credit Access:** Initiatives like **Kisan Credit Cards** have enhanced farmers' access to credit, **boosting their purchasing power and stimulating rural economies.**
3. **Promotion of Farmer Cooperatives:** The establishment of **AMUL (Anand Milk Union Limited)** as a **co-operative model has empowered farmers, ensuring fair prices and market access.**
4. **Agricultural Insurance:** The **Pradhan Mantri Fasal Bima Yojana (PMFBY)** offers insurance against **crop failures, providing economic stability to farmers.**
5. **Direct Benefit Transfers (DBT):** Schemes like **PM-KISAN** provide **direct financial support to farmers, enhancing their economic status and reducing reliance on informal credit.**
6. **Rural Infrastructure Development:** Programs like the **Pradhan Mantri Gram Sadak Yojana (PMGSY)** have improved **rural infrastructure, facilitating better market access and socio-economic growth.**

Agrarian Reforms serves as a Pivotal tool for Agricultural Modernization

1. **Green Revolution:** Introduced in the **1960s**, it transformed India's agriculture through **high-yield crops and advanced farming techniques**, significantly increasing food production.
2. **Water Management:** Initiatives like the **Pradhan Mantri Krishi Sinchayee Yojana** focus on **efficient water use, and improving irrigation and crop yields.**
3. **Technological Advancements:** The introduction of **digital technologies** through the Digital India movement enhances **agricultural practices and informa-**

tion access.

4. **Crop Diversification:** Government schemes promote **diversification into high-value crops**, reducing dependency on traditional crops and increasing income.
5. **Organic Farming:** The **Paramparagat Krishi Vikas Yojana** encourages **organic farming**, reducing chemical usage and promoting **sustainable agriculture.**
6. **Skill Development:** Programs like **Skill India Mission** provide **agricultural training**, enhancing farming skills and **modernizing agricultural practices.**

Government Initiatives:

Initiative	Description
National Mission on Sustainable Agriculture	Aims to promote sustainable agriculture practices, and enhance soil health, and water efficiency.
Paramparagat Krishi Vikas Yojana (PKVY)	Promotes organic farming and supports farmers in adopting traditional farming methods.
Submission on Agro Forestry (SMAF)	Encourages the integration of trees into farming systems to enhance productivity and sustainability.
Rashtriya Krishi Vikas Yojana	Focuses on improving agricultural productivity and ensuring the development of the agricultural sector.
AgriStack	Digital platform to provide comprehensive information and services to farmers for better decision-making.
National e-Governance Plan in Agriculture (NeGP-A)	Aims to improve the efficiency and transparency of agricultural services through digital technology.
Pradhan Mantri Kisan Samman Nidhi	Provides financial assistance to farmers in the form of direct income support.
Agriculture Infrastructure Fund	Facilitates the creation of agricultural infrastructure to improve productivity and competitiveness.
World's largest grain storage plan	The plan aims to transform Primary Agricultural Credit Societies (PACS) into Multi-Service Societies. The pilot project, implemented in 11 states, focuses on creating agricultural infrastructure at the PACS level, including warehouses and processing units, through various government schemes.

The potential of AI in Agricultural Reforms:

1. **Precision Farming:** AI algorithms can **analyze soil data, weather patterns, and crop health** to tailor fertilizer and water application, **maximizing yields and minimizing waste.**
2. **Pest and Disease Control:** AI-powered **drones can survey fields**, identify early signs of infestations, and

recommend **targeted interventions, reducing crop losses and reliance on harmful pesticides.**

3. **Market Analytics:** AI can analyze market trends and predict prices, helping farmers choose **the right crops and negotiate better deals**, leading to improved income and reduced vulnerability.
4. **Automation and Labor Efficiency:** **AI-powered robots** can handle tedious tasks like **weeding and harvesting**, freeing up valuable time for farmers to focus on other aspects of their operations and potentially **alleviating the labour shortage in agriculture.**
5. **Climate Resilience:** AI models can **predict weather patterns** and advise farmers on adaptation strategies, making agriculture more resilient to climate change and extreme weather events.

Ever Wondered?

Can Crop diversification aid the ailing agri sector? - Yes!!

- **For farmers:**
 - It **increases crop portfolio** so that farmers are not dependent on a single crop to generate their income.
 - Farmers who plant different kinds of crops are able to tap into their regional markets and contribute to strengthening their **local economies.** This helps farms thrive and provides them with greater financial security.
- **Government:** Most of the Indian population suffers from **malnutrition.** Most of the girl children have anaemia. Including crops like pulses, oilseed, horticulture, and vegetable crops can improve socio-economic status by **adding quality to the food basket** ensuring **food safety and nutritional security.**
- **Environment;** - It makes farms more environmentally friendly. This is because planting a variety of crops makes the **soil healthier, along with reducing chemical use.**
- **Disease resistance:** The traditional way to grow crops is to plant a single cultivar in a given area. However, this results in entire fields that are susceptible to the same hazard, be it a **pest or disease.**
- **Availability of water ;** it promotes efficient use of water thereby reducing the demand for water for irrigation purposes.
- **Trade;** - India is one of the largest importers of pulses, oilseeds etc. and diversification of crops can potentially reduce India's import dependence thereby reducing the burden on exchequer.

Way Forward and Conclusion

To revitalize India's agriculture sector, **several measures can be adopted.** Implementing **agroecological intensification** methods **like permaculture and regenerative agriculture** can enhance biodiversity and resilience. Establishing **agricultural innovation** clusters fosters collaboration among research institutions, startups, and farmers. **Drone-based precision agriculture** improves efficiency and reduces resource wastage. Genetic editing techniques like **CRISPR-Cas9** offer precise crop improvements. **Public-private partnerships** in agricultural extension services can provide localized support. **Developing agri-logistics and cold chain infrastructure** minimizes post-harvest losses. A model agricultural policy can guide sustainable practices and empower farmers. **Placing agriculture marketing** in the Concurrent list and forming an inter-ministerial committee can ensure better oversight and responsiveness to market dynamics.

Insta Links:

- [rstv: the big picture- need for agricultural reforms](#)

Mains Links:

Q. How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered by science-based technologies? (USPC 2020)

Q. Given the vulnerability of Indian agriculture to vagaries of nature, discuss the need for crop insurance and bring out the salient features of the Pradhan Mantri Fasal Bima Yojana (PMFBY). (UPSC 2016)

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)

1. Working capital for maintenance of farm assets
2. Purchase of combine harvesters, tractors and mini trucks
3. Consumption requirements of farm households

4. Post-harvest expenses
5. Construction of family house and setting up of village cold storage facility

Select the correct answer using the code given below:

- (a) 1, 2 and 5 only
- (b) 1, 3 and 4 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4 and 5

Ans: (b)

Q. Consider the following statements: (UPSC 2017)

1. The nation-wide 'Soil Health Card Scheme' aims at expanding the cultivable area under irrigation.
2. Enabling the banks to assess the quantum of loans to be granted to farmers on the basis of soil quality.
3. Checking the overuse of fertilizers in farmlands.

Which of the above statements is/are correct?

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

Ans: (b)

6. **Impact of Extreme Weather:** Weather extremes have been a major driver of acute food insecurity, affecting over 72 million people in 18 countries.
7. **Record-breaking Temperatures:** May 2024 was the warmest May on record, continuing a trend of record-breaking monthly temperatures.
8. **Persistent Acute Food Insecurity:** Nearly 282 million people faced high levels of acute food insecurity in 2023, with extreme weather being a significant factor.

Other Impacts of climate change on the food system:

Aspect of Food System	Impact of Climate Change
Crop Production	<ol style="list-style-type: none"> 1. Alters growing conditions, affecting crop yields and quality. 2. Increased temperatures can lead to heat stress in crops. 3. Changes in precipitation patterns can result in droughts or floods. 4. Altered pest and disease dynamics affect crop health.
Food Availability	<ol style="list-style-type: none"> 1. Unpredictable weather patterns disrupt seasonal food availability 2. Extreme weather events can damage crops and disrupt supply chains 3. Reduced food availability can lead to price fluctuations and shortages.
Food Quality and Safety	<ol style="list-style-type: none"> 1. Altered climate conditions affect the nutritional content of crops. 2. Increased temperatures can lead to spoilage and food safety issues 3. Changes in water availability impact food processing and safety.
Food Security	<ol style="list-style-type: none"> 1. Climate-induced crop failures can lead to food insecurity 2. Vulnerable populations are disproportionately affected by food shortages 3. Migration and conflict may result from food-related stressors.
Food Distribution	<ol style="list-style-type: none"> 1. Transportation routes may be disrupted due to extreme weather events. 2. Increased energy costs for transportation impact food prices 3. Changes in trade patterns affect global food distribution.
Food Waste	<ol style="list-style-type: none"> 1. Climate change can exacerbate food waste due to spoilage from temperature fluctuations 2. Resource-intensive food production contributes to waste.
Ecosystem Disruption	<ol style="list-style-type: none"> 1. Climate change alters ecosystems and biodiversity, affecting pollinators and natural pest control 2. Loss of biodiversity can disrupt food production and the ecosystem

5. HEAT AND WATER CRISES: A GLOBAL FOOD SECURITY EMERGENCY

Context: The report "Global impacts of heat and water stress on food production and severe food insecurity," published in Scientific Reports, showed a **projected decline in food production by 2050 under various climate change scenarios.**

What is Food Insecurity? Food insecurity is the lack of reliable access to sufficient, affordable, and nutritious food. **Severe food insecurity** is when individuals frequently run out of food, go hungry, and lack the means to eat regularly.

Major Findings of the Report:

1. **Global Food Production Decline:** Heat and water stress could lead to a 6-14% decrease in global food production by 2050.
2. **Increase in Food Insecurity:** The number of people with severe food insecurity could rise by up to 1.36 billion by 2050 compared to 2020.
3. **Regional Food Production Decline:**
 - a. India: almost 16% decline
 - b. China: 22% decline
 - c. United States: about 12% decline
 - d. Africa: about 8-11% decline
 - e. Australia: about 14% decline
 - f. Central America: about 19% decline
4. **Shift in Food Trade:** Regions like China and ASEAN could become food importers by 2050.
5. **Food Price Increase:** Significant increases in food prices, especially under extreme warming scenarios and in regions with high water stress.

Solutions:

- **Importance of Adaptation:** Scaling up support, including finance, capacity-building, and technology transfer, is urgent to enhance adaptive capacity and reduce vulnerability.
- **Crop diversification:** Diversifying cropping patterns, particularly towards millets, pulses, and horticulture, for sustainable agriculture.
- **Adaptation Finance:** Multilateral banks, financial institutions, and the private sector should mobilize more resources for adaptation.
- **Multi-Pronged Approach:** Addressing the climate-hunger crisis involves creating resilient livelihoods, promoting climate-resilient food crops, empowering women, supporting small-holder farmers, and increasing knowledge about vulnerability and food security.
- **Sustainable Food Systems:** Sustainability should be integrated into production, value chains, and consumption.
 - **Cash transfers for sustainable agriculture** can be more effective than input subsidies.
- **Non-Agriculture Sector:** Labor-intensive manufacturing and services can reduce the pressure on agriculture, especially for **smallholders and informal workers**.
 - Strengthening rural MSMEs and the food processing sector is part of the solution.

Insta Links:

[Climate change and agriculture](#)

Mains Links:

What measures should India take to weather-proof its food security in the face of climate change?

[Topics: Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.](#)

6. A BLUEPRINT FOR BOOSTING INDIA'S EXPORTS

Context:

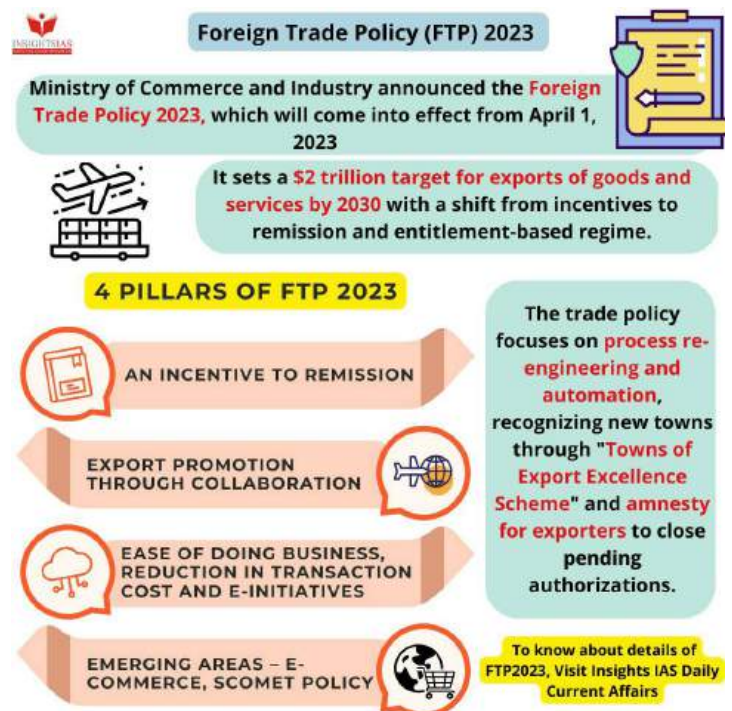
India's foreign trade, **valued at \$1.63 trillion in FY 2023-24, constituted 41%** of its GDP, highlighting its importance in the economy and job creation. Facing significant internal and external challenges, **the article gives suggestions** for the new government to boost trade and spur economic growth.

Reasons behind India's modest share in global merchandise trade:

1. **Historical Legacy:** India's historical focus on self-reliance and import substitution during the post-inde-

pendence era led to a closed economy with limited exposure to international trade.

- a. **Protectionist policies and trade barriers** hindered the development of a robust export-oriented manufacturing sector.
2. **Slow Liberalization Process:** India initiated economic liberalization reforms in 1991, opening up its economy to global trade and investment. However, the process was gradual, and certain sectors **remained shielded from international competition**.
 - a. Delayed liberalization **affected the competitiveness** of Indian industries
 3. **Ease of doing business:** Cumbersome bureaucratic procedures, complex regulations, and red tape have been persistent challenges for businesses in India. Such complexities increase the **cost of doing business and hinder export competitiveness**.
 4. **Low manufacturing exports:** India's exports remain dominated by primary products and resource-intensive sectors **like gems & jewellery**.
 - a. The **manufacturing sector lacks scale, tech advancement, and infrastructure competitiveness** to effectively integrate with global value chains and ramp up the exports of value-added products.
 5. **Infrastructure bottlenecks:** Poor transport connectivity, and inadequate port and shipping infrastructure drive supply chain costs and hurdles Indian exports price competitiveness.
 - a. **Suboptimal logistics account for ~14% of product value** for India, almost double that of developed economies.
 6. **Small producer firm size:** The overwhelming share of micro, small and medium firms in the Indian economy, **at over 90%**, prevents them from tapping the resources to boost technology usage and productively integrate into **cross-border supply chains**.



Foreign Trade Policy, 2023: The Union Ministry of Commerce and Industry launched the **Foreign Trade Policy 2023**, emphasizing its dynamic nature and responsiveness to emerging needs. In the following way, the policy intends to address the above issue:

- Incentive to Remission:** The policy continues to **support time-tested schemes** while emphasizing process re-engineering and automation for ease of doing business.
 - Duty exemption schemes for export production will transition to a rule-based IT system, eliminating manual interfaces and reducing fee structures.
- Export Promotion through Collaboration:** Recognition of new towns through the **“Towns of Export Excellence Scheme”** and exporters through the **“Status Holder Scheme”** encourages regional development and recognizes export performance.
 - The policy promotes partnerships with states and districts, designating specific areas as Export Hubs and facilitating grassroots trade development.
- Ease of Doing Business and E-Initiatives:** Process re-engineering and automation leverage automated IT systems for approvals, moving towards a technology-based facilitation regime.
 - A **one-time Amnesty Scheme** allows exporters to close old pending authorizations, providing a fresh start for compliance.
- Emerging Areas: E-Commerce and SCOMET Policy:** Special focus on facilitating e-commerce exports with raised caps and integration of courier and postal exports with ICEGATE.
 - Streamlining the SCOMET policy ensures a robust export control system, aligning with international treaties.
- Promotion of Capital Goods:** Rationalization and additions to the **Export Promotion Capital Goods (EPCG) Scheme**, including incentives for the dairy sector, green technology products, and the **Prime Minister Mega Integrated Textile Region and Apparel Parks (PM MITRA) scheme**.
- Advance Authorization Scheme:** Introduction of a Special Advance Authorization Scheme for the **Apparel and Clothing sector** to facilitate prompt execution of export orders.
 - Extension of benefits under the **Self-Ratification Scheme** for fixation of Input-Output Norms to 2-star and above status holders.
- Merchanting Trade:** Introduction of provisions for Merchanting trade, allowing the shipment of goods between foreign countries without touching Indian ports, fostering the development of Merchanting hubs.

Way forward:

- Policy Steps for Domestic Manufacturing:** Recent policy measures like corporate tax rate reduction, Production-Linked Incentive (PLI) schemes, rationalization of labour laws, and redefinition of MSMEs aim to boost domestic manufacturing.
 - These steps encourage size and scale for the domestic industry.
- Global Economic Scenario:** Global demand is rising with substantial stimulus packages, offering opportunities for India's exports.
 - Stimulus measures in the US and favourable growth forecasts globally create a conducive environment for export growth.
- A coordinated focus on exports** is crucial for India's economic recovery, especially considering constrained fiscal space and limited private consumption and investment.
- Integration into global value chains (GVCs)** presents an opportunity that should not be missed, necessitating strong policy actions across all levels of government.
- Exports must be the driving force for growth**, leveraging the global economic recovery and positioning India as a key player in international trade.

Conclusion

The Foreign Trade Policy 2023 reflects a forward-looking approach, blending continuity with dynamism to meet the evolving needs of the global trade landscape. With a focus on collaboration, ease of doing business, and emerging sectors like e-commerce, the policy aims to propel India's exports to new heights.

Insta Links:

- [Foreign Trade Policy \(FTP\) 2023 announced](#)

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

7. VADHAVAN PORT (INDIA'S FIRST MEGA PORT)

Context:

The **Vadhavan** port, **recently cleared by the Cabinet, will be India's first mega port, poised to significantly enhance** the country's sea-based trade.

Need:

Currently, India handles about **4.6 million TEUs (twenty-foot equivalent units) of transshipment cargo, with approximately 4.2 million TEUs** processed outside the country due to geographical challenges. India's **long continental shelf results in expansive beaches**, preventing large vessels from docking near the coast. This forces **most cargo to be offloaded at Colombo or transferred mid-sea**. The Vadhavan project aims to **address these issues, allowing larger ships to dock directly at Indian ports**.

Other major Challenges Faced by the Port Sector in India

- Infrastructure Deficiencies:** Many ports lack modern handling equipment and deep drafts. For instance, Kolkata Port faces draft limitations that restrict the entry of large vessels.
- Capacity Constraints:** Indian ports lack enough room for capacity addition, existing capacity is being stretched thin.
- Logistical Inefficiencies:** Poor hinterland connectivity and inadequate rail and road networks lead to high turnaround times.
- Regulatory and Bureaucratic Hurdles:** Lengthy customs and clearance processes delay cargo handling. Ports like Jawaharlal Nehru Port Trust (JNPT) face procedural delays impacting efficiency.
- Technological Lag:** Many ports are yet to fully adopt automation and advanced technologies.
- Environmental Concerns:** Port expansion projects often face opposition due to environmental impact assessments.

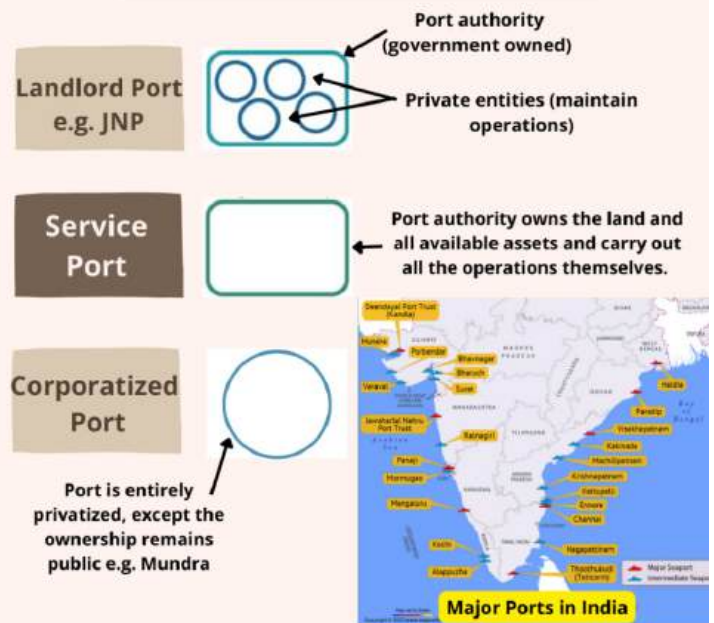
About Vadhavan Port:

The Vadhavan port will be **constructed through a Special Purpose Vehicle (SPV)** formed by the **Jawaharlal Nehru Port Authority and the Maharashtra Maritime Board**. It will be an **all-weather Greenfield deep draft** major port in Palghar District, aligned with the **PM Gati Shakti program**, and built on a **landlord-model through PPP**.

Key Features:

- Greenfield Infrastructure:** Developed on previously undeveloped land from scratch.
- Construction:** To be built in 2 phases with a total capacity of 23.2 million TEUs and a 20-meter draft to handle mega vessels.
- Landlord Model:** The Port authority acts as a regulatory body and landlord, with private companies managing operations.

Models of Port ownership



Significance of the Vadhavan Port Project

Economic Significance:

- Mega Port Status:** India's first true mega port with 300+ MMTPA capacity.
- Lower freight costs** per unit due to larger volumes.
- Ability to handle diverse cargo** types beyond dry and bulk goods.
- Promotes economies of agglomeration** by hosting suppliers, industrial complexes, and logistics firms.
- Competition among operators** reduces handling charges.
- Functions as a hub in a hub-and-spoke model**, managing global traffic and distributing cargo to smaller ports.

Trade Implications: Can handle projected **sea-based EXIM trade of \$1.6-2 trillion** by 2030; Reduces dependence on foreign ports for transshipment.

Strategic Importance: Key node for **IMEEC (India-Middle East-Europe Economic Corridor)** and **INSTC (International North-South Transport Corridor)**.

India's status in the Port sector:

- Major Ports:** Under the Union Ministry of Ports, Shipping, and Waterways. There are 12 functional major ports.
- Minor Ports:** Under State Maritime Boards/Governments. There are 200 non-major ports.
- India's trade heavily relies on maritime transport**, constituting over **95% by volume and 65% by value**.
- The **2023 World Bank LPI Report** is promising for Indian ports and logistics. In the "International Shipments" category, India has advanced from **the 44th to the 22nd global rank since 2014**.
- Container Port Performance Index (CPPI) 2023:** Nine Indian ports have found their position among

the top 100 global ports in CPPI in 2023

Initiatives taken by the government for the Port sector:

Initiative	Description
Sagarmala Initiative	Launched in 2015 to harness India's coastline and waterways for port-led industrialization.
Port Modernization and Expansion	Capacity at 12 major ports increased from 871 MMT in 2015 to 1,617 MMT in 2023.
Private Sector Participation	Encouragement of public-private partnerships (PPPs) in port operations . Brings investments, efficiency, and innovation.
New Captive Policy	Addresses renewal of concession periods, expansion scope, and dynamic business environment for port-dependent industries.
Harit Sagar Green Port Guidelines	Aims for safe, efficient, and sustainable ports with sound environmental practices.
Liner Shipping Reforms	Introduced in 2016 to make the port sector more competitive, reducing shipping costs and improving efficiency.
	India's average turnaround time (TRT) of only 0.9 days is among the best globally.
Legislative Changes	
Major Port Authorities Act, 2021	Grants greater autonomy to major ports.
Marine Aids to Navigation Act, 2021	Increases safety and efficiency in vessel traffic services and training.
Indian Vessels Act, 2021	Standardizes laws across all inland waterways.
Replacement of Indian Ports Act, 1908	Updating legislation to meet present-day requirements.
Ease of Doing Business	National Logistics Portal (Marine) and Sagar Setu app facilitate seamless goods movement and enhance ease of doing business.
FDI Policy	Allows 100% FDI under the automatic route for port-related projects and offers a 10-year tax holiday for port development.

India to Develop Six Mega Ports by 2047	The Ministry of Ports, Shipping, and Waterways has recently announced plans to develop six mega ports by 2047 . Four port clusters with capacities exceeding 300 MTPA include Cochin-Vizhinjam, Galathea South Bay, Chennai-Kamarajar-Cuddalore, and Paradip . Two clusters, Deendayal-Tuna Tekra and Jawaharlal Nehru-Vadhavan, will exceed 500 MTPA. These developments are part of the Maritime Amrit Kaal Vision, 2047
------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Way forward:

- 1. Integrated Connectivity:** Strengthening the integration of ports with railways, roadways, and inland waterways is essential to ensure seamless cargo movement from ports to hinterlands and vice versa.
- 2. Digital Transformation:** Implementation of advanced technologies like blockchain, Internet of Things (IoT), and artificial intelligence can streamline documentation, cargo tracking, and communication processes.
- 3. Investment Promotion:** Encourage private sector participation through well-structured public-private partnerships (PPPs) and investor-friendly policies.
- 4. Regional Connectivity:** Strengthen regional connectivity through strategic collaborations and agreements.
- Promoting transshipment and coastal shipping can enhance trade within the Indian Ocean region.
- 6. Safety and Security:** Ensure stringent safety and security measures at ports to prevent accidents, environmental hazards, and unauthorized activities. Compliance with international safety standards is vital.

Conclusion

The global recognition of the operational efficiencies of Indian ports and the Indian maritime sector is an important step in India's endeavour to become a global maritime power as envisaged in the [Maritime India Vision, 2030](#).

Insta Links:

- 3) [Draft Indian Port Bill](#)

Prelims Links:

Q. Recently, which of the following States has explored the possibility of constructing an artificial inland port to be connected to the sea by a long navigational channel? (UPSC 2016)

- Andhra Pradesh
- Chhattisgarh
- Karnataka
- Rajasthan

Ans: (d)

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.

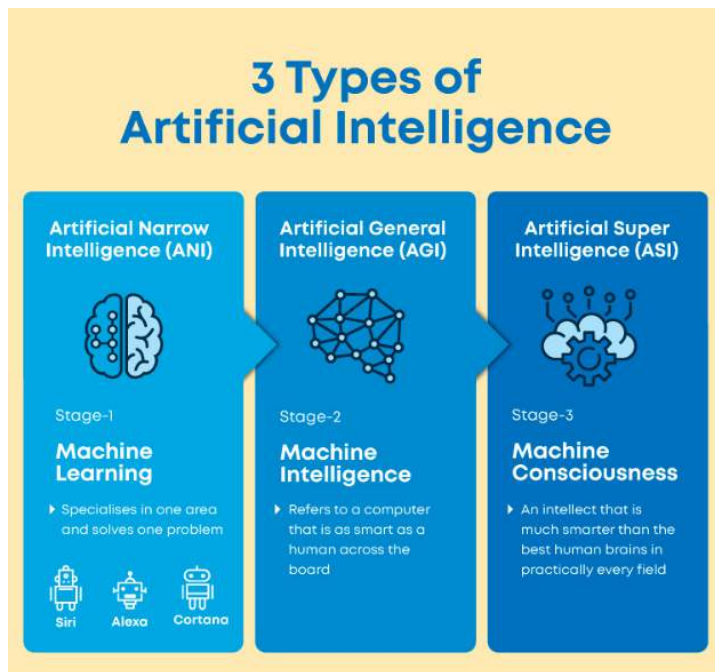
8. POTENTIAL OF ARTIFICIAL GENERAL INTELLIGENCE (AGI) FOR INDIA

Context:

Artificial general intelligence (AGI) holds the potential to revolutionize India’s trajectory.

What is Artificial general intelligence (AGI)?

Artificial General Intelligence (AGI) surpasses conventional AI in sophistication. Unlike AI, **AGI aims for a broad, human-like intelligence, encompassing reasoning, learning, and creativity.** It generalizes knowledge, engages in complex reasoning, and exhibits self-awareness and creativity. AGI seeks to **emulate human cognitive abilities** across diverse tasks and domains.



Applications of AGI:

Application	Example
Healthcare	AGI can analyze diverse medical data to offer personalized treatment options, improving outcomes in personalized medicine.
Finance and Business	AGI can automate tasks in finance , providing real-time analysis and accurate market predictions for better decision-making.

Education Sector	AGI can revolutionize adaptive learning platforms , offering personalized education tailored to individual student needs globally.
Space Exploration	AGI can operate autonomous systems for space exploration , analyze data from space missions, and contribute to new discoveries.
Military and Defense	AGI can enhance surveillance, military strategies, and combat systems for defence purposes.

Initiatives taken:

Initiative	Description
Global Partnership on Artificial Intelligence (GPAI)	India’s participation in an international initiative aimed at fostering collaboration among nations to promote the responsible development and use of artificial intelligence.
US India Artificial Intelligence Initiative	Collaborative efforts between India and the United States to advance research, development, and application of artificial intelligence technologies for mutual benefit.
Responsible Artificial Intelligence (AI) for Youth	An initiative aimed at educating and empowering youth to understand and responsibly utilize artificial intelligence technologies for societal benefit.
AIRAWAT (Artificial Intelligence Research, Analytics and Knowledge Assimilation Platform)	A platform facilitating research, analytics, and knowledge assimilation in the field of artificial intelligence, fostering innovation and collaboration among researchers, academia, and industry professionals.
IndiaAI Mission	Approved by the Indian Cabinet in March 2024 , this initiative involves significant funding over five years to develop AI infrastructure accessible to startups, academia, and industry, positioning India as a global AI leader.
Artificial Intelligence (AI) Act	The European Union has finalized the world’s first comprehensive law regulating artificial intelligence , known as the AI Act.

Concerns Related to AGI:

- 1. Existential Risk:** Concerns about AGI surpassing hu-

man intelligence and becoming excessively autonomous, posing existential risks that are challenging to anticipate and control.

2. **Job Losses and Unemployment:** Potentially substantial decrease in job opportunities due to AGI automation, leading to social and economic inequality and concentration of power among overseers.
3. **Human Oversight and Accountability:** Risks associated with AGI controlling information environments and influencing critical areas like elections, raising concerns about oversight and accountability.
4. **Environmental Concern:** Significant energy consumption and e-waste generation associated with developing AGI systems, highlighting environmental impact concerns.
5. **Ethical Dilemmas:** AGI advancement raises ethical challenges related to responsibility, confidentiality, and biased decision-making, requiring compliance with ethical norms to avoid unintended outcomes and inequalities.
6. **Loss of Basic Human Skills and Creativity:** Reduced human involvement in tasks may lead to a decline in creativity and innovation, with AGI potentially producing more innovative but less diverse outcomes compared to human works.

What should India do?

1. **Establish Dedicated AI Department:** Create a central authority to coordinate AI efforts, setting standards and policies aligned with national interests.
2. **Democratize Data Access:** Liberate and democratize access to vast datasets across sectors to stimulate AI development tailored to India's unique landscape.
3. **Build Strategic AI Ecosystem:** Develop AI capabilities in defence, drone technology, and cybersecurity, supporting the creation of companies in these fields.
4. **Launch AI Skilling Initiative:** Train 50 million people in AI usage skills and 1 million in advanced AI development skills, focusing on data literacy, ethics, and sector-specific applications.
5. **Foster Educational Partnerships:** Collaborate with universities and technical institutes to integrate AI-focused curricula and provide scalable access to industry training through online platforms.

Conclusion:

Moving forward, establishing robust ethical frameworks is paramount for the responsible development and deployment of AGI. Collaborative efforts involving **governments, industry stakeholders, and researchers** are necessary to create guidelines emphasizing safety, transparency, and accountability. **Prioritizing transparency and explainability** in AGI systems is crucial to ensure understandable and verifiable decision-making processes, fostering trust and minimizing the risk of unintended consequences.

Mains Link:

Q. What are the main socio-economic implications arising out of the development of IT industries in major cities of India? (UPSC 2022)

Q. "The emergence of the Fourth Industrial Revolution (Digital Revolution) has initiated e-Governance as an integral part of government". Discuss. (USPC 2020)

Prelims Link:

Q. 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)

9. UN DECLARES 2025 AS INTERNATIONAL YEAR OF QUANTUM SCIENCE AND TECH

Context:

UN has declared **2025 as International Year of Quantum Science and Tech**. Next year marks the **centenary of Werner Heisenberg's foundational paper on quantum mechanics**.

What is Quantum computing?

Quantum computing is a **new way of computing that uses the principles of quantum mechanics** to perform calculations. In traditional computing, **data is processed using bits, which are either a 0 or a 1**. But in quantum computing, the **data is processed using quantum bits or qubits, which can be both a 0 and a 1 at the same time**. This property of qubits is called **superposition**, which allows for multiple calculations to be performed simultaneously, making quantum computing exponentially faster than traditional computing for certain types of problems.

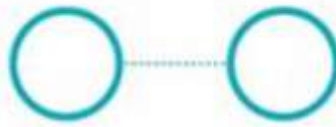
Foundational Concepts of Quantum Mechanics

1. **Wave-Particle Duality:** Small objects exhibit both particle and wave characteristics.
2. **Quantum Superposition:** Particles can exist in multiple states simultaneously until measured.
3. **Entanglement:** Linked particles affect each other regardless of distance.
4. **Heisenberg's Uncertainty Principle:** The position and speed of a particle cannot both be known with perfect accuracy simultaneously.



SUPERPOSITION

Superposition describes a particle's ability to exist across many possible states at the same time. So the state of a particle is best described as a "superposition" of all those possible states.



ENTANGLEMENT

Quantum entanglement refers to a situation in which two or more particles are linked in such a way that it is impossible for them to be described independently even if separated by a large distance.



OBSERVATION

Superposition and entanglement only exist as long as quantum particles are not observed or measured. "Observing" the quantum state yields information but results in the collapse of the system.

Potential socio-economic impacts of quantum computing:

Impact on society:

1. **Privacy and Data Security:** Quantum computing's ability to break current encryption raises **privacy and data security concerns**. Governments, businesses, and individuals must adapt by developing quantum-resistant encryption and secure communication protocols.
2. **Disruption of Industries and Jobs:** Quantum computing can disrupt industries like **finance, healthcare, and transportation**, introducing efficiency but also **potential job displacement**.
 - a. Workforce preparation is vital to mitigate negative employment impacts.
3. **Ethical Considerations:** Ethical concerns surrounding **responsible use, equitable access, and potential misuse** of quantum technology must be addressed.
4. **Digital Divide:** Widespread quantum computing may worsen the digital divide. Ensuring equitable access to resources and education is essential to prevent further social and economic disparities.

Economic impact

1. **Scientific advancements:** Quantum computing could accelerate scientific research by simulating complex quantum systems, **revolutionizing drug discovery, materials science, and climate modelling**.
2. **Faster data analysis:** Quantum computers excel at specific types of calculations, allowing for significantly faster data analysis. This speed boost is vital for addressing big data challenges, particularly those **involving large datasets** generated at high speeds.
3. **Enhanced machine learning:** Quantum computing enhances machine learning, optimizing algorithms efficiently, particularly in **computer vision for faster** and **more accurate image** and **video analysis**.
 - a. **Generative AI**, offers better **real-time recommendations**, benefiting driverless cars and digital public services.
4. **Optimization for complex problems:** Quantum computers can solve complex optimization problems much faster than classical computers. This capability is essential for tackling intricate **analytics challenges, resulting in more efficient solutions for complex systems**.
5. **Advancements in industrialization:** Quantum computing fuels Industry 4.0 and beyond, powering technologies like digital twins. It boosts the efficiency of **distributed computing, federated learning, IoT, blockchain, and more**, yielding higher-quality results.
 - a. For instance, adopting quantum tech could add **\$280-310 billion to India's economy by 2030**.
6. **Process efficiency in digital transformation:** Quantum computing's real-time data analysis capabilities can accelerate process automation within organizations.

Challenges Associated with Quantum Computing:

1. **Error Correction:** Develop effective error correction techniques, as quantum computers are susceptible to errors due to their inherent sensitivity.
2. **Cost of Implementation:** Quantum computers and their infrastructure are expensive to develop and maintain which may hinder widespread adoption, limiting access to quantum computing resources.
3. **Lack of Skilled Workforce:** There is a shortage of professionals with expertise in quantum computing which may impede the effective utilization of quantum technologies.

4. **Ethical and Security Concerns:** Addressing ethical considerations surrounding quantum computing, especially in fields like cryptography and AI.
 - a. **Ensuring responsible use and preventing malicious applications** to avoid potential security threats.
5. **Integration with Classical Systems:** Developing effective interfaces and integration mechanisms between quantum and classical computing systems.
 - a. **Seamless integration** is essential for practical applications in hybrid computing environments.
6. **Environmental Impact:** Quantum computers require **extremely low temperatures**, contributing to **high energy consumption**.
 - a. Addressing the environmental impact and energy efficiency of quantum computing systems is crucial for sustainable implementation.

Ethical Considerations of Quantum Computing:

1. **Misinformation and Bias:** Risk of AI algorithms amplifying biases, leading to unfair outcomes.
2. **Privacy Infringement:** Potential for more intrusive data analysis; robust privacy protection needed.
3. **Autonomous Weaponry:** Concerns about creating independent, life-or-death decision-making weapons.
4. **Societal Repercussions:** Potential disruptions in employment, economy, and social dynamics.
5. **Technical and Security Challenges:** Ethical issues related to decoherence, error correction, and security implications.

Government Initiatives:

Initiatives	Description
National Quantum Mission (2023)	To seed, nurture, and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology.
Quantum Enabled Science & Technology (QuEST)	A research program to build quantum capabilities.
Quantum Computing Applications Lab (QCAL)	To accelerate quantum computing-led research and development and enable new scientific discoveries.



Quantum Computing



Context: Union Cabinet has approved the National Quantum Mission (NQM)



Quantum computing uses quantum bits (qubits) that can be both 0 and 1 at the same time, allowing for multiple calculations to be performed simultaneously, making quantum computing exponentially faster than traditional computing for certain types of problems.

About National Quantum Mission

	Description
Objective	Develop and promote Quantum Technology in India
Timeframe	2023 – 2031 (8 years)
Major themes	<ul style="list-style-type: none"> • Quantum Computing: Develop physical qubit computers with a capacity ranging from 50-1000 qubits (to be completed within 3-8 years) • Quantum Communication: Develop secure satellite-based communication with a range of 3000 km and communication lines using Quantum Key Distribution over 2000 km (to be completed within 3-8 years) • Quantum Sensing and Metrology: Develop quantum sensors (magnetometers with high sensitivity in atomic clock systems) for Navigation, healthcare and diagnostics, defence, and energy sectors (to be completed within 8 years) • Quantum Material and Devices: Develop devices and materials (superconductors, novel semiconductor structures, and topological materials) for quantum technology (to be completed within 3-8 years)
Key Agencies Involved	Department of Science & Technology, Department of Atomic Energy, Department of Telecommunications, DRDO, ISRO
Other Aim	The Mission also aims to establish four thematic hubs (T-Hubs) at research institutes and R&D centres (based on above themes)
Significance	India will be among the top six leading nations (US, Canada, France, Finland, China and Austria.) involved in the research and development in quantum technologies.
Other programmes	National Mission for Quantum Technologies and Applications (NM-QTA); Quantum-Enabled Science & Technology (QuEST); C-DOT's Quantum Communication Lab and Quantum Key Distribution (QKD) solution.

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What Can Be Done to Overcome the Challenges?

1. **Quantum-Resistant Encryption:** Develop new encryption methods to secure data against quantum computers.
2. **Ethical Guidelines and International Regulations for Autonomous Systems:** Establish clear ethical guidelines and international regulations to prevent unintended consequences and ethical breaches.
3. **Ethical Frameworks for Converging Technologies:** Create frameworks to manage the ethical impact of merging technologies like quantum computing and AI, ensuring equitable benefit distribution.
4. **Transparent Communication and Collaboration in Quantum-Powered AI:** Promote transparent communication and collaboration to address security risks and ensure responsible development.

Conclusion

The government must prioritize quantum computing, as it relies on exploiting information assets both within and outside organizations in the long term. India has a significant opportunity to make strategic investments in research, development, and training to enhance its capability in this domain for the benefit of its citizens and the nation.

Insta Links:

[Quantum Computing](#)

Mains Links:

Q. What is quantum computing? Explain its applications and steps taken by India to promote quantum technologies in the country. (250 words)

Prelims Link:

Q. Which one of the following is the context in which the term “qubit” is mentioned?

- (a) Cloud Services
- (b) Quantum Computing
- (c) Visible Light Communication Technologies
- (d) Wireless Communication Technologies

Ans: B

10. GM CROPS: WEIGHING FOOD SECURITY AGAINST ENVIRONMENTAL IMPACT

Context:

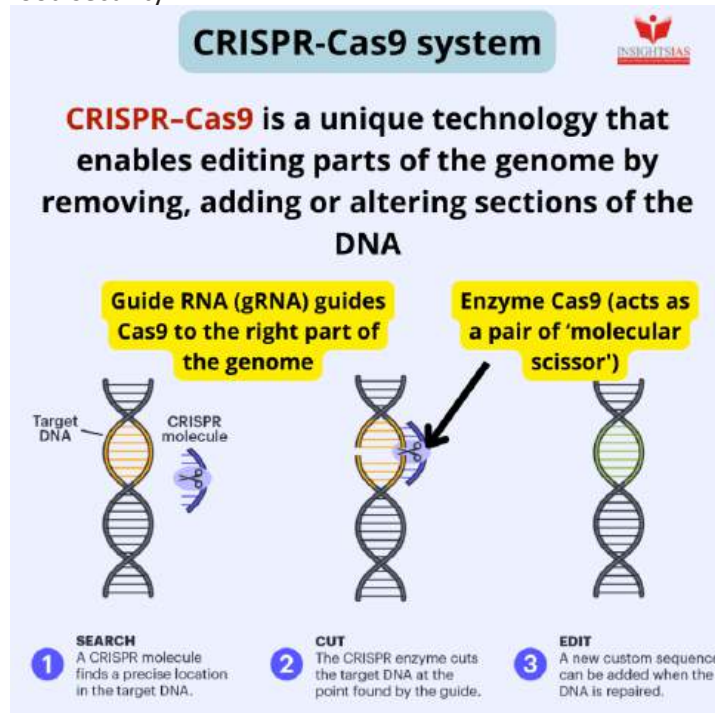
Genetically modified (GM) crops are touted as a solution for global food security, especially in the face of climate change. The current “gene revolution” uses **genetic editing** to improve crop resilience, aiming to support a growing population and combat climate-induced agricultural challenges.

What is a GM Crop?

A **GM or transgenic crop** is a plant that has a novel combination of genetic material obtained through the use of modern

biotechnology.

The new gene revolution, **driven by tools like CRISPR**, allows precise gene editing without introducing foreign genes. This technology helps develop new GM crop varieties, enhancing food security.



Examples:

1. **Optimized Photosynthesis:** Research projects are focusing on **optimizing photosynthesis in staple crops such as maize and rice**. This aims to improve their ability to convert sunlight, water, and carbon dioxide into energy, thereby enhancing yields and reducing atmospheric carbon.
2. **Drought-Tolerant Maize:** Scientists are developing drought-tolerant transgenic maize by incorporating **genes from a plant known as xerophyta viscosa**, which can tolerate severe dehydration up to 95%.
3. **Insect-Resistant Cowpea:** Australian scientists are **bioengineering cowpeas** to have built-in resistance to insect pests, crucial for protecting this important legume staple in Africa from crop failure

Status of GM Crop in India:

In India, **Bt cotton remains the sole GM crop approved for commercial cultivation**. As of 2022, the Genetic Engineering Appraisal Committee (GEAC) has granted environmental release approval for the **Mustard hybrid DMH-11**, though its implementation is pending a Supreme Court decision. Additionally, ongoing research and field trials are underway for several other crops including **chickpeas, pigeonpea, corn, and sugarcane**.

Regulations for GM Crop In India:

In India, **GM crop regulations are governed by the 1989 Rules under the Environment Protection Act (1986)**. The Genetic Engineering Appraisal Committee (GEAC) under the Ministry of Environment, Forest, and Climate Change

(MoEF&CC) handles the appraisal of GM crop proposals.

GM Crops role in enhanced yields and resilience:

- **Pest Resistance:** GM crops can be engineered to be more resistant to pests and diseases, which can lead to increased yields. This is important in a world where food security is a growing concern.
 - E.g. **Bt cotton**, engineered with a gene from the bacterium **Bacillus thuringiensis**, produces a protein toxic to certain pests.
- **Drought Tolerance:** they contain genes that enable the plant to withstand water scarcity. This characteristic enhances crop resilience in regions prone to drought, ensuring more consistent yields.
 - E.g. Drought-resistant **GM maize**
- **Nutritional Enhancement:** GM crops can be engineered to have higher levels of nutrients, such as vitamins and minerals. This can help to improve the health of people who consume these crops.
 - E.g. **Golden rice, fortified with beta-carotene**, addresses **vitamin A deficiency**.

Ecological and food safety concerns associated with GM crops:

- **Biodiversity Loss:** The cultivation of herbicide-tolerant GM crops can lead to the overuse of specific herbicides. This can result in the development of herbicide-resistant weeds, disrupting local ecosystems and reducing biodiversity.
- **Biosafety concerns:** They can reduce **species diversity**.
 - For example, **Insect-resistant plants** might harm insects that are not their intended target and thus result in the destruction of that particular species.
- **Cross-Pollination and Gene Flow:** GM crops, such as genetically modified canola, can crossbreed with wild relatives, potentially leading to the spread of modified genes in non-GM populations and affecting natural plant diversity.
- **Unintended Consequences:** The introduction of GM crops resistant to **specific pests** might inadvertently disrupt ecological balances by affecting **non-target species**, leading to unanticipated ecological consequences.

Food safety concerns:

- **Allergenicity:** Transfer of allergenic genes into GM crops could potentially introduce new allergens or amplify existing allergenic properties, **posing risks to sensitive individuals**.
- **Health Impacts:** Altered nutritional profiles in GM crops could impact human health in unforeseen ways. The **long-term effects** of consuming genetically modified foods need thorough investigation.
- **Resistance Development:** Over-reliance on certain GM traits can lead to the evolution of resistant pests or diseases, necessitating more **intensive chemical treatments** and posing risks to the environment and human health.

Way forward:

Recommendation	Description
Scientific Evidence-Based Decisions	Governments should base decisions on GM technologies on robust scientific evidence , thoroughly evaluating benefits and risks before implementation.
Cultivating an environment of openness and transparency	Open communication of scientific findings and regulatory processes is crucial to address genuine fears and build public trust.
Involving stakeholders	Participation of scientists, farmers, consumers, and environmentalists in regulatory protocols enhances decision legitimacy and fosters trust in GM technology development.
Precautionary principle	Given uncertainties over GM safety , adopting this principle suggests waiting for a broader scientific consensus to minimize risks before widespread implementation.
Policy frameworks for equitable benefits	Improving policies to address concerns such as pricing, and input costs, and ensuring equitable benefits for all stakeholders involved in GM cultivation.
Strong liability laws	Implementing robust laws to hold parties accountable for environmental hazards or unforeseen consequences from GM technologies encourages responsible practices.

Insta Links:

- [GM food and sustainable food production](#)

Mains Link:

Q. How can biotechnology help to improve the living standards of farmers? (UPSC 2019)

Prelims Link:

Q1. Other than resistance to pests, what are the prospects for which genetically engineered plants have been created? (UPSC 2012)

- To enable them to withstand drought
- To increase the nutritive value of the produce
- To enable them to grow and do photosynthesis in spaceships and space stations
- To increase their shelf life

Select the correct answer using the codes given below:

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

Ans: (c)

Q2. Bollgard I and Bollgard II technologies are mentioned in the context of (UPSC 2021)

- (a) clonal propagation of crop plants
- (b) developing genetically modified crop plants
- (c) production of plant growth substances
- (d) production of biofertilizers

Ans: (b)

11. GLOBAL TRANS-FAT ELIMINATION

Context:

WHO has published its fifth milestone report on global [trans-fat elimination](#), covering 2018-2023.

What are trans fatty acids?

TFA stands for trans fatty acids, commonly known as trans fats. These are a type of **unsaturated fat that can be found in small amounts in nature** but are primarily produced industrially. Industrial trans fats are created through a process called **hydrogenation**, where **hydrogen is added to liquid vegetable oils** to make them more solid. These fats are commonly used in **processed foods, such as baked goods**, snacks, and margarine, to improve texture, shelf life, and flavour stability.

WHO's recommendation for adults is to **limit consumption of trans fat to less than 1% of total energy intake**.

FATS, HEALTHY OR UNHEALTHY? THE FACTS!

Trans fats are a man made fat, saturated is natural. Both are Non essential fats. The US banned trans fats in June 2018

Omega 3 & 6 fatty acids are the only fats we need from our diet. They are found in seeds, nuts, beans, sea veg and some species of fish

TRANS FAT	SATURATED FAT	UNSATURATED FAT
<ul style="list-style-type: none"> FAST FOODS FROZEN PIZZA VEGETABLE OILS MARGARINE BAKED FOODS STORE SANDWICH PROCESSED FOODS 	<ul style="list-style-type: none"> BUTTER CHEESE RED MEAT PORK BAKED FOODS MILK COCONUT OIL 	<ul style="list-style-type: none"> AVOCADO FLAX MEAL WALNUTS SEA VEGETABLES HEMP SEEDS CHIA SEEDS OLIVES

*Experts estimate that for every 1 percent of energy that comes from trans fats you increase the risk of heart disease by 12 to 13 per cent

*Natural saturated fats found mostly in animal foods are controversial. But most experts agree that consuming large amounts raises the risk in developing many diseases

*Polyunsaturated fats are essential fats vital for brain function, muscle movement, vitamin & mineral absorption and inflammation

Key Highlights of the Report:

- By late 2023, **WHO's best-practice trans-fat elimination policies** were implemented in 53 nations, covering around 46% of the global population.
- **In India, approximately 4.63% of coronary heart disease** deaths are attributed to TFA intake.

Harmful Effects of Trans Fats:

Harmful Effects of Trans Fats	Description
Heart Disease	Raises total cholesterol and lowers HDL (good) cholesterol, increasing the risk of heart disease.
Obesity	Contributes to weight gain and obesity due to its adverse effects on metabolism.
Type 2 Diabetes	Increases the risk of developing insulin resistance and type 2 diabetes.
Metabolic Syndrome	This leads to conditions like high blood pressure, high blood sugar, excess abdominal fat, and abnormal cholesterol levels, raising the risk of heart attack and stroke.
Infertility	May negatively affect reproductive health and fertility.
Cancer	Associated with a higher risk of certain types of cancers.
Compromised Fetal Development	Can harm fetal development, leading to potential complications for the unborn baby.
Insulin Resistance	Impairs the body's ability to use insulin effectively, contributing to metabolic disorders.

Other Issues:

Trans fats **can harm brain function and the immune system**, lack nutritional value, strain healthcare systems due to associated health costs, and contribute significantly to obesity.

Challenges in Controlling TFA Usage:

1. **Lack of Awareness:** The public and industry lack knowledge about TFA harms.
2. **Regulatory Gaps:** Incomplete or inconsistent regulations across regions.
3. **Industry Resistance:** Pushback from food manufacturers due to cost and convenience.
4. **Monitoring and Enforcement:** Difficulty in ensuring compliance with regulations.
5. **Global Trade Dynamics:** Variability in international trade policies affects consistency.
6. **Cost of Reformulation:** High expenses involved in changing product recipes.
7. **Consumer Preferences:** Preference for taste and texture of TFA-containing foods.
8. **Inconsistent Policies:** Varied policies across countries complicate control efforts.

Initiatives to tackle Trans-Fats:

National Initiatives	Description
FSSAI “Trans Fat-Free” logo	Voluntary labelling promoting TFA-free products with TFA not exceeding 0.2g per 100g/ml .
“Heart Attack Re-wind” campaign	Mass media effort to eliminate industrial trans fats, part of the broader “Eat Right” campaign initiated in 2018.
Pledge by edible oil industries	Commitment to reduce salt, sugar, saturated fat, and trans-fat content by 2%
Swasth Bharat Yatra	Pan-India cyclothon under the “Eat Right” campaign to engage citizens on food safety and healthy diets.
Regulation of trans fats	FSSAI regulations to cap TFA in oils and fats to 2% by 2022, down from 5% previously allowed.
Eat Right Movement	Initiative to transform India’s food system for safe, healthy, and sustainable food under “Eat Right India”.
Green Purple initiative	Program promoting trans-fat-free cooking and food safety among chefs and food establishments.
Global Initiatives	
WHO “REPLACE” campaign	The global campaign to eliminate trans fats from industrially produced edible oils by 2023.
WHO Validation Programme for Trans Fat Elimination	Recognizes and supports countries in eliminating TFA, driving policy progress globally.

Key Recommendations of WHO report:

- A mandatory national limit of two grams of industrially produced trans-fat per 100 grams of total fat in all foods**
- Sub-regional bodies should pass mandatory TFA elimination policies binding on member states to facilitate trade and policy implementation.**
- Food manufacturers should voluntarily eliminate industrially produced TFA across their product lines, beyond complying with national policies.**

More measures to eliminate trans fats in food:

- Implement regulations:** Set limits on trans fats in food or ban partially hydrogenated oils.
- Increase public awareness:** Educate about health risks and how to avoid trans fats.
- Develop alternatives:** Research substitutes without health risks.
- Encourage reformulation:** Prompt food makers to reduce or remove trans fats.
- Promote healthy eating:** Advocate balanced diets

low in trans fats.

- Taxation:** Consider taxing trans-fat products.
- Incentives:** Reward low-trans fat food production.

Insta Links:

- [5 billion people globally are exposed to toxic trans-fat linked to heart disease](#)

Prelims Link:

Q. Regular intake of fresh fruits and vegetables is recommended in the diet since they are a good source of antioxidants. How do antioxidants help a person maintain health and promote longevity? (UPSC 2011)

- They activate the enzymes necessary for vitamin synthesis in the body and help prevent vitamin deficiency.
- They prevent excessive oxidation of Carbohydrates, fats and proteins in the body and avoid unnecessary wastage of energy.
- They neutralize the free radicals produced in the body during metabolism.
- They activate certain genes in the cells of the body and help delay the ageing process

Answer: C

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

12. STATE OF THE OCEAN REPORT 2024

Context:

Recently, **UNESCO’s State of Ocean Report 2024** was released

More about the State of Ocean Report:

The UNESCO State of Ocean Report 2024, initiated by the **Intergovernmental Oceanographic Commission (IOC-UNESCO)** during the **2022 United Nations Ocean Conference**, serves as a comprehensive overview of the ocean’s current condition. Its primary aim is to **track the progress of the UN Decade of Ocean Science for Sustainable Development (2021–2030)** and inspire efforts towards ensuring a sustainable future for our oceans.

Initially **introduced in 2022**, the report enlisted insights from over **100 marine science experts, covering critical topics** such as ocean acidification, pollution, and tsunami warnings. Released **annually on World Oceans Day (June 8)**, each edition of the report aligns with the **seven goals of the UN Ocean Decade**, aiming to foster global collaboration and action for the protection and preservation of our oceans.

Key Findings of the Report:

- Ocean Warming:** Rate doubled in 20 years; 2023 saw a significant increase; Hotspots above 2°C in the Mediterranean, Tropical Atlantic Ocean, and Southern Oceans

2. **Rising sea level:** Sea levels rising, with **ocean heat absorption contributing 40%**; Accelerated ice mass loss from Greenland and West Antarctica
3. **Declining Oxygen Levels:** The Ocean lost 2% oxygen since the 1960s; coastal areas are heavily impacted.; Rising acidity threatens coastal species' survival.
4. **Blue Carbon and MPAs:** Marine forests are crucial for carbon absorption; Marine Protected Areas protect biodiversity; However, many countries lack marine forest conservation in their plans.
5. **Acidification:** Ocean absorbs 25% of annual anthropogenic CO₂; Reduces seawater pH (ocean acidification); Expected to increase by over 100% by the century's end.

Challenges in protecting the ocean:

1. **Illegal, Unreported and Unregular (IUU) Fishing:** Depletes fish stocks; disrupts marine ecosystems; Approx. **33% of global fish stocks overfished**
2. **Climate Change:** Rises Ocean temperatures; increases acidity; Oceans absorbed over 90% of excess heat since the 1970s; 30% of carbon dioxide, increasing acidity.
3. **Pollution:** Includes plastic waste, oil spills, and agricultural runoff; Harms marine life; creates dead zones.
4. **Unsustainable Tourism:** High demand for activities like snorkeling, and diving; Leads to habitat destruction, pollution, and overfishing.
5. **Invasive Species:** Disrupts marine ecosystems; harms native species; Invasive species are Introduced via ballast water, accidental release.
6. **Lack of Governance:** Only 16% of oceans are covered by MPAs; high seas lack protection and coordination.

Key recommendations of the Report:

1. **Coastal Blue Carbon Ecosystems:** Mangroves, seagrasses, and tidal marshes provide refuge against a warmer, more acidic ocean.
2. **Marine Spatial Planning:** Implement to alleviate pressures on marine ecosystems.
3. **Increase Seafloor Knowledge:** Globally enhance efforts; 75% of the ocean floor remains unmapped.
4. **Engage Indigenous Peoples:** Involve in marine policy and planning for a sustainable ocean future.
5. **Promote Ocean Literacy:** Foster universal appreciation of the ocean's vital role in society.
6. Adaptation to **local changes is vital.**

Initiatives for Ocean Protection:

1. **BBNJ (Biodiversity Beyond National Jurisdiction) Treaty (2023):** Also known as the Treaty of the High Seas, aims to conserve and sustainably use marine biological diversity beyond national jurisdiction.
2. **Marine Carbon Dioxide Removal (mCDR) Technologies:** Capture CO₂ from the air and store it durably.
3. **Marine Biodiversity:** The UN 2030 Agenda emphasizes marine biodiversity protection for sustainable food security.
4. **Kunming-Montreal Global Biodiversity Framework** aims to protect 30% of the ocean by 2030.
5. **Creation of Marine Protected Areas (MPA):** 50% of catalogued marine species are found in Marine Protected Areas (MPAs), covering 9% of the ocean.
6. **Case Study: Marine Protected Area (MPA) Success in the Coral Triangle:** The success story of Marine Protected Areas (MPAs) in the **Coral Triangle**, a marine region in Southeast Asia renowned for its biodiversity, showcases the efficacy of conservation efforts. Through the establishment and meticulous management of a network of MPAs, the Coral Triangle has witnessed a significant recovery of coral reefs, has augmented fish populations, and enriched biodiversity within the protected areas.

About UNESCO-IOC

The Intergovernmental Oceanographic Commission of UNESCO (IOC/UNESCO) was established in **1961 by resolution 2.31 of the General Conference of UNESCO**. It assists governments in addressing ocean and coastal management needs through knowledge sharing, technology, and capacity building. The IOC plays a crucial role in the sustainable development discourse, supporting the creation of **Sustainable Development Goal 14 and engaging in partnerships for ocean sustainability** with organizations like the CBD, UN-Oceans, and **the World Ocean Assessment**.

Insta Links:

1. [How to save our high seas from overfishing and pollution?](#)

Mains Link:

Q. With respect to the South China sea, maritime territorial disputes and rising tension affirm the need for safeguarding

maritime security to ensure freedom of navigation and overflight throughout the region. In this context, discuss the bilateral issues between India and China. (UPSC 2018)

Prelims Link:

Q. With reference to the United Nations Convention on the Law of Sea, consider the following statements:

1. A coastal state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baseline determined in accordance with the convention.
2. Ships of all states, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.
3. The Exclusive Economic Zone shall not extend beyond 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.

Which of the statements given above are correct?

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

Ans: (d)

13. REMOULDING THE GLOBAL PLASTICS TREATY

Context:

According to the **OECD Global Plastic Outlook**, global production of plastic waste was 353 million tonnes in 2019, more than doubled since it was in 2000, and is set to triple by 2060.

The Global Plastics Treaty:

- **It is a significant attempt to establish a legally binding agreement** aimed at reducing and eliminating plastic pollution.
- **Establishment of Intergovernmental Negotiating Committee (INC)** was made in 2021 during the fifth **UN Environment Assembly in Nairobi, Kenya**.
- **An Ad Hoc Open-Ended Working Group meeting** in Dakar, Senegal, in mid-2022
- **The final INC-5 meeting in South Korea:** There will be active participation from the **International Alliance of Waste Pickers (IAWP)**.

Ever wondered!?

What's the role of informal workers in a circular economy?

- **According to the United Nations Environment Programme**, of the 9% recycled, 85% was done by informal recycling workers.
- These workers collect, sort and recover recyclable and reusable materials from general waste, alleviating municipal budgets of financial burdens around waste management and, at large, subsidising the environmental mandate of the producers, consumers and the government.
- Their efforts significantly reduce plastic content in landfills and dump sites, effectively preventing plastic leaking into the environment.

What should the Global Plastic Treaty contain?

1. **Global Objectives:** The treaty targets marine and environmental pollution caused by plastics, focusing on global goals and ecosystem impact assessment.
2. **Guidelines for International Cooperation:** It may outline support mechanisms for wealthier nations to assist poorer ones in achieving plastic reduction objectives.
3. **Prohibitions and Targets:** Expect bans on specific plastics, products, and additives, alongside binding targets for recycling and recycled content in consumer goods.
4. **Chemical Testing Mandates:** The treaty might mandate testing certain chemicals in plastics for safety and environmental protection.
5. **Consideration for Vulnerable Workers:** Details may address a just transition for waste pickers and workers in developing countries reliant on the plastic industry for livelihoods.
6. **Progress Assessment:** Provisions for evaluating member states' progress in implementing plastic pollution reduction

measures will ensure accountability and drive continuous improvement.

Challenges to such a treaty:

Challenges	Description
Differences Among Countries	The “ High Ambition Coalition (HAC) ” advocates for ambitious goals like ending plastic pollution by 2040 and phasing out single-use plastics. Whereas, the US diverges by promoting voluntary measures over binding commitments. Influence of Industry Interests Oil-producing countries like Saudi Arabia, Russia, and Iran oppose plastic production caps, using delay tactics to hinder discussions
Scope of the Agreement	Deciding the agreement’s scope involves questions like coverage of plastic creation and disposal, types of pollution, and ban considerations. Fossil fuel and chemical corporations seek to weaken the treaty’s impact, opposing production cuts and framing the issue as solely a waste management concern.
Reporting and Monitoring	Establishing a reliable reporting and monitoring system faces challenges, such as concerns over national self-reporting accuracy.
Strategic Financing and Governance	Including strategic financing, circularity support, and governance approaches requires alignment across participating countries.

Ever Wondered!?

There can be a Fungi that break down Oceanic Plastic?

Context: Recently, the marine fungus ***Parengyodontium album*** was discovered to break down oceanic polyethylene (PE) plastic.

About *Parengyodontium album*:

This **fungus converts PE-derived carbon** into fungal biomass, using it as an energy source, a process that requires the initial photodegradation of PE by UV sunlight. This discovery highlights the potential of ***P. album* to degrade floating oceanic plastic litter**.

With over 400 billion kilograms of plastic produced annually, much of which ends up in the ocean, researchers are optimistic that other plastic-degrading fungi may exist in the deeper parts of the ocean, given fungi’s reputation as “**masters of degradation**” due to their diverse digestive enzymes.

India’s Stance at INC:

- India advocates for reaffirming states’ sovereign rights** to sustainable development.
- India proposes objectives to safeguard human health** and the environment from plastic pollution while ensuring sustainable development, emphasizing principles like equity.
- Restrictions on Plastic Production:** India opposes limitations on primary plastic polymers, arguing they exceed UNEA resolution 5/14’s scope.
- Chemicals and Polymers of Concern:** India advocates for evidence-based decisions on chemicals.
- Midstream Measures:** Advocates for nationally determined approaches for downstream measures like Extended Producer Responsibility (EPR).
- Emissions and Releases:** Emphasizes eliminating plastic waste leakage, excluding manufacturing and recycling emissions.
- Prioritizing Waste Management:** Advocates prioritizing plastic waste management, excluding manufacturing and recycling emissions.
- Cross-Cutting Issues:** Expresses concerns about cross-cutting issues like trade and financing, insisting on comprehensive assistance and technology transfer.

Mains Link:

Q: What are the impediments in disposing the huge quantities of discarded solid waste which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our habitable environment? (UPSC 2018)

Prelims Links:

Q. Why is there a great concern about the ‘microbeads’ that are released into the environment? (UPSC 2019)

- (a) They are considered harmful to marine ecosystems.
- (b) They are considered to cause skin cancer in children.
- (c) They are small enough to be absorbed by crop plants in irrigated fields.
- (d) They are often found to be used as food adulterants.

Ans: (a)

Q. In India, ‘extend producer responsibility’ was introduced as an important feature in which of the following? (UPSC 2019)

- (a) The Bio-medical Waste (Management and Handling) Rules, 1998
- (b) The Recycled Plastic (Manufacturing and Usage) Rules, 1999
- (c) The e-Waste (Management and Handling) Rules, 2011
- (d) The Food Safety and Standard Regulations, 2011

Ans: (c)

14. DRYING UP: FIXING URBAN INDIA’S WATER PROBLEM

Context:

Urban India faces **recurring water crises due to fast-depleting aquifers**. Despite efforts by the government to **provide tap water, aquifer health remains neglected**.

India’s Status:

India is endowed with rich water resources:

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

Structure of Water Management in India:

Level	Organization	Responsibilities
Central Level	Ministry of Jal Shakti (MoJS)	Formulates national water policies and oversees water resource management activities across the country. Established in May 2019.
	Central Water Commission (CWC)	Provides technical guidance on water resource development projects and river basin planning.
	Central Groundwater Board (CGWB)	Assesses, monitors, and manages groundwater resources in India.
	Central Pollution Control Board (CPCB)	Promotes the cleanliness of streams and wells across states by preventing, controlling, and reducing water pollution, as defined in the Water Act of 1974.
State Level	State Water Resources Departments	Implement water policies and manage water resources within their respective states.
	Irrigation Departments	Manage irrigation systems and ensure water distribution for agricultural purposes.
	State Pollution Control Boards (SPCBs)	Monitor and control water pollution within the state.
Local Level	Panchayats (Village Councils)	Manage water resources at the village level, promote water conservation, and ensure equitable distribution.
	Municipalities	Manage water supply and sanitation in urban areas.
	Water User Associations (WUAs)	Groups of farmers formed to manage and maintain irrigation systems at the local level.

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

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

Major Consequences of the Water Crisis:

1. **Hindering Human Capital Development:** Girls miss school due to water collection duties.; **Waterborne illnesses and malnutrition** cause cognitive impairments in children.
2. **Long-Term Economic Risks:** Water scarcity could cost India up to 6% of its GDP by 2050.
3. **Rise of Water Mafias:** Informal water markets with high prices, worsening social and economic inequalities.
4. **Impact on Transboundary Water Disputes:** Increases tensions and potential conflicts with neighbouring countries over shared river basins.
5. **Threat to Biodiversity:** Depleting water levels and pollution endanger freshwater species, including the Ganges River Dolphin.

Key Government Schemes To Tackle The Groundwater Crisis in India:

1. **MGNREGA:** Supports water conservation through rural employment.
2. **Jal Kranti Abhiyan:** Raises awareness on water conservation.
3. **National Water Mission:** Promotes sustainable wa-

ter management.

4. **Atal Bhujal Yojana (ABHY):** Improves groundwater management.
5. **Jal Jeevan Mission (JJM):** Aims to provide tap water to rural households.
6. **National Mission for Clean Ganga (NMCG):** Addresses Ganga basin groundwater issues.
7. Programs like the **Sahi Fasal Campaign**

Steps to Address the Water Crisis in India:

1. **Inclusive Water Governance:** Inclusive **representation** in local **water management committees** and **decision-making bodies** to ensure that the voices of all castes are heard.
2. **Interlinking of Rivers:** Connect surplus rivers to deficient regions.
3. **Adopt One Water Approach:** Manage water sources sustainably and inclusively.
4. **Transforming Fallow Land:** Convert underutilized land into water recharge parks with bioswales, wetlands, and rainwater harvesting structures.
5. **Desalination Plants:** Use renewable energy and waste-to-energy for desalination plants, creating clean water and utilizing waste.
6. **Urban Rainwater Harvesting:** Mandate rainwater systems in new buildings and retrofit existing ones; install green roofs.
7. **Promote Drip Irrigation:** Encourage drip irrigation and aquaponics to reduce water use in agriculture.
8. **Smart Water Grids:** Implement sensors and real-time monitoring for efficient water distribution.
9. **Fog Harvesting:** Use mesh structures to capture moisture from fog in hilly areas.
10. **Decentralized Management:** Adopt community-driven water supply and sanitation projects, and decentralized wastewater treatment.
11. **Zero Liquid Discharge:** Mandate ZLD systems in industries to recycle wastewater and reduce freshwater use.

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

Conclusion:

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

Insta Links:

- Regenerative agriculture: A step towards water conservation

Mains Links:

How and to what extent would micro-irrigation help in solving India's water crisis? (UPSC 2021)

What is water stress? How and why does it differ regionally in India? (UPSC 2019)

What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? (UPSC 2020)

Suggest measures to improve water storage and irrigation systems to make their judicious use under the depleting scenario. (UPSC 2020)

Prelims Links:

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

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

Select the correct answer using the code given below:

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

Ans: C

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

1. It puts microfinance tools to work in the water and sanitation sector.
2. It is a global initiative launched under the aegis of the World Health Organization and the World Bank.
3. It aims to enable the poor people to meet their water needs without depending on subsidies.

Which of the statements given above are correct?

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

Ans: C

15. MONTREAL PROTOCOL: ENVIRONMENTAL SUCCESS STORY

Context:

The Montreal Protocol has successfully reduced radiative forcing and equivalent effective chlorine from hydrochlorofluorocarbons (HCFCs) since 2021, indicating progress in mitigating climate change and ozone layer loss, as per a new study published in the Nature Journal.

What is the Montreal Protocol?

The Montreal Protocol, enacted in 1987, is a global treaty designed to phase out the production and use of ozone-depleting substances (ODS). This treaty operates under the framework of the Vienna Convention (adopted in 1985). A significant addition to the Protocol came with the adoption of the Kigali Amendment in 2016, which became effective in 2019. This amendment specifically targets the reduction of Hydrofluorocarbons (HFCs), which serve as non-ODS alternatives to previously phased-out substances like Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs).

What are Ozone and Ozone-Depleting Substances (ODS)?

Ozone-depleting substances (ODS) are synthetic compounds, such as Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs), containing chlorine and bromine. When released into the atmosphere, these chemicals can ascend to the stratosphere, where they trigger catalytic reactions that degrade ozone molecules.

Ozone Depleting Substances (ODS)	Sources
Chlorofluorocarbons (CFCs)	Refrigerators, air-conditioners, solvents, dry-cleaning agents, etc
Halons	Fire-extinguishers
Carbon tetrachloride	Fire-extinguishers, solvents
Methyl chloroform	Adhesives, aerosols
Hydrofluorocarbons	Fire extinguishers, air conditioners, solvents

Success of Montreal Protocol: the most successful global climate treaty

1. Researchers indicate a significant reduction in the ozone hole's size since 2000, attributing it to global efforts to limit the use of chlorofluorocarbons and other harmful gases.
2. Projections suggest complete healing of Northern Hemisphere and mid-latitude ozone by the 2030s, followed by the Southern Hemisphere in the 2050s, and Polar Regions by 2060.
3. Decrease in the impact of Hydrochlorofluorocarbons (HCFCs) on Earth's energy balance since 2021, five years earlier than expected.
4. HCFCs, compounds, notably HCFC-22, the most abundant, have declined significantly.
 - a. HCFC-22, commonly used as a refrigerant, possesses a Global Warming Potential (GWP) thousands of times higher than carbon dioxide (CO₂).

5. **Minor declines in HCFC-141b**, the second most abundant, used as a blowing agent in foam production.
6. **India has successfully phased out HCFC-141b** under **ODS Regulation and Control Amendment Rules, 2014**, aligning with its commitment to the Montreal Protocol for Ozone Layer Depletion.

The Montreal Protocol offers **a model of a successful environmental treaty** that brought nations together to act swiftly on protecting the ozone layer.

The Montreal Protocol serves as a model for addressing environmental challenges:

1. **Greenhouse Gas Emissions:** Despite efforts, emissions and temperatures continue to rise, with the Paris Agreement showing limited effectiveness.
2. **Biodiversity Loss:** Human land and sea use are driving biodiversity loss, but international efforts have seen little progress.
3. **Wildfires:** Increasing greenhouse gases worsen wildfires, necessitating better planning and international cooperation.
4. **Climate Change:** The reality of climate change is undeniable, requiring developed nations to support developing countries in meeting Paris Agreement goals.

Conclusion

With the **robust international coalitions** and **effective implementation** of the framework, the Montreal Protocol achieved a milestone in reducing ozone depletion. To protect the environment and to achieve more sustainable development there is a need to follow the pattern of the Montreal Protocol in solving other environmental problems.

Insta Links:

- [Ozone Depletion and Protection](#)

Prelims Link:

Q. Which one of the following is associated with the issue of control and phasing out of the use of ozone-depleting substances? (UPSC 2015)

- (a) Bretton Woods Conference
- (b) Montreal Protocol
- (c) Kyoto Protocol
- (d) Nagoya Protocol

Ans: (b)

Q. Consider the following statements: (USPC 2012)

Chlorofluorocarbons, known as ozone-depleting substances, are used

1. in the production of plastic foams
2. in the production of tubeless tyres
3. in cleaning certain electronic components
4. as pressurizing agents in aerosol cans

Which of the statements given above is/is/are correct?

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

Ans: (c)

16. PESA HAS BOOSTED FOREST CONSERVATION IN INDIA

Context:

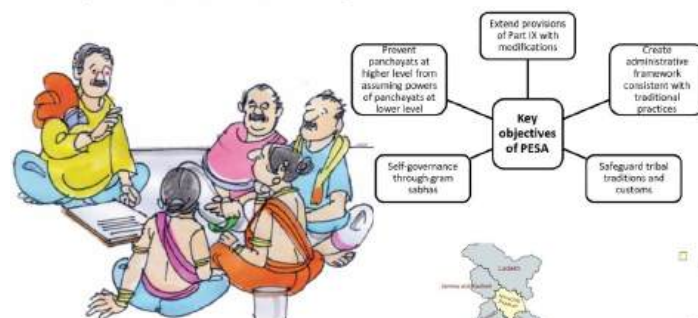
The **Panchayat (Extension to Scheduled Areas) Act (PESA)** empowered Scheduled Tribes by mandating political representation in local governance, thereby linking their **livelihood needs with forest conservation**.

What is PESA?

- The **Panchayat (Extension to Scheduled Areas) Act (PESA) of 1996** extended **Part IX of the Constitution, which pertains to Panchayats, to Scheduled Areas**.
- These areas, defined under **Article 244(1)**, receive special provisions under the Fifth Schedule of the Constitution.
- PESA mandates **political representation for Scheduled Tribes (STs) in local governance**, ensuring they have a significant role in decision-making regarding their resources and livelihoods.
- This act applies in **ten states across India**, covering various districts under the Fifth Schedule, aiming to **empower ST communities economically and environmentally**.

Panchayats (Extension to Scheduled Areas) Act (PESA Act) 1996

PESA Act empowers the Gram Sabha with the rights to safe guard and preserve the Tribal Culture Heritage.



Important Features of PESA-Act

- Gram Sabha approves the plans, programmes and projects
- Gram Sabha is competent to safeguard and preserve the tradition & customs and cultural identity
- Gram Sabha identifies the beneficiaries.
- Gram Sabha is endowed with the ownership of MFPIs.
- Approval of Utilisation Certificates in Gram Sabhas.
- Reservation of seats.
- Gram Sabha or PAL is consulted for land acquisition, management of minor water bodies, grant of licence or mining lease, prohibition/regulation of the sale & consumption of any intoxicant, power to prevent alienation of land, managing village markets and others.



10 states have 5th scheduled areas but out of these only 8 states have notified PESA Rules. Jharkhand and Odisha is yet to frame and notify it.

Issues with conservation efforts in India:

The conflict in conservation efforts in India centres on

balancing conservation with local resource extraction and economic development. The government often prioritizes large-scale economic projects such as mining and dam construction over forest conservation, driven by the interests of the political elite.

What are other laws which complement PESA?

- The **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA)** recognizes forest-dwelling communities' rights to forest resources and allocates forest land for community development. It protects tribes from eviction without rehabilitation and empowers Gram Sabhas to influence local policies.
- The **Forest Rights Act (FRA) of 2006** and the **Panchayats (Extension to Scheduled Areas) Act (PESA) of 1996** were enacted to recognize and protect the historical connection of these communities with the forests, these legal frameworks aim not only to **prevent arbitrary evictions** but also to **empower these communities** in the sustainable management of their natural resources.

Key aspects of the Forest Rights Act, 2006, and PESA 1996: Promoting Environmental Conservation:

1. **Empowering Forest-Dwelling Communities:** The Forest Rights Act recognizes and vests forest rights in the hands of forest-dwelling communities. By empowering these communities with ownership and access rights, FRA promotes sustainable forest management.
 - a. E.g. In **Mendha Lekha, Maharashtra, tribal communities** utilized FRA to gain control over their traditional forests.
2. **Conserving Biodiversity and Ecosystems:** The act emphasizes the conservation of biodiversity and ecological balance. By involving local communities in the conservation process, it contributes to maintaining diverse ecosystems.
 - a. For instance, the **Bishnois of Rajasthan**, under the FRA, has played a crucial role in **protecting the blackbuck**, an endangered species.
3. **Recognition of Community Forest Rights:** The act recognizes community forest rights, providing communities with the authority to protect and manage forests collectively. This communal approach fosters environmental conservation.
 - a. E.g. **The Dongria Kondh tribe in Odisha** used FRA to protect the **Niyamgiri Hills**, a biodiversity hotspot.

Protection of Forest-Dwelling Communities' Rights:

1. **Local Governance and Decision-Making:** The Panchayats (Extension to Scheduled Areas) Act emphasizes local governance and decision-making. In tribal areas, it ensures that **communities have a say in matters related to land and resource management**, including forests.
 - a. E.g. observed in various parts of the country where **local tribal communities**, are under

PESA.

2. **Cultural and Traditional Practices:** Both acts recognize the importance of traditional and cultural practices in environmental conservation. They safeguard the rights of indigenous communities to follow sustainable practices.
 - a. E.g. The **Soligas in the Biligirirangan Hills** of Karnataka have **preserved their sacred groves under FRA**.
3. **Protection against Exploitation and Encroachment:** The act protects forest-dwelling communities against exploitation and illegal encroachment. By ensuring the rights of these communities, FRA acts as a deterrent to activities that harm the environment.
 - a. E.g. In the **Sariska Tiger Reserve area of Rajasthan**, the FRA has been instrumental in preventing **illegal activities**, contributing to the protection of the tiger habitat.

The success of both acts in forest conservation:

Aspect	Details
Increase in Tree Canopy	Areas with ST representation under PESA and FRA saw an average annual increase in tree canopy by 3% , indicating positive impacts on forest cover.
Reduction in Deforestation	Implementation of PESA and FRA correlated with a significant reduction in deforestation rates in Scheduled Areas , enhancing conservation efforts.
Resistance to Mining	ST communities empowered by PESA and FRA showed increased capability to resist mining and large-scale commercial activities that contribute to deforestation.
Comparison with FRA	PESA demonstrated more substantial conservation impacts compared to the Forest Rights Act (FRA), highlighting its effectiveness in enhancing forest stewardship .

Limitations of the FRA and PESA:

1. **Implementation Challenges:** Despite its intentions, the Forest Rights Act faces challenges in implementation, leading to delays in the recognition of rights.
 - a. **Procedural hurdles and lack of awareness** limit the effective protection of forest-dwelling communities.
2. **Inadequate Legal Protection:** The legal protection provided by FRA may not be sufficient in instances where there is a conflict with other environmental laws.
 - a. E.g. In **ecologically sensitive areas**, conflicts between **FRA and wildlife protection** laws have arisen, creating ambiguity in legal protection.
3. **Limited Involvement of Gram Sabhas:** While PESA empowers Gram Sabhas, the actual involvement of

these local governance bodies in decision-making varies.

4. **Influence of External Entities:** The act does not provide clear mechanisms to prevent the influence of external entities or vested interests in local decision-making.
 - a. E.g. **mining companies**, have exerted pressure on local decisions, compromising the protection of forest rights.
5. **Limited Awareness and Capacity Building:** Inadequate awareness and capacity building among forest-dwelling communities limit their ability to fully exercise their rights and actively participate in conservation efforts.

Way forward:

1. **Legal provisions should be strengthened to safeguard against external influences** on local decision-making. Transparent mechanisms and checks and balances can help protect the autonomy of Gram Sabhas and forest-dwelling communities.
2. **Awareness:** Government and non-governmental organizations should collaborate to conduct extensive awareness programs. These initiatives should focus on educating forest-dwelling communities about their rights under FRA and PESA.
3. Efforts should be made to **harmonize the Forest Rights Act with other environmental laws** to prevent conflicts.
4. **Enhanced implementation strategies:** Implementing agencies should adopt robust strategies to overcome procedural hurdles and expedite the recognition of forest rights.

Conclusion

The continuous refinement of these legislative frameworks will not only promote environmental conservation but also ensure the protection and empowerment of forest-dwelling communities, fostering a harmonious balance between conservation and the rights of those intricately connected to India's forests.

Insta Links:

- [Jharkhand issues PESA draft rules for consultations](#)
- [PESA Act](#)

Mains Link:

Q. The PESA Act is considered to be the backbone of tribal legislation in India, in this backdrop do you think proper implementation of it can rejuvenate self-governance in the tribal pockets of the country? Analyse.

17. ANDAMAN & NICOBAR (A&N) ISLANDS: STRATEGIC GEMS WITH ECOLOGICAL TREASURES

Context:

The Indian government must recognize the strategic and

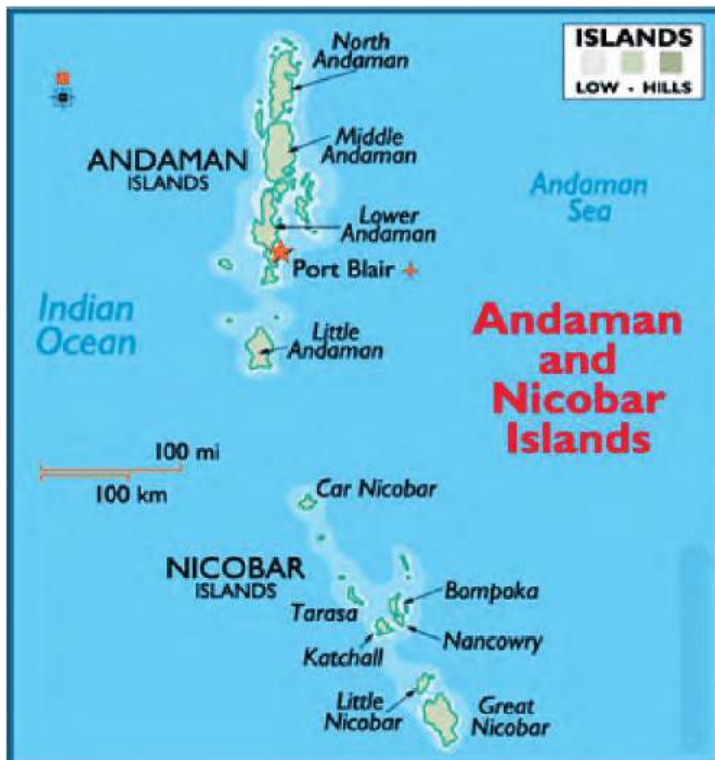
ecological significance of the [Andaman & Nicobar \(A&N\) islands](#).

Strategic Significance of Andaman and Nicobar Islands for India

1. **Forward Défense Position:** Crucial presence in the Bay of Bengal and the Andaman Sea. Key in monitoring and controlling maritime chokepoints like the [Malacca Strait](#)
2. **Naval Power Projection:** Acts as India's first line of defence against eastern threats. Base for projecting naval strength into the eastern Indian Ocean and western Pacific, countering China's naval presence.
3. **Integrated Military Command:** Hosts the Andaman and Nicobar Command (ANC), India's only tri-service theatre command. Serves as a model for integrated military operations, vital for future conflicts.
4. **Exclusive Economic Zone Expansion:** Extends India's Exclusive Economic Zone (EEZ) and continental shelf under UNCLOS.
5. **Maritime Trade Hub Potential:** Development of [Galathea Bay in Great Nicobar Island](#) as a transshipment port. Could become a major hub for international maritime trade, rivalling ports like Singapore.

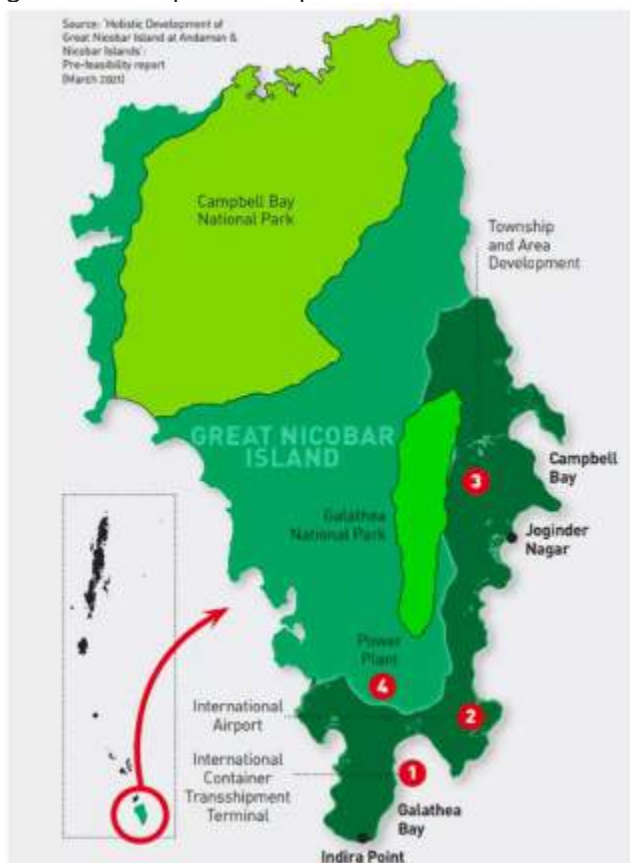
Ecological Significance of Andaman and Nicobar Islands for India

1. **Biodiversity Hotspot:** Home to over 2,200 species of plants, 270 species of birds, and numerous mammals and reptiles.
2. **Example:** Great Nicobar Biosphere Reserve, which hosts endemic species like the Nicobar Megapode.
3. **Marine Ecosystems:** Example: [The coral reefs around Havelock Island](#), which support diverse marine species and protect against coastal erosion.
4. **Unique Fauna:** Several endemic species of animals and birds. Example: The Narcondam Hornbill, found only on Narcondam Island.
5. **Critical Habitats:** Important nesting sites for endangered species. Example: Leatherback turtles nest on the beaches of Great Nicobar Island.
6. **Mangrove Forests:** Extensive mangrove coverage providing vital ecosystem services.
7. **Eco-Tourism Opportunities:** Pristine beaches, coral reefs, and unique wildlife offer immense eco-tourism potential. Generates revenue, creates jobs, and boosts the Indian economy.
8. **Cultural and Anthropological Significance:** Home to indigenous tribes like the Shompen for millennia. Preserving their unique culture and way of life is crucial for the islands' identity.



About the Great Nicobar Project:

It was introduced in the 1970s for **national security in the Indian Ocean Region** and has gained urgency due to increased Chinese activity in the Bay of Bengal and Indo-Pacific. The Rs 72,000 crore development includes a ₹35,000 crore **transshipment port at Galathea Bay**, a **dual-use military-civil international airport**, a power plant, and a **greenfield township**, overseen by the **Andaman and Nicobar Islands Integrated Development Corporation**.



Challenges faced by A&N:

1. **Environmental vs. Developmental Balance:** Balancing strategic and economic growth with the protection of unique ecosystems and biodiversity, such as leatherback turtle nesting sites at Galathea Bay, presents significant challenges.
2. **Indigenous Rights and Preservation:** Development often conflicts with the preservation of the culture and rights of Indigenous tribes like the Jarawas, Onges, and Sentinelese, risking violations of protective laws.
3. **Infrastructure Challenges:** The remote location, difficult terrain, and seismic activity complicate infrastructure projects, including sourcing materials and skilled labour.
4. **Climate Vulnerability:** The islands' susceptibility to climate change impacts, such as rising sea levels, threatens both infrastructure and indigenous communities, necessitating long-term adaptive strategies.
5. **Surveillance Deficiencies:** Inadequate surveillance networks over the vast maritime expanse leave critical chokepoints like the Six Degree Channel vulnerable.

Way forward:

To ensure balanced development in the Andaman and Nicobar Islands, **several strategic initiatives can be implemented**. These include establishing a **centre that integrates traditional tribal knowledge with modern science** to advance medicine, sustainable forestry practices, and **climate-resilient agriculture**. Additionally, creating a **startup incubator focused on maritime technologies** and sustainable island development will stimulate innovation and attract investment. Designating specific islands as diplomatic and cultural exchange zones for regional cooperation summits, coupled with implementing blockchain technology for transparent resource management, will enhance sustainability and international collaboration.

Insta Links:

- [Andaman and Nicobar to establish wildlife sanctuaries](#)

Prelims Link:

Q1. Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (UPSC 2014)
 (a) Andaman and Nicobar
 (b) Nicobar and Sumatra
 (c) Maldives and Lakshadweep
 (d) Sumatra and Java

Ans: (a)

Q2. Which of the following have coral reefs? (USPC 2014)

1. Andaman and Nicobar Islands
2. Gulf of Kachchh

- 3. Gulf of Mannar
- 4. Sunderbans

Select the correct answer using the code given below:

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

Ans: (a)

Topics: [Disaster and management.](#)

18. LEARNING FROM THE AHMEDABAD HEAT ACTION PLAN

Context:

The [article](#) highlights recent severe heatwaves in India, with temperatures nearing 50°C in some cities, and lessons that the **Ahmedabad Heat Action Plan can give to other cities.**

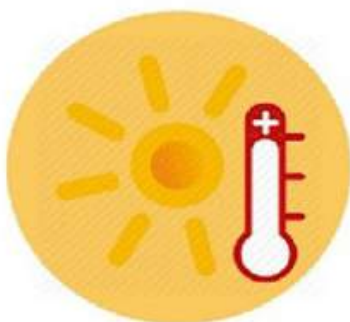
What is a Heat Action Plan?

A Heat Action Plan is a strategy to reduce health risks during extreme heat, protecting vulnerable populations and coordinating responses.

Why are Heat Action Plans (HAPs) necessary?

Heatwaves significantly impact health, especially for vulnerable groups. Heat Action Plans minimize these risks by offering safety guidance, cooling centres, and early warnings. The **National Disaster Management Authority and IMD are working with 23 states to develop HAPs**, detailing roles for disaster management, labour, and police departments.

HAP COMPONENTS



EARLY WARNING SYSTEM & INTER AGENCY EMERGENCY RESPONSE PLAN

Alert residents of predicted high and extreme temperatures & formally communication channels to alert governmental agencies



PUBLIC AWARENESS & COMMUNITY OUTREACH

Communicate the risks of heat waves and implement practices to prevent heat-related deaths and illnesses



CAPACITY BUILDING OF MEDICAL PROFESSIONALS

Training focus on primary medical officers and other paramedical staff, and community health staff



REDUCING HEAT EXPOSURE AND PROMOTING ADAPTIVE MEASURES

Access to potable drinking water and cooling spaces during extreme heat days & promote adaptive measures.

Example: Ahmedabad, India – Pioneering a Comprehensive Heat Action Plan

Ahmedabad, experienced a **severe heatwave in 2010**, which led to hundreds of deaths. This prompted the development of **South Asia's first comprehensive Heat Action Plan (HAP) in 2013**, a pioneering step that has since been considered a global model for heatwave preparedness.

Innovative Steps Taken:

1. **Early Warning System and Public Awareness:** The plan included an early warning system for upcoming heatwaves, **disseminating alerts via media, text messages, and public announcements.** **Heat-Resistant Infrastructure:** Efforts were made to **modify urban infrastructure**, such as **painting roofs white** to reflect sunlight and reduce indoor temperatures.
2. **Cooling Spaces:** **Public spaces** like temples, public buildings, and malls were designated as cooling centres, providing relief during peak heat hours.
3. **Healthcare System Preparedness:** The city's **healthcare facilities were equipped and trained** to deal with heat-related illnesses, including setting up special wards and training medical staff.
4. **Capacity Building and Training:** Training programs for health professionals, emergency responders, and community leaders were implemented to build capacity in dealing with heat waves.
5. **Water Management:** Ensuring **water availability, particularly in slum areas**, was prioritized to prevent dehydration and heat strokes.
6. **Impact and Global Recognition:** The HAP led to a significant **reduction in heat-related deaths**. The success of the Ahmedabad model prompted its **adaptation in over 30 other cities** across India.

Recognized globally, the Ahmedabad HAP has been highlighted by international organizations like the United Nations Framework Convention on Climate Change (UNFCCC) as an **effective strategy for combating heat waves**.

Analysis of Effectiveness of Heat Action Plans in India

1. **Early Warning Systems and Public Awareness:** HAPs have implemented early warning systems, **providing timely alerts** about impending heatwaves.
 - a. Example: **In 2023, cities like Ahmedabad** issued early warnings, which helped in **reducing heatwave-related health emergencies**.
 - b. **Challenge:** **Reaching remote and rural populations** remains a challenge.
2. **Community Outreach and Education:** Educational campaigns on heatwave risks and **precautions** have increased public awareness.
 - a. Example: **Awareness drives in Telangana in 2022** effectively educated communities on **heat stress prevention**.
 - b. **Challenge:** The consistency and **reach** of these campaigns across all states are **uneven**.
3. **Access to Water and Cooling Facilities** Providing

accessible drinking water and cooling centres has been a critical component of HAPs.

- a. Example: **In Odisha, public cooling places** were set up during the **2022 summer**, significantly aiding the local population.
 - b. **Challenge:** Ensuring these **facilities in all heat-prone areas**, especially in **slums and rural areas**, is still a work in progress.
4. **Health System Preparedness:** Upgrading healthcare facilities **to manage heatstroke and dehydration** cases has been a focus.
 - a. Example: **Rajasthan's enhanced healthcare response** during the 2022 heat wave mitigated many heat-related health issues.
 - b. **Challenge:** **Healthcare infrastructure** in several regions remains **under-equipped** to handle the surge during heatwaves.
 5. **Protecting Outdoor Workers:** Guidelines for **re-scheduling work to cooler hours** have been beneficial for outdoor workers.
 - a. Example: In **Punjab, labour departments advised adjusted work hours** during the peak of summer 2022.
 - b. **Challenge:** Implementation and monitoring of these guidelines are inconsistent.
 6. **Vulnerable Groups Focus:** Special attention to the **elderly, children, and those with chronic diseases** has been prioritized.
 - a. Example: **Mobile healthcare units in Kerala** during the **2022 heatwave** provided relief to vulnerable groups.
 - b. **Challenge:** Identifying and **reaching all vulnerable individuals**, especially in densely populated urban areas, remains a hurdle.
 7. **Urban Planning and Green Cover:** Efforts to **increase urban green cover and reflective surfaces** have **reduced urban heat islands**.
 - a. Example: **Delhi's initiative to expand green spaces** has moderately alleviated heat stress in some areas.
 - b. **Challenge:** **Rapid urbanization and lack of space** limit the extent of these interventions.
 8. **Collaboration with NGOs and Civil Society:** Partnerships with NGOs for ground-level implementation and aid distribution have been effective.
 - a. Example: **NGOs in Maharashtra** played a crucial role in **distributing water and oral rehydration solutions in 2022**.
 - b. **Challenge:** Coordination and resource allocation among various stakeholders can be challenging.

Issues with the HAPs (as per Centre for Policy Research (CPR) Study of HAPs):

1. **Not Fit for Local Contexts:** Most HAPs focus on extreme dry heat, neglecting humid heat and warm nights. They adopt national thresholds unsuitable for local risks. **Only 10 of 37 HAPs** have locally spec-

ified temperature thresholds.

2. **Underfunded:** Only 3 of 37 HAPs identified funding sources. Eight HAPs require departments to self-allocate resources, indicating funding issues.
3. **Weak Legal Foundations:** HAPs lack legal authority, reducing compliance incentives.
4. **Insufficient Transparency:** No national repository of HAPs; few are listed online. Unclear if HAPs are regularly updated based on evaluation data.

Recommendations:

1. **Reduce global emissions in the next two decades** to prevent temperatures from reaching 1.5°C.
2. **HAPs should identify financing sources** and integrate them with existing policies.
3. **Implement rigorous independent evaluations** for constant improvement.
4. **Effective HAPs are crucial to protect India's poorest** from extreme heat impacts on health and income.

Conclusion

While **Heat Action Plans in India** have made significant strides in protecting vulnerable populations from heat waves, there are areas that require further improvement. By addressing the current gaps and focusing on a more **integrated and adaptive approach**, HAPs can significantly **bolster India's resilience to heat waves**, ultimately protecting and saving lives, particularly of the most vulnerable populations.

Insta Links:

- [Heat stroke](#)

Mains Links:

Q: Bring out the causes for the formation of heat islands in the urban habitat of the world. (10M)

Topics: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention

19. INDIA'S FIRST JOINT DOCTRINE FOR CYBERSPACE OPERATION

Context:

India's Chief of Defence Staff, General Anil Chauhan, has **re-leased the country's first joint doctrine for cyberspace operations.**

What is Cyberspace

In military terms, cyberspace refers to the domain where operations involving computers, networks, and electronic systems occur. It encompasses activities such as cyber warfare, cyber defence, and information operations conducted by military forces in both offensive and defensive capacities.

7 Types of Cyberwarfare Attacks



What is Doctrine for Cyberspace Operation?

A doctrine for cyberspace **operations is a set of principles, guidelines, and strategies developed by military organizations** to govern their activities in the cyberspace domain. It outlines how military forces should plan, execute, and manage operations involving computers, networks, and electronic systems.

Significance:

It **promotes jointness and integration among the three services** (Army, Navy, and Air Force) and aligns with **national security strategies**. This integration facilitates the development of goals, methods, and resources to influence events across all operational domains and forms of power.

Comparison with China:

China has developed significant capabilities in cyberwarfare, including cyberweapons designed to disrupt or incapacitate an adversary's military assets and strategic networks. In contrast, **India has been slow to develop similar capabilities**, approving only the creation of **a limited tri-service Defence Cyber Agency in 2019**, instead of the fully-fledged Cyber Command requested by the armed forces.

What are the current threats to cyber security?

1. **Outdated protocols:** Current protocols to warn against cyber threats are outdated in India. This means that quantum cyberattacks can potentially breach any hardened target.
2. **Threat to digital infrastructure:** China's quantum advances expand the spectre of quantum cyberattacks against India's digital infrastructure, which already faces a barrage of attacks from **Chinese state-sponsored hackers**.
3. **India's dependence on foreign**, particularly Chinese hardware, is an additional vulnerability.

Countermeasures taken by India against cyber threats.

- **For Critical information infrastructure (CII)-** Creation of the **National Critical Information Infrastructure Protection Centre**, the national nodal agency in respect of CII protection. It was envisaged to act as a 24x7 centre to battle cyber security threats in strategic areas such as air control, nuclear and space.
- **Establishment of Defence Information Assurance and Research Agency** for cyber security issues of the tri-services and Defence Ministry.
- The Army has collaborated with industry and aca-

demia to build secure communications **and cryptography applications.**

- In February 2022, a joint team of the DRDO and IIT-Delhi **successfully demonstrated a QKD (Quantum Key Distribution) link** between two cities in UP — Prayagraj and Vindhyachal.
- For the Financial sector – **CERT-Fin will work closely** with all financial-sector regulators and stakeholders on issues of cyber security.
- Establishment of **cyber security infrastructure**
- **CERT-in – The main function of CERT-In** is to provide early security warning and effective incident response. It is also a national agency to collect, analyze and disseminate information on cyber incidents and takes emergency measures for handling cyber-attacks.
- **IT Act 2000** – This act provides a legal framework against cybercrimes related to “electronic commerce”.
- **National Cyber Security Policy 2013** has been framed to create a secure cyber ecosystem, ensure compliance with global security systems and strengthen the regulatory framework.

Others

- **I4C (Indian Cyber Crime Coordination Center)** was set up in 2016 to look into every kind of cybercrime.
- The **Indian Common Criteria Certification Scheme (IC3S)** is to evaluate and certify IT Security Products and Protection Profiles.
- **Cyber Swachhta Kendra** was introduced for internet users to clean their computers and devices by wiping out viruses and malware.
- **Cyber Surakshit Bharat Initiative** was launched to spread awareness about cybercrime and build capacity for safety measures for **Chief Information Security Officers (CISOs) and frontline IT staff** across all government departments.

Global Effort: **Bletchley Declaration:**

The Bletchley Declaration, named after the historic code-breaking site, signifies a **global commitment to addressing AI's ethical and security challenges**, particularly generative AI. Signed at the AI Safety Summit (in 2023), it highlights the increasing global recognition of AI risks and involves major world powers like China, the EU, India, and the US.

Way forward:

Cyber Wargames for Risk Assessments:

1. Test response to cyber warfare scenarios.
2. Expose defence gaps.
3. Improve cooperation.

Layered Defense Approach:

4. Secure cyber ecosystem.

5. Raise cybersecurity awareness.
6. Promote open standards.
7. Implement a national cybersecurity framework.
8. Collaborate with the private sector.

Securing Private Sector:

9. Establish network obstacles.
10. Utilize web application firewalls (WAF).
11. Respond quickly to breaches.
12. Foster public-private cooperation.
13. Engage local hackers for defence.

Insta Links:

- [Cybersecurity Challenges in India](#)

Mains Link:

Keeping in view India's internal security, analyse the impact of cross-border cyber-attacks. Also, discuss defensive measures against these sophisticated attacks. (UPSC 2021)

Prelims Link:

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

GENERAL STUDIES – 4

1. EMOTIONAL INTELLIGENCE AND ITS APPLICATIONS

Context:

Emotional Intelligence (EI) is crucial in today's interactions, especially for public servants who must navigate complex situations.

What is Emotional Intelligence (EI)?

Emotional Intelligence (EI) refers to the **ability to recognize, understand, and manage one's own emotions, as well as to perceive and influence the emotions of others** effectively. It involves being self-aware of one's emotional state, managing emotions in a constructive manner, empathizing with others, and using emotional information to guide thinking

and behaviour.

Emotional Intelligence Domains and Competencies

Self-awareness	Self-management	Social awareness	Relationship management
Emotional self-awareness	Emotional self-control	Empathy	Influence
	Adaptability		Coach and mentor
	Achievement orientation	Organizational awareness	Conflict management
	Positive outlook		Teamwork
			Inspirational leadership

EI was popularized by **Daniel Goleman** in his 1995 book titled **“Emotional Intelligence: Why It Can Matter More Than IQ.”**

EQ	IQ
<ul style="list-style-type: none"> Identifying, perceiving, and regulating emotions through five domains: self-awareness, self-regulation, empathy, and social skills (Goleman, 2020). 	<ul style="list-style-type: none"> Logical reasoning, cognitive functions, memory, word comprehension, maths skills, abstract and spatial thinking, mental agility.
<ul style="list-style-type: none"> Subject to environmental and social influences so can be actively trained and developed over time. 	<ul style="list-style-type: none"> Considered a stable trait influenced by genetics.
<ul style="list-style-type: none"> No universally standardized test. Testing may involve ability tests and self-reported analyses of a person’s own typical behavior (Cotruş, Stanciu and Bulborea, 2012). 	<ul style="list-style-type: none"> Assessed through standardized intelligence tests, which compare individuals’ scores to the average performance of other participants in their age group.
<ul style="list-style-type: none"> Having the ability to interpret other people’s emotions correctly or attending to emotional cues does not mean they have high IQ (Goleman, 2020). 	<ul style="list-style-type: none"> Having good analytical skills does not necessarily translate in the ability to understanding other people’s emotions (Goleman, 2020).
<ul style="list-style-type: none"> A pivotal role in general well-being, promoting a person’s mental health and quality of relationships (David, 2016). Can lead to interpersonal success even if IQ is average. 	<ul style="list-style-type: none"> Can contribute to greater academic achievement and job performance.

simplypsychology.org

Essence of emotional intelligence

Aspect	Details
Emotion + Intelligence	Emotional Intelligence (EI) combines emotions and intelligence to enhance personal and professional effectiveness.
Key Building Constructs	EI comprises self-awareness, self-management, motivation, empathy, and social skills.
Self-Awareness	Involves understanding one’s physical, mental, emotional, and spiritual self, and being aware of habits that impact well-being.
Self-Management	Focuses on disciplining oneself to maintain consistency in actions, and manage time, habits, and emotions effectively.
Johari Window	A model by Joseph Luft and Harry Ingham that enhances self-awareness through four windows : Open Self (known to self and others), Hidden Self (known to self, not to others), Blind Self (known to others, not to self), and Unknown Self (unknown to self and others).



The Johari Window helps in **emotional intelligence by providing a framework to enhance self-awareness** and interpersonal communication. Through feedback and self-disclosure, individuals can **expand their Open Self quadrant, reduce their Blind and Unknown Self areas**, and increase mutual understanding in relationships.

Applications of Emotional Intelligence:

Application	Example
Personal Relationships	Understanding and managing emotions in conflicts with family members to foster healthier relationships.
Workplace Leadership	Empathizing with team members’ concerns to motivate them effectively, enhancing team productivity.
Stress Management	Using self-awareness and self-management techniques to cope with work pressure and reduce stress levels.
Decision Making	Considering emotions alongside logic when making decisions to ensure well-rounded and informed choices.
Customer Service	Recognizing and responding to customers’ emotions to provide better service and resolve issues more effectively.

Conflict Resolution	Using empathy and social skills to navigate and resolve conflicts peacefully and constructively.
Healthcare	Empathizing with patients' emotions to provide compassionate care and improve patient outcomes.
Education	Helping students develop emotional awareness and social skills to enhance learning and classroom interactions.

Mains Link:

THE CASE

You have recently taken the responsibility of the officer in charge of a welfare scheme. One morning you were not in a good mood and even yelled at your subordinate who was not providing you with correct information related to the welfare scheme. The moment you came out of your chamber you saw a long queue of applicants. You asked your subordinate to consider those persons who have proper documents. All of a sudden you found a lady shouting at other staff as they were stopping her to meet you in person. You ignored it and returned to your chamber.

After a while, your subordinate came and reported about that old lady's willingness to meet you, but you were in no mood to talk to her. You said, "I did not talk to my mother yesterday as it was Mother's Day. I have so many things to do. Please handle yourself."

However, the old woman suddenly comes inside your office and seeks to become a beneficiary. The woman is illiterate and does not have any documents to prove her eligibility for the scheme. You did not understand what to do. She said, "After seeing me, why do you turn your face? Would you have made the same gesture for your mother? You are bada sahab, but without emotion."

Finally, you find that she is really poor and destitute with no one to care for her. Though she didn't have any documents but dilemma is that giving her the benefits without the documents would be tantamount to bypassing the law.

- Q1. What are the core issues in this case?**
- Q.2 Identify those areas where you are lacking officer-like qualities.**
- Q.3 Whether as an officer you have a low EQ or is it completely absent?**

2. WHISTLEBLOWING: THE ETHICS OF SPEAKING OUT

Context:

Julian Assange, WikiLeaks founder, **pleaded guilty to obtaining and publishing U.S. military secrets** in a deal with the U.S. Justice Department, allowing him to **avoid American prison** and return to Australia.

The agreement required **Assange to admit guilt to a single felony** but considered his five years spent in a UK prison. Assange expressed mixed feelings about the outcome, while his lawyer highlighted concerns for press freedom. The case involved publishing classified documents and raising issues about national security and journalism.

Ethical issues in the WikiLeaks case:

- 1. Public right to information vs. government need for confidentiality:** Balancing citizens' right to know about government actions and the government's necessity to uphold confidentiality in matters of national security.
- 2. Protection of whistle-blowers vs. national security:** Safeguarding individuals who expose wrongdoing while considering threats to national security.
- 3. Media responsibility in handling classified information:** The media's moral duty is to inform the public about government actions while handling dangerous or sensitive information responsibly.

Ethical values demonstrated by Julian Assange:

Julian Assange demonstrated **ethical values of transparency and accountability** by exposing government secrets and military misconduct, emphasizing the public's right to know. He also highlighted the importance of press freedom and challenged the boundaries of journalistic responsibility in the digital age.

What is WikiLeaks?

WikiLeaks is a **non-profit media organization and publisher of leaked documents**, funded by donations and media partnerships. Founded in 2006 by Julian Assange, an Australian editor and activist, it has published classified documents from anonymous sources.

About Whistle-blowers:

Whistleblowing refers to **calling attention to wrongdoing happening** in an organization. Whistleblowing has to do with ethics because it represents a person's understanding, at a deep level, that an action his or her organization is taking is harmful—that it interferes with people's rights or is unfair or detracts from the common good.

Ethical issues with Whistleblowing:

Being disloyal towards an organization v/s sharing knowledge of wrongdoing for the benefit of others and moral commitment towards society. He may also gain mistrust of his fellow workers.



The values that are shown by whistle-blowers:

1. **Courage** – It takes moral courage to stand against your organization and be ready to lose out on stability in one’s life.
2. **Self-sacrifice** – They work for the public interest at the cost of themselves.
3. **Duty bound and respecting the law** – However, there is a dilemma of breaching ethics by breaching the contract with the organization as well.

How can the government encourage whistle-blowing?

1. **Create a policy about reporting illegal or unethical practices**
 - a. Formal mechanisms for reporting violations, such as hotlines and mailboxes.
 - b. Clear communications about the process of voicing concerns, such as a specific chain of command, or the identification of a specific person to handle complaints.
2. **Get endorsement of the policy from top officials** and publicize the organization’s commitment to the process.
3. **Elected and administrative leadership** must encourage ethical behaviour and hold everyone within the organization to the highest standards, including the disclosure of activities that would have a negative impact on the public’s business.
4. **Investigate and follow up promptly** on all allegations of misconduct. Report on these investigations to the council or board.

Indian Examples:

One well-known Indian whistle-blower was **Satyendra Dubey, an IIT graduate** working on a segment of the National Highways Authority of India’s (NHA) Golden Quadrilateral

in Bihar, who wrote directly to the Prime Minister’s Office exposing corruption in the project. He paid with his life for doing so.

Legislations in India regarding Whistleblowing:

1. The government introduced the **Public Interest Disclosure and Protection Of Informers (PIDPI) Resolution** for the logging of complaints against alleged corruption or misuse of office by a government officer or department.
2. **Whistle-blowers Protection Act** is aimed at providing a legislative route for people to file complaints on alleged corruption and misuse of office by public servants. The act has not come into force, and the Rules for it have not been finalised.

3. REINING IN FINANCIAL INFLUENCERS

Context: SEBI has barred regulated entities from making claims about investment returns, aiming to protect investors from misleading information. The regulator has also tightened criteria for stocks in the F&O market, requiring them to meet specific market value and trading volume thresholds.

What are Fin-fluencers?

They are individuals **who use public social media platforms** to share advice and personal experiences about money, investments, stocks, budgeting, property buying, cryptocurrency, and financial trends.

Need for Regulation:

The need for regulations arises due to the surge in unregistered investment advisors providing unsolicited stock tips on social media, alongside companies using influencers to manipulate share prices. This trend poses risks of **fraud, digital data theft, and financial crises**, impacting shareholder wealth, ethics, and corporate reputations.

Ethical issues with finfluencers revolve around several key concerns:

1. **Conflicts of Interest:** Finfluencers may promote certain stocks or financial products without disclosing financial relationships or incentives from companies. This lack of transparency can mislead followers about the impartiality of the advice given.
2. **Misleading Advice:** Some finfluencers may offer financial advice based on personal gain rather than the best interests of their followers. For instance, promoting speculative investments without adequate risk disclosure can lead to financial losses for followers.
3. **Market Manipulation:** Influencers with large followings can potentially manipulate stock prices by promoting or disparaging certain investments. This was

evident during the GameStop saga, where social media influencers contributed to volatile trading conditions.

4. **Lack of Qualifications:** Many finfluencers lack formal financial training or qualifications, yet their advice can carry significant influence. This raises concerns about the credibility and reliability of the information they provide.
5. **Regulatory Compliance:** Compliance with financial regulations, such as disclosure requirements and investment advice licensing, may be overlooked by some finfluencers. This can expose followers to risks associated with unregulated financial advice.

To address ethical issues with finfluencers:

1. Implement stricter regulations and disclosure requirements.
2. Promote transparency in financial advice and conflicts of interest.
3. Educate the public on financial risks and promote literacy.
4. Enforce accountability through penalties for misconduct.
5. Establish industry standards for ethical conduct.

4. NAVIGATING THE NET-NEET CRISIS: ETHICAL INSIGHTS

Context:

The **NET** (National Eligibility Test) and **NEET** (National Eligibility cum Entrance Test) controversy highlights **systemic failures and poor policy implementation** over the years. **Recurrent paper leaks**, exam cancellations, incorrect results, and unexplained grace marks have **eroded trust** in the National Testing Agency (NTA). The recurrent paper leaks and recruitment scams point to the **lack of fairness** in the governance which is one of the **4 principles of virtue ethics**.

About Virtue ethics theory:

1. **Aristotle** is one of the founders of the Virtue Ethics.
2. **Virtue Ethics** focuses on the development of **good character traits (virtues)** rather than on rules or consequences.
3. He says that the **human is a rational animal**. Human has got the ability to reason. This essential characteristic of being rational leads to achieve a particular goal or end which **Aristotle calls virtue**.
4. There are **4 important principles of virtue ethics**: Fairness, Courage, Temperance, Wisdom.
5. **Doctrine of Mean**: Aristotle also says that **virtue is a golden mean**, that which lies in the middle of the two extremes. For example, **courage** as a moral virtue lies **between the two extremes namely cowardice and fool-hardiness**.

Virtues are of two types:

1. **Intellectual virtues** are that which can be taught and learnt. Prudence is one such virtue. We can easily learn from others as to how to be prudent.
2. **Moral virtues** can be achieved by repeatedly doing an action that becomes a habit. These cultivated habits lead to achieving ultimate happiness.

Application to Paper Leaks and Recruitment Scams in India:

1. **Fairness**: Paper leaks and recruitment scams represent a significant **breach of honesty and integrity**. **Upholding honesty** in academic and recruitment processes **ensures fairness and trustworthiness**, which are essential for societal flourishing.
2. **Justice**: These scams create an **unjust advantage for some individuals**, undermining the principle of fairness. Ensuring just and fair practices in examinations and recruitments promotes equality and meritocracy, contributing to societal well-being.

Impact on Individuals and Society:

1. **Individual Character Development**: Engaging in or benefiting from such scams hampers the development of virtuous character traits, promoting greed and dishonesty.
2. **Social Trust and Cohesion**: Scams erode public trust in educational and recruitment institutions, leading to cynicism and societal fragmentation.

Insta Links:

[NET-NEET Crisis: The Reasons Behind India's Failing Exam System](#)

CONTENT FOR MAINS ENRICHMENT

Topic in News	Usage in Answers
<p>1. CRYONICS PRACTICE FOR FREEZING THE HUMAN BODY</p>	<p>Context: Southern Cryonics, an Australian company, has successfully frozen its first client in hopes of reviving him in the future. The process involves cryonics, where the body is <u>preserved at -196°C, aiming for eventual restoration</u> using advanced medical technologies.</p> <p>The experiment involving cryonics raises several ethical concerns.</p> <ol style="list-style-type: none"> 1. Firstly, there's the issue of consent, as the decision to freeze one's body after death may not fully reflect the wishes of the individual or their loved ones. 2. Secondly, there's uncertainty about the efficacy of the procedure and whether it can truly revive individuals in the future, potentially leading to false hope and exploitation of vulnerable individuals. 3. Additionally, the high cost of cryonics raises questions about equity and access to potentially life-saving technologies. 4. The long-term impact on society and the environment of storing frozen bodies indefinitely is uncertain and raises broader ethical questions about the manipulation of life and death.
<p>2. "AIR OF THE ANTHROPOCENE" PROJECT</p>	<p>The "Air of the Anthropocene" project utilizes light painting to visually represent air pollution in India, Ethiopia, and the UK, highlighting <u>significant health risks and initiating global conversations</u> on air quality. Created by <u>artist Robin Price</u> and an environmental scientist at the <u>University of Birmingham</u> to document air pollution levels around the world through photography.</p> <p>This international initiative <u>combines art and science to create photographic evidence</u> of air pollution using <u>digital light painting techniques</u> and low-cost air pollution sensors.</p> <p><u>Particulate matter (PM), including PM10 and PM2.5</u>, is a key focus of the project, with PM concentrations measured in <u>real-time using sensors and visualized</u> through a moving LED array.</p>
<p>3. UNESCO'S NEW TOOLS FOR GREENING EDUCATION</p>	<p>Context: UNESCO has launched the <u>Greening Curriculum Guidance (GCG) and Green School Quality Standards (GSQS)</u> under the <u>Greening Education Partnership</u>.</p> <p>Pillars of Green Education:</p> <ol style="list-style-type: none"> 1. Greening Schools: Ensure schools achieve green accreditation. 2. Greening Curriculum: Integrate climate education into all levels of education. 3. Greening Teacher Training: Build school capacities for climate education. 4. Greening Communities: Enhance community resilience through learning centres.

<p>4. DIETARY PATTERNS IN INDIA</p>	<p>Context: The 2022-23 Household Consumption Expenditure Survey highlights some surprising dietary trends in India, emphasizing vegetable, fruit, pulse, and milk consumption.</p> <p>Key findings:</p> <ol style="list-style-type: none"> Food Expenditure Snapshot: Rural India spends more per capita on milk than on vegetables, fruits, and pulses. Urban areas also prioritize milk over these items. Regional Insights: Rajasthan’s “vegetarian” tag contrasts with lower spending on vegetables, fruits, and pulses. Northeastern states show higher vegetable consumption than Gujarat (despite having a significant Vaishnav-Jain population) Milk Priority: Milk consumption is high, even in states with lower expenditure on vegetables, fruits, and pulses. North, West, and Central Indian states spend more on milk than on eggs, fish, and meat. Non-Vegetarian Trend: Kerala, Goa, West Bengal, Northeastern, Odisha, Jharkhand, and Chhattisgarh prioritize expenditure on eggs, fish, and meat over milk. In India, vegetarianism typically includes dairy but not necessarily veganism. <p>Key terms:</p> <ol style="list-style-type: none"> Vegetarians abstain from meat but consume animal products like dairy and eggs. Vegans avoid all animal products, including dairy, eggs, and honey, relying solely on plant-based foods. Non-vegetarians include meat, poultry, seafood, and sometimes dairy and eggs in their diets. <p>Usage: The data/Examples can be used in Indian Society/ Sociology/ Essay related Questions on food diversity.</p>
<p>5. SCHOOL IN A BOX INITIATIVE</p>	<p>Context: In Assam, amid devastating floods and landslides claiming lives, children in relief camps will receive educational support through a “school in a box” initiative.</p> <p>Designed by UNICEF, these kits cater to children aged 6-18, providing learning materials to ensure education continuity despite displacement and trauma. disasters.</p> <p>The initiative to provide “school in a box” kits during Assam’s floods reflects several ethical values. It prioritizes:</p> <ol style="list-style-type: none"> Compassion and Care: By addressing the educational needs of children amidst trauma, the initiative demonstrates compassion and care for vulnerable populations. Equity and Inclusion: The kits are designed to cater to children aged 6-18, ensuring inclusivity and equitable access to educational resources regardless of age or background. Responsibility and Accountability: Training sessions for officials and grass-roots workers underscore a commitment to responsibly managing relief efforts, ensuring accountability in education and relief camp operations. Empathy and Support: By considering the psychological impact of displacement, the initiative shows empathy and provides essential support to help children overcome trauma and continue their education. Sustainability: Initiatives such as installing sanitary napkin vending machines in relief camps reflect a sustainable approach to addressing broader health and hygiene needs, promoting dignity and well-being.

<p>6. KERALA'S GENDER-NEUTRAL SCHOOL TEXTBOOKS</p>	<p>Context: Kerala's government is promoting <u>gender neutrality</u> by revamping school textbooks to <u>depict men and other family members participating in domestic chores</u>, breaking traditional gender stereotypes.</p> <p>This initiative aims to <u>foster inclusivity among children from an early age</u>. New instructional materials, featuring <u>fathers engaged in kitchen activities</u> traditionally associated with women</p> <p>The initiative to revamp school textbooks and promote gender-neutral education depicts several ethical values:</p> <ol style="list-style-type: none"> 1. Equality: Promotes gender equality by challenging traditional roles and stereotypes. 2. Inclusivity: Encourages an inclusive outlook by representing diverse family dynamics. 3. Shared Responsibility: Highlights the importance of shared household responsibilities. 4. Respect: Fosters respect for all genders by depicting men and women as equal contributors. 5. Empowerment: Empowers children to question and reshape societal norms. 6. Fairness: Advocates for fair treatment and opportunities for all genders in both public and private spheres.
<p>7. CRY LAUNCHES "POORI PADHAI DESH KI BHALAI" CAMPAIGN</p>	<p>Context: CRY's seven-week campaign aims to <u>raise awareness and increase girls' school participation</u>.</p> <p>Only 60% of girls are enrolled in higher secondary education, per the Union Education Ministry. Only <u>three out of every five girls</u> in India reach 11th and 12th standards.</p> <p>About CRY: Child Rights and You is an Indian non-governmental organization that works towards ensuring children's rights. The organization was started in 1979 by Rippan Kapur, an Air India purser. CRY works with 99 grassroots projects across 19 states in India and has impacted the lives of over three million children.</p>
<p>8. SKIN BANK</p>	<p>Context: The Army's Research and Referral Hospital in New Delhi has opened a state-of-the-art skin bank, <u>the first within the Armed Forces Medical Services</u>.</p> <p>The skin bank's main functions include <u>harvesting, processing, preserving, and supplying human skin allografts</u> for burn treatment and polytrauma centres.</p> <p>This initiative aims to <u>revolutionize treatment for severe burn injuries and other skin conditions</u> among service members and their families.</p>

9. DIGITALIZATION IS REVOLUTIONIZING FAE-CAL SLUDGE AND SEP-TAGE MANAGEMENT (FSSM)

Context: Digitalization is revolutionizing faecal sludge and septage management (FSSM) in India, enhancing operational efficiency and sustainability.

Over 1,000 faecal sludge treatment plants (FSTP) have been implemented, but maintaining them remains challenging. Digital monitoring, using sensors, real-time data tracking, and GIS, optimize collection routes, manages treatment facilities, and ensures environmental compliance. Tools like GPS tracking, mobile apps, and GIS technology aid in efficient data collection and mapping.



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Examples:

1. **Odisha’s SUJOG Program:** Utilizes digital platforms for data collection and monitoring across the sanitation value chain.
2. **SaniTrack App (Maharashtra):** Monitors desludging services with GPS tracking.
3. **FSM Tool Box:** Provides comprehensive guidance on planning, designing, and implementing FSSM.
4. **Shit Flow Diagram (SFD):** Assesses sanitation situations for better planning and monitoring.
5. **Geographic Information System (GIS):** Maps sanitation infrastructure for effective planning.
6. **Mobile Apps (SaniTab, mWater):** Streamline field surveys and real-time data collection.
7. **Digital Sensors in Treatment Plants:** Monitor performance and ensure efficiency.
8. **Digital Helpline and Grievance Redressal:** Facilitate reporting and resolving sanitation issues.

Usage: The example can be used in E-governance questions of GS2

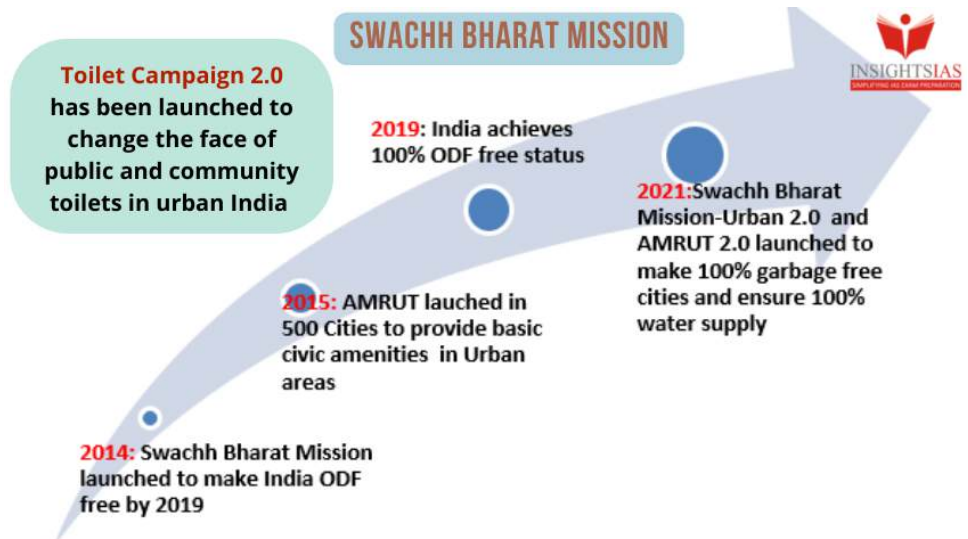
10. SAFAI APNAO, BI-MAARI BHAGAO (SABB) INITIATIVE

Context: MoHUA has launched the **Safai Apnao, Bimaari Bhagao (SABB) initiative** under **SBM-U 2.0** to bolster Urban Local Bodies' readiness for monsoon challenges.

Aim: Aimed at mitigating health risks exacerbated by heavy rainfall, the initiative spans from July 1st to August 31st, 2024. It emphasizes comprehensive cleanliness drives, waste management, water quality assessments, and hygiene promotion across ULBs.

The initiative demonstrates ethical values such as:

1. **Community Care:** Prioritizing community health and well-being through proactive measures.
2. **Transparency:** Ensuring transparency in operations and resource allocation for sanitation efforts.
3. **Collaboration:** Encouraging inter-sectoral collaboration to tackle cleanliness and health challenges effectively.
4. **Equity:** Promoting equal access to sanitation and hygiene facilities across urban areas.
5. **Accountability:** Holding stakeholders accountable for maintaining cleanliness standards and health outcomes.



STATUS	MEANING
ODF	Not a single person found defecating in Open
ODF+	No one defecating in open and well maintained community and public toilets
ODF++	All conditions of ODF+ and toilets with sludge and septage management
Water+	All waste-water is being treated as per CPCB norms before release.

FACTS FOR PRELIMS

GS-1

Art & Culture

1. 10TH INTERNATIONAL YOGA DAY (IYD)

Context:

The Prime Minister highlighted the global Muslim adoption of yoga during the **10th International Day of Yoga in Sri-nagar**, aiming to dissociate yoga from any specific religious connection.

He cited instances like:

1. **Yoga therapy in Turkmenistan's** medical universities
2. Inclusion of Yoga in **Saudi Arabia's education** system
3. **Yoga-specific schools in Mongolia** to emphasize its universal appeal.

Each year on 21 June, the world comes together to observe the International Day of Yoga, a day designated by the United Nations to celebrate the power of yoga in promoting holistic health practices worldwide.

Yoga derives its name from the Sanskrit root 'yuj' which means to join or to unite. It symbolizes the unity of one's mind, body, and spirit with the world outside, through a set of exercises that include breathing techniques, physical postures, and relaxation methods.

Yoga Philosophy:

Yoga process is described in eight stages (ashtanga-yoga, "eight-membered Yoga")

External Aids: The first two stages are ethical preparations.

1. **Yama ("restraint")**, which denotes abstinence from injury falsehood, stealing, lust, and avarice;
2. **Niyama ("discipline")**, denotes cleanliness of body, contentment, austerity, study, and devotion to God.

The next two stages are physical preparations.

3. **Asana ("seat")**, is a series of exercises to make the body supple, flexible, and healthy.
4. **Pranayama ("breath control")** is a series of exercises intended to stabilize the rhythm of breathing in order to encourage complete respiratory relaxation.

The fifth stage,

5. **Pratyahara ("withdrawal of the senses")**, involves control of the senses, or the ability to withdraw the attention of the senses from outward objects.

Mental or internal aids:

6. **Dharana ("holding on")** is the ability to hold and confine awareness of externals to one object for a long period of time.
7. **Dhyana ("concentrated meditation")** is the uninter-

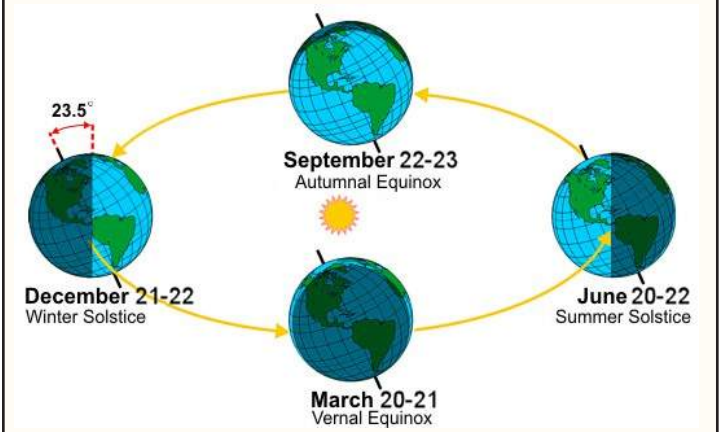
rupted contemplation of the object of meditation, beyond any memory of ego.

8. **Samadhi ("total self-collectedness")** is the final stage and is a precondition of attaining release from samsara, or the cycle of rebirth. In this stage, the meditator perceives or experiences the object of his meditation and himself as one.



About On June 21, the Summer Solstice

It occurs in the **Northern Hemisphere when the Earth's axis** is tilted towards the sun. This results in direct sunlight falling on the Tropic of Cancer. Areas beyond the Arctic Circle experience continuous daylight for about six months. It marks the longest day and shortest night of the year in the northern hemisphere. Conversely, the Southern Hemisphere experiences the opposite conditions during this time.



2. KOZHIKODE: INDIA'S FIRST UNESCO 'CITY OF LITERATURE'

Context: Kozhikode, Kerala, has been declared **India's first UNESCO 'City of Literature'**, a prestigious recognition that

highlights its rich literary heritage and cultural contributions.

About Kozhikode:

- It is located on the **Malabar coast of Kerala**, and was designated **India’s first UNESCO ‘City of Literature’ in October 2023**, under the **UNESCO Creative Cities Network (UCCN)**.
- Known historically as **Calicut**, the city has a rich heritage dating back to medieval times when it was **ruled by the Samoothiris (Zamorins)** and traded spices with Jews, Arabs, Phoenicians, and Chinese.
- Renowned travellers like **Ibn Battuta and Vasco da Gama** visited its shores.
- Today, **Kozhikode boasts over 500 libraries, 70 publishers**, and a strong literary education base, earning it the tag of **‘City of Sculptures’** in 2012.
- June 23 has been declared **‘City of Literature’ Day in Kozhikode**, celebrating its literary achievements and cultural significance.

Significance: The city’s designation opens up new avenues for exploration, cultural tourism and preservation.

Other Indian cities in the UCCN include

1. **Jaipur:** Crafts and Folk Arts (2015)
2. **Varanasi:** Creative City of Music (2015)
3. **Chennai:** Creative City of Music (2017)
4. **Mumbai:** Film (2019)
5. **Hyderabad:** Gastronomy (2019)
6. **Srinagar:** Crafts and Folk Art (2021)

About UCCN:
The **UNESCO Creative Cities Network (UCCN)**, established in 2004, fosters cooperation among cities that prioritize creativity for urban development. Aligned with **Sustainable Development Goal 11 on Sustainable Cities and Communities**, the network encompasses seven creative fields: crafts and folk arts, media arts, film, design, gastronomy, literature, and music.

3. ANNUAL AMBUBACHI MELA

Context:

Devotees are converging at **Guwahati’s Kamakhya temple** for the annual Ambubachi Mela, with festivities underway.

What is Ambubachi Mela?

- **The Ambubachi Mela is an annual Hindu fair** held at the **historic Kamakhya Temple** in Guwahati. It takes place during the **monsoon season, specifically** in the **Assamese month of Ahaar**, around the middle of June.
- The festival celebrates the **yearly menstruation course of goddess Maa Kamakhya** and is also known as **Ameti or Tantric fertility festival** due to its association with the Tantric Shakti cult prevalent in eastern India.

About Kamakhya temple:
It is situated on Nilachal hills (or Kamagiri), and was re-constructed in the **mid-16th century by the Koch dynasty** after being destroyed by **Kala Pahar**. It is revered as one of the **52 Shakti shrines**, where the reproductive organ of Goddess Sati is believed to have fallen. The temple is also a **significant centre for Tantrik worship**, symbolizing the convergence of beliefs and practices between Aryan and non-Aryan communities.

4. WORLD CRAFT CITY

Context:

Srinagar has been **officially recognized** as a **“World Craft City”** by the **World Crafts Council (WCC)**, highlighting its **rich heritage and the exceptional skills of its artisans**.

- This recognition underscores the **city’s longstanding tradition of excellence in crafts** such as **papi-er-mâché, hand-knotted carpets, and pashmina shawls**.
- **Srinagar**, one of the oldest cities in South Asia, has a history of around **1,500 years** and has been a significant hub on the **Silk Route, facilitating the exchange of arts, crafts, and knowledge**.

About WCC:

- Launched in **2014 by World Crafts Council- International**.
- Establishes a dynamic **network of craft cities across the globe**, aligning with the principles of creative economy.
- **Jaipur, Malappuram and Mysore are the other Indian cities that have previously been recognised as World Craft Cities**.

5. DODOL

Context:

The **Goan desert Dodol** is poised to **receive a Geographical Indication (GI) tag**.

- While GI tags are valuable for commercial purposes by linking products to their geographic origins and unique qualities, **they often overlook the dynamic and migratory nature of food culture**.

About GI Tag:

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

Protection) Act of 1999.

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

Society

6. SATNAMI COMMUNITY

Context:

The **Satnami community in Chhattisgarh** protested the desecration of a sacred structure, leading to violence where they attacked the SP office, torched vehicles, and threw stones at police personnel.

Who are Satnamis?

- The Satnamis, **a significant Scheduled Caste (SC) community** in Chhattisgarh, trace their **roots back to Bir Bhan of Narnaul, Haryana**, who founded the sect in **1657**.
- They follow the teachings of **Saint Ravidas** and prioritize honesty, justice, and proper earning.
- Satnamis hold **Mini Mata in high regard**, as she was the **first female Member of Parliament from Chhattisgarh**, winning the 1955 by-election to enter the Lok Sabha.

More about Satnami:

1. **Satnami revolt of 1672:** A rebellion **against Mughal rule led by the Satnamis**, triggered by the killing of a Satnami by a Mughal soldier. They seized control but were eventually suppressed by Aurangzeb, facing brutal retaliation.
2. **Satnami revival:** In 1820, **Saint Ghasidas founded a significant Satnami group in Chhattisgarh**, providing religious and social identity. His teachings emphasized monotheism, **ethical conduct, equality, and dietary restraint**, propagated through his work **Nirvan Gyan**. Satnamis have historically navigated their position **within the broader Hindu hierarchy**, influenced by connections with the **Kabir Panth**. A section of the **Sanjay-Dubri Tiger Reserve** was renamed **Guru Ghasidas National Park** by the Chhattisgarh government in honour of Guru Ghasidas.

Geography

7. STROMATOLITES

Context: Researchers have discovered living stromatolites on **Sheybarah Island in the Red Sea, Saudi Arabia**.

What are Stromatolites?

Stromatolites are **layered rock formations created by microbial communities**, representing some of the earliest evidence of life on Earth. These structures are formed as layers of sediment accumulated over time, trapping and binding microorganisms like **cyanobacteria**.

As these **microorganisms grow and photosynthesize**, they produce layers of carbonate minerals, gradually building up the **stromatolite structure**. Despite their simple appearance, stromatolites played a crucial role in **shaping Earth's early environment** and are considered significant in the study of early life and evolutionary history.



Modern stromatolites are rare, found mostly in extreme environments like Shark Bay, Australia. The discovery on Sheybarah Island provides a new site for studying these ancient life forms. Understanding these stromatolites can offer insights into **early life on Earth and aid in the search for life on other planets like Mars**.

8. AUTOMATIC WEATHER STATION (AWS)

Context:

Recently, an automatic weather station (AWS) in Mungeshpur, Delhi, recorded a **temperature of 52.9°C**, which quickly made headlines. However, the India Meteorological Department (IMD) discovered that this reading was **3°C higher than the actual temperature** due to a faulty sensor.

What is AWS?

An **Automated Weather Station (AWS)** is a **meteorological station that transmits observations automatically**. It uses four main sensors: wind, temperature/humidity, pressure, and rainfall. Air temperature is measured in degrees Celsius using an electrical resistance thermometer, which operates on the principle that electrical resistance varies with temperature changes.

Challenges with AWS: AWS accuracy becomes unreliable beyond certain temperature thresholds. Issues include improper calibration, incorrect placement on concrete structures,

and lack of regular maintenance.

Other Heat Measuring Devices: High temperatures can be measured using a thermometer in a Stevenson Screen, a wooden enclosure that protects instruments from precipitation and direct heat radiation while allowing air circulation.

About India Meteorological Department (IMD): Established in 1875, IMD is the principal government agency for meteorology and related subjects. It is one of six Regional Specialized Meteorological Centres of the World Meteorological Organization, under the Ministry of Earth Sciences. Headquarters are in New Delhi, with six regional meteorological centres.

9. COLD LAVA

Context:

A volcanic eruption at Mount Kanlaon in the Philippines led to rivers of cold lava, or lahar.

About Cold Lava:

- Cold lava, or “lahar,” is a hazardous flow of volcanic material, debris, and water that descends rapidly from volcanoes, resembling a fast-moving landslide rather than molten lava.
- This dense mixture forms when water interacts with volcanic ash and debris on a volcano’s slopes, creating a river-like flow that can be more destructive than molten lava due to its speed and force.
- The term “cold lava” is misleading, as it remains hot internally but appears and behaves like wet concrete.
- Driven by gravity and the volume of displaced material, lahars can travel far from the volcano’s summit, picking up additional debris and increasing in volume and destructive power.



10. NOTIFIED DISASTERS

Context: The ongoing discussion on including heatwaves as a notified disaster under the Disaster Management Act (DM

Act) has reopened due to the extreme heat in many parts of India.

- Currently, heatwaves are not considered disasters under the Act, which was enacted after the 1999 Odisha super-cyclone and the 2004 tsunami.
- The Act defines a disaster as a catastrophic event resulting in substantial loss of life, property, or damage to the environment, beyond the community’s coping capacity.
- States have prepared heat action plans to deal with extreme heat impacts, but financial constraints hinder their implementation.
- The reluctance to include heatwaves as a notified disaster stems from concerns about the financial implications and the difficulty in attributing deaths solely to heatwaves.
- While some states have added heatwaves as local disasters, the Centre has resisted national notification, citing financial and practical difficulties.

The Disaster Management Act of 2005:

It regulates the allocation and utilization of resources from the National Disaster Response Fund (NDRF) and the State Disaster Response Fund (SDRF). These funds are dedicated to managing and responding to notified disasters. Currently, there are 12 such disasters, including cyclones, droughts, earthquakes, fires, floods, tsunamis, hailstorms, landslides, avalanches, cloud bursts, pest attacks, and frost & cold waves. In 2020, the government designated COVID-19 as a notified disaster as a special one-time measure

11. BRAZIL’S PANTANAL WETLANDS

Context:

Brazil’s Pantanal wetlands are facing an unprecedented surge in wildfires due to extremely dry conditions.

What are Pantanal?

- It is the world’s largest tropical wetland, spanning across Bolivia, Brazil, and Paraguay.
- Fed by the Paraguay River and its tributaries, it covers an estimated area of 140,000 to 195,000 square kilometres.
- During rainy seasons, about 80% of the floodplains are submerged, fostering a diverse range of aquatic plants and supporting numerous animal species.
- Designated as a National Heritage in Brazil, it faces threats from activities like cattle grazing, pollution, and infrastructure development.
- Despite its ecological significance, less than 5% of the Pantanal is protected, with most of it under private ownership.



Functioning of Parliament and State Legislatures

2. CENTRAL EXCISE BILL, 2024

Context:

The Central Board of Indirect Taxes & Customs (CBIC), operating under the **Department of Revenue, Ministry of Finance**, has issued an invitation for stakeholders to provide input on the draft '**Central Excise Bill, 2024**' by June 26, 2024.

- The Bill aims to **enact a comprehensive modern central excise law** repealing old and redundant provisions and promoting ease of doing business.

About Excise duty:

- **Excise duty is an indirect tax** collected by retailers or intermediaries from customers at the point of sale.
- It is paid when goods move from manufacturing units to warehouses. Governed by two key acts, the **Central Excise Act of 1944** handles levy and collection, while the **Central Excise Tariff Act of 1985** classifies goods and sets duty rates.
- With the implementation of Goods and Services Tax (GST), many excise duties were subsumed, **leaving only petroleum and liquor subject to excise duty**.
- Central GST replaced excise duty in most cases, while state governments collect excise duty on alcohol, alcoholic preparations, and narcotic substances, referred to as **"State Excise" duty**.

GS-2

Salient features of Indian Constitution

1. FREEDOM OF ARTISTIC EXPRESSION IN INDIA

Context:

Karnataka bans the **Hindi film 'Hamare Baarah'** due to communal concerns, suspending its exhibition and trailers for two weeks or until further notice.

About Freedom of artistic expression:

It is the principle that artists should be free from legal or conventional constraints in creating their art. In India, the Supreme Court affirmed this **right for movies under Article 19(1)(a) of the Constitution**. International agreements like the **Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights** also uphold this freedom. Films are considered differently due to their unique ability to combine visuals, sound, and emotions in a potent manner, making prior censorship necessary to prevent potential negative impacts on viewers' minds.

3. SPEAKER PRO TEM OF LOK SABHA

Context:

Senior Congress **leader K Suresh, as the seniormost member of the Lok Sabha, is expected to be appointed as the pro-tem Speaker** for the first session of the 18th Lok Sabha.

What is Speaker Pro-tem?

The **Speaker pro-tem is a temporary presiding officer in the Lok Sabha**, appointed by the President before the first session of a new Lok Sabha. This role is typically given to the senior member. The **Speaker pro-tem's main duty** is to administer oaths to the new MPs until a permanent Speaker is elected.

Role of Pro-tem Speaker:

1. Administers oaths to new MPs.
2. Presides over the House's initial proceedings.
3. Ensures the smooth transition of parliamentary duties.

Selection Process:

1. Chosen by the **President from the seniormost members of the Lok Sabha**.
2. Assisted by three other senior members for oath administration.
3. The President administers the **oath to the pro-tem**

Speaker, who then swears in other MPs.

4. DEPUTY SPEAKER

Context:

The **Deputy Speaker** post in the Lok Sabha has been vacant from 2019 to 2024.

- With the **Opposition's increased strength**, they are pushing for this position, **which they held continuously from 1990 to 2014.**

About Deputy Speaker:

- The **role of the Deputy Speaker**, outlined in **Articles 93 and 95(1) of the Constitution**, is to perform **the duties of the Speaker when the position is vacant.**
- The **Deputy Speaker is elected by a simple majority in the Lok Sabha**, typically during the second session of the new House.
- Despite the constitutional requirement for both Speaker and Deputy Speaker to be elected "as soon as may be," **there is no specified timeframe, allowing delays in appointment.**

5. LEADER OF OPPOSITION

Context:

The position of **Leader of Opposition** in Lok Sabha has been filled, which was **vacant for 10 years** because **no party had numbers equalling a tenth of the strength of the House**, which has been by practice a requirement to lay claim to the post.

- The role of the Leader of Opposition in the Lok Sabha includes **representing the opposition in the House, voicing the opposition's views, and facilitating the smooth functioning of parliamentary business.**
- The position, **officially described in The Salary and Allowances of Leaders of Opposition in Parliament Act, 1977**, is occupied by the **leader of the largest party in opposition.**
- In practical terms, **the Leader of Opposition participates in high-powered committees for key appointments, such as the Director of CBI and the Central Vigilance Commissioner.**
- This **role is crucial for ensuring checks and balances** within the government.
- The Leader of Opposition **sits in the front row and enjoys certain ceremonial privileges.**

6. RENAMING THE STATES

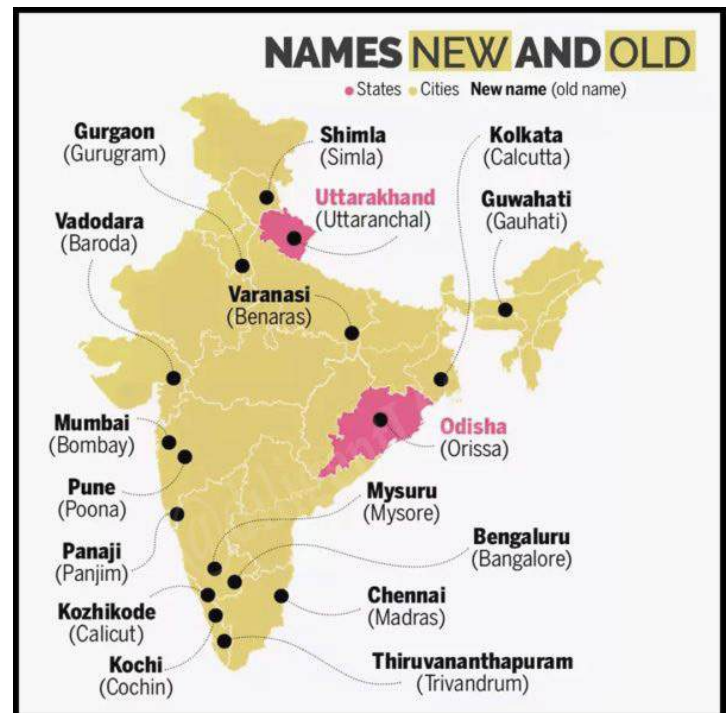
Context:

The **Kerala Legislative Assembly** unanimously passed a resolution, **to amend the Constitution** and change the **state's name from 'Kerala' to 'Keralam'.**

- This resolution, calls for **invoking Article 3 of the Indian Constitution** to update the name in **the First Schedule.**

Procedure for renaming the states:

- Renaming a state in India is **governed by Article 3 of the Constitution**, which **empowers Parliament to alter the name of any state by law.**
- The process can be initiated by **either Parliament or the State Legislature.** A bill must **be introduced in Parliament on the recommendation of the President, who then refers it to the state legislature for their views.**
- The **bill is passed in each house by a simple majority.** Once the President assents, **the name change is recorded in the First and Fourth Schedules of the Constitution.**



Judiciary

7. GOA'S FIRST "LIVING WILL"

Context:

Justice M.S. Sonak, of the Bombay High Court's Goa Bench, became **the first person in Goa to register a "living will"—an advance medical directive specifying actions for when he cannot make decisions.**

About Living Will (Advance Medical Directive):

- A living will is a written document where a **person outlines their medical treatment preferences** in advance, to be followed if they become incapacitated or unable to communicate.
- It's a voluntary decision.
- The **Supreme Court, in the Common Cause vs. Union of India & Anr. (2018)** case, ruled that a person in a persistent vegetative state can opt for passive euthanasia, such as withdrawing life support.

- A living will **allows individuals to refuse medical treatment** in the event of a terminal illness.
- Goa is the first state to implement these directives formally.
- The living will **must be drafted in the presence of two witnesses**, certified by a gazetted officer or notary, and sent to the District Collector for safekeeping.

8. DOCTRINE OF MERGER AND THE RULE OF STARE DECISIS

Context:

The Supreme Court emphasized that its power under Article 142 of the Indian Constitution is an exception to the doctrine of merger and the rule of stare decisis, aiming to achieve complete justice between parties.

What is the Doctrine of Merger and the Rule of stare decisis?

- The doctrine of merger is founded on the **principles of court decorum and propriety**.
- It holds that when **an appellate court issues an order**, the lower court's order becomes absorbed into it.
- This principle ensures **clarity in enforcing decisions when multiple orders exist from different levels of the judiciary**.
- Essentially, it dictates that the superior court's ruling takes precedence, merging with and superseding the lower court's decision.
- **Although not codified**, this doctrine maintains judicial discipline, guiding subordinate courts in their proceedings.
- **In contrast, the doctrine of stare decisis** mandates that courts adhere to prior judicial decisions when faced with similar legal issues. These decisions, known as precedents, serve as guiding principles for future cases, creating a legal framework for consistent judicial decisions based on past rulings.

9. SELF-DECLARATION CERTIFICATE MUST FOR ADVERTISERS

Context:

The Supreme Court has mandated that all advertisers and advertising agencies submit a **'Self-Declaration Certificate' before releasing any advertisements** starting from June 18, 2024.

For TV and radio ads, this certificate must be submitted on the **Broadcast Seva Portal**, and for print and digital media ads, on the **Press Council of India Portal**. This certificate must confirm that the advertisement does not contain **mis-**

leading claims and complies with regulatory guidelines. The portals for submission will be activated on June 4, 2024, and ongoing ads are currently exempt from this requirement. This directive aims to enhance transparency and responsible advertising practices.

Significance:

The Self-Declaration Certificate (SDC) for advertisements is significant as it ensures transparency and accountability by preventing misleading advertisements and holding manufacturers, promoters, and advertisers responsible. It also protects consumers by preventing violations of their rights, unfair trade practices, and false advertisements that harm public interest. Additionally, it supports **better implementation of legislation and rules, such as the 2022 guidelines** for preventing misleading advertisements.



About the Press Council of India (PCI):

It was **established in 1979 under the Press Council Act, 1978**, and is a statutory quasi-judicial autonomous authority that preserves press freedom and maintains high standards in newspapers and news agencies in India. The PCI consists of a Chairman, who is typically a **retired Supreme Court judge, and 28 members**, with the Chairman nominated by a committee including the Chairman of the Rajya Sabha, the Speaker of the Lok Sabha, and an elected member from the Council.

Related information:



10. MERCY PETITION

Context:

The President of India has **rejected the mercy plea** of a member of **the banned group Lashkar-e-Taiba** convicted for the 2000 Red Fort attack.

About Mercy Petition:

- A mercy petition is a **formal request made by a person sentenced to death or imprisonment** seeking **leniency from the President or Governor**.
- This process is available in countries like the USA, UK, Canada, and India.
- In India, it is tied to the fundamental right to **life under Article 21 of the Constitution**.

Constitutional Framework:

Article 72: Grants **the President the power to pardon, relieve, respite, or remit punishments** or to **suspend, remit, or commute sentences**, including:

- Sentences by Court Martial**
- Sentences for offences under Union laws**
- Death sentences**

Article 161: Grants similar powers to State Governors for offences under State laws.

Fate of petitions:

- At 45, R Venkataraman rejected the maximum number of mercy petitions.
- President Pranab Mukherjee comes second as he has rejected 31 of the 33 petitions he has received from convicts
- S Radhakrishnan, Zakir Husain and V V Giri received 57, 22 and 3 mercy petitions, respectively, and all deaths were commuted to life.
- K R Narayanan and A P J Abdul Kalam kept pending almost all pleas they received.

Constitutional and Non-Constitutional Bodies

11. NHRC ON HUMAN TRAFFICKING

Context:

NHRC recommends **all states appoint an 'anti-human trafficking nodal officer'** not below the rank of a state government secretary or inspector general of police to combat trafficking effectively.

The Commission also calls for **setting up District Anti-Human Trafficking Units (DAHTU)** headed by a **deputy SP to monitor** and prevent trafficking incidents. It urges state governments to take stringent measures, including **rehabilitation of victims and spreading awareness to eradicate these practices**.

About Human trafficking:

It is defined as the **recruitment, transportation, transfer, harbouring, or receipt of people through force**, fraud, or deception to exploit them for profit (UN). It remains a challenge with **2,250 cases reported in India in 2022**. Economic, political, and cultural factors contribute to trafficking. Initiatives like the **Immoral Traffic Prevention Act, Anti-Human Trafficking Units, Cri-MAC, and Mission Shakti** aim to prevent and combat trafficking at global and national levels.

About NHRC:

NHRC-India	
About	It is a statutory body established on 12 October 1993 (in conformity with the Paris Principles), under the Protection of Human Rights Act (PHRA) 1993 [Amended in 2019] .
Objective	A watchdog for the promotion and protection of the human rights of citizens of India. The PHRA defines Human Rights as the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India.
Composition (13)	A Chairperson, who has been a Chief Justice of India or a Judge of the SC. 1 member, who is, or has been, a Judge of the SC. 2 member, who is, or has been, the Chief Justice of an HC. 3 Members, out of which at least one shall be a woman to be appointed from amongst persons having knowledge or practical experience in matters relating to human rights. 7 ex officio members – NCSC, NCST, NCBC, NCW, National Commission for Minorities, National Commission for Protection of Child Rights and the Chief Commissioner for Persons with Disabilities.

<p>A p p o i n t - m e n t</p>	<p>By the President of India, on the recommendation of a committee consisting of – The PM (Chairperson), The Union Home Minister, The LoP in the Lok Sabha, The LoP in the Rajya Sabha, The Speaker of the Lok Sabha, The Deputy Chairman of the Rajya Sabha.</p> <p>The sitting Judge of the SC or sitting Chief Justice of any HC can be appointed only after consultation with the CJL.</p>
<p>F u n c t i o n s</p>	<p>The protection of human rights and recommend measures for their effective implementation.</p> <p>Enquiry into complaints of violation of human rights or negligence in the prevention of such violation by a public servant.</p> <p>Studies treaties and international instruments and makes recommendations for their effective implementation to the Gol.</p> <p>Review factors that inhibit the enjoyment of human rights and recommend appropriate remedial measures.</p> <p>Undertake and promote research in the field of human rights.</p> <p>To visit jails and study the condition of inmates.</p> <p>Engage in human rights education among various sections of society and promote awareness among the masses.</p> <p>Encourage the efforts of NGOs and institutions working in the field of human rights literacy, etc.</p>

12. FSSAI

Context:

FSSAI directs companies to stop claiming “100% fruit juice” on labels and ads due to high sugar content.

- As per [FSSAI](#), **there is no provision of such claims as per Food Safety and Standards (Advertising and Claims) Regulations, 2018.**
- The products must be labelled in accordance with the [Food Safety and Standards \(Labelling and Display\) Regulations, 2020.](#)
- In the ingredient list, the word “**reconstituted**” must be mentioned against the name of the juice. If added nutritive sweeteners **exceed 15 gm/kg, product must be labelled as ‘Sweetened juice’.**

About FSSAI:

The Food Safety and Standards Authority of India (FSSAI) is an **autonomous body established under the Food Safety and Standards Act of 2006.** It consolidates various food-related laws and aims to ensure food safety and quality in India.

FSSAI regulates food businesses, enforces safety laws, monitors quality, conducts research, provides training, and promotes food fortification and organic food. It operates under the **Ministry of Health & Family Welfare**, with headquarters in New Delhi and regional offices across the country.

Governance

13. SPECIAL CATEGORY STATUS (SCS)

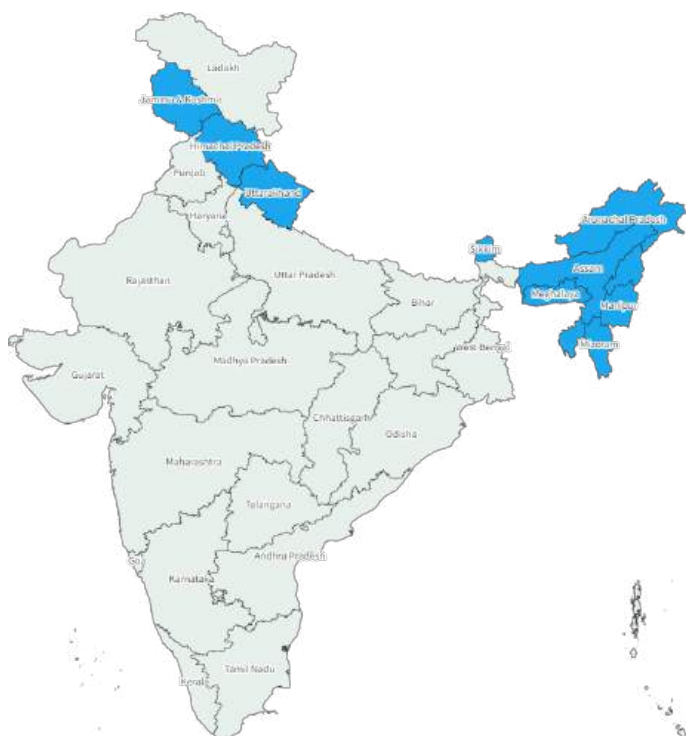
Context:

The strong showing of Chandrababu Naidu’s Telugu Desam Party (TDP) and Nitish Kumar’s Janata Dal-United (JD(U)) in the 2024 Lok Sabha elections has reignited their calls for [special category status \(SCS\)](#) for their respective states, Andhra Pradesh and Bihar.

About SCS:

Special Category Status (SCS)	Description
<p>About SCS</p>	<p>Special Category Status (SCS) is a classification granted by the Centre to assist in the development of states facing geographical and socio-economic disadvantages. Introduced in 1969 on the recommendations of the Fifth Finance Commission, it was initially granted to Jammu & Kashmir, Assam, and Nagaland. Later, states like Sikkim and Tripura were also included. The SCS States used to receive grants based on the Gadgil Mukherjee formula. However, after the recommendations of the 14th Finance Commission, SCS was stopped for any new states.</p>
<p>Current Status</p>	<p>No new states have been granted SCS. Special funding patterns for North Eastern and Himalayan states are based on recommendations from a Sub-Group of Chief Ministers, not through SCS.</p>
<p>Factors for SCS</p>	<p>Before granting SCS to a state, five factors were considered: hilly and difficult terrain, low population density and/or significant tribal population, strategic location along international borders, economic and infrastructural backwardness, and non-viable nature of state finances.</p>
<p>States with SCS</p>	<p>Currently, 11 states in India have SCS: Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Uttarakhand.</p>

Benefits of SCS	States with SCS receive Centre-State funding from centrally sponsored schemes in a more favourable ratio of 90:10 compared to general category states. They also enjoy tax concessions and exemptions to attract investment.
Demand from Bihar and Andhra Pradesh	Bihar and Andhra Pradesh have been demanding SCS. Bihar's demand is based on its low per capita income and high poverty rates. Andhra Pradesh demands SCS due to revenue loss after the 2014 bifurcation , as promised by former Prime Minister Manmohan Singh.



About IRDAI:
The **Insurance Regulatory and Development Authority of India (IRDAI)** is a **statutory body under the Ministry of Finance**, Government of India, regulating the insurance industry. **Established in 1999, it's headquartered in Hyderabad, Telangana.** Recently, IRDAI directed health insurance providers to create specialized policies for senior citizens and **removed the age limit for purchasing health insurance policies**, effective April 1, 2024. It operates with a **10-member body appointed by the government**, including a chairman and both full-time and part-time members.

15. GREAT SCHEME

Context:

The **Ministry of Textiles** has approved **Grant for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT) schemes** for startups in technical textiles.

- It is part of the **National Technical Textiles Mission (NTTM)**.
- Under the GREAT scheme, grant-in-aid, typically **up to INR 50 lakhs, over 18 months** will be provided.
- The scheme aims to harness India's talent and expertise in the technical textiles sector to introduce innovative products and technologies to the market.

About Technical textiles:

They are specialized fabrics with diverse applications in industries like automotive, construction, healthcare, and more. Their demand stems from a country's development and industrialization. These textiles are categorized into **12 segments based on their usage, including Agrotech, Meditech, Mobilttech, Geotech, and others.** For instance, Mobilttech covers products like seat belts and airbags in vehicles, while Geotech includes materials for soil erosion control.

14. NATIONAL HEALTH CLAIM EXCHANGE

Context:

The Health Ministry and **IRDAI** are collaborating to **launch the National Health Claim Exchange (NHCE)**, aiming to streamline healthcare access and claims processing.

What is NHCE?

NHCE is a **communication protocol facilitating the exchange of health claim information** between payers, providers, and beneficiaries. NHCE will **centralize health claims, enabling seamless interoperability, improving efficiency, and reducing administrative burdens** on hospitals. Twelve insurance companies and one TPA have integrated with NHCE. Under the **Digital Health Incentive Scheme**, hospitals receive financial incentives for digital health transactions through NHCE. **Current Claim Processing:** The existing process lacks standardization and is mostly manual, leading to inefficiencies and variations across insurers and providers.

	Agrotech Horticulture + landscape gardening, agriculture + forestry, animal keeping		Meditech Hygiene, medicine
	Buildtech Membrane, lightweight + massive construction, engineering + industrial building.		Mobilttech Cars, ships, aircraft, trains, space travel
	Clothtech Garments, shoes		Okottech Environmental protection, recycling, waste disposal
	Geotech Road infrastructure, Railways, Irrigation and Hydraulic structures, Waste Landfills, Dams etc.		Packtech Packaging, protective-cover systems, sacks, big bags, container systems
	Homotech Furniture, upholstery + interior furnishing, rugs, floor coverings		Protech Person and property protection
	Indutech Filtration, cleaning, mechanical engineering, chemical industry		Sporttech Sport and leisure, active wear, outdoor, sport articles.

About The National Technical Textiles Mission:

It was **approved in 2020, and aims to elevate India** as a global leader in technical textiles and boost **domestic usage from USD 40 billion to USD 50 billion by 2024**. Operated under the Ministry of Textiles, it **spans four years with key components** focusing on research, market development, exports, and education. India's technical textiles sector, **currently at USD 40 billion with an 8% share** in the global market, targets accelerated growth to 15-20% annually to compete with major players like the USA, Europe, China, and Japan.

16. SOLID WASTE MANAGEMENT CESS

Context:

Bengaluru's BBMP proposes a **monthly Solid Waste Management (SWM) Cess** of ₹100 per household, as allowed by the **Solid Waste Management Rules, 2016**.

Solid waste includes discarded items from households and businesses. In India, **approximately 95% of waste is efficiently** collected daily, but only about half undergoes treatment, leaving nearly a third unaddressed.

What is SWM Cess?

Solid Waste Management (SWM) Cess is a **fee levied by local authorities, such as municipal corporations, on households or businesses** for the collection, transportation, and disposal of solid waste. This cess is intended to fund and support solid waste management initiatives, including waste collection, segregation, treatment, and disposal.

17. NATIONAL FORENSIC INFRASTRUCTURE ENHANCEMENT SCHEME (NFIES)

Context:

The Union Cabinet has approved the **National Forensic Infrastructure Enhancement Scheme (NFIES) – a central sector scheme**.

- This scheme aims to **enhance forensic investigation capabilities** across India by **establishing new campuses of the National Forensic Sciences University (NFSU)** and setting up **additional Central Forensic Science Laboratories**.
- The initiative **responds to the new criminal laws effective from July 1**, which mandate forensic investigations for serious offences.

18. E-SAKSHI MOBILE APPLICATION

Context:

The **Ministry of Statistics and Programme Implementation (MoSPI)** organized a two-day training workshop for the **revised fund flow procedure under the MPLAD Scheme** using the e-SAKSHI Portal.

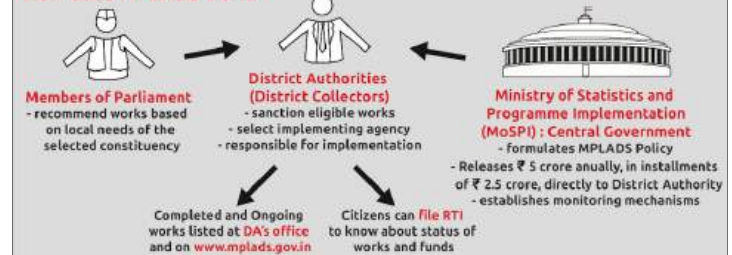
What is the e-SAKSHI Portal?

eSAKSHI portal is an **end-to-end solution for efficient and transparent implementation** of the MPLAD scheme.

About MPLAD:

1. **Type:** Central Sector Scheme
2. **Ministry:** Ministry of Statistics and Programme Implementation
3. **Allocation:** Rs. 5 crore per MP for developmental works to create durable community assets based on local needs.
4. **Funds:** Non-lapsable, carried forward to the next year.
5. **Allocation Targets:** At least 15% for Scheduled Caste areas and 7.5% for Scheduled Tribe areas.

How does MPLADS work?



19. FAST TRACK IMMIGRATION TRUSTED TRAVELLER PROGRAMME

Context:

The Union Home Minister inaugurated **the 'Fast Track Immigration Trusted Traveller Programme' (FTI-TTP)**.

- This initiative aims to **expedite immigration for pre-verified travellers, reducing airport crowding**.
- Jointly developed by the **Ministries of Home Affairs and Civil Aviation** and the Bureau of Immigration, the **program uses e-gates for automated checks**.

Initially available at major airports, it will first serve Indian citizens and OCI cardholders, later expanding to foreign travellers.

20. ULLAS - NEW INDIA LITERACY PROGRAMME (NILP)

Context:

Recently **Ladakh** has been **declared fully functionally literate** under **the ULLAS – Nav Bharat Saaksharta Karyakram**, achieving a **literacy rate of over 97%**.

The **ULLAS - Nav Bharat Saaksharta Karyakram (New India Literacy Programme)**, a centrally sponsored scheme from 2022-2027 aligned with NEP 2020. **The scheme has five components**, namely;

- **Foundational Literacy and Numeracy**,
- **Critical Life Skills** (which include, financial literacy, digital literacy, legal literacy, healthcare and awareness, childcare and education, family welfare, etc.),
- **Basic Education** (includes preparatory (classes 3 - 5), middle (classes 6- 8), and secondary stage (classes 9-12) equivalency),
- **Vocational Skills** (Skill development will be a part of the continuous learning process for neo-literates to obtain local employment),
- **Continuing Education** (This includes engaging holistic adult education courses in arts, sciences, technology, culture, sports, recreation, as well as other topics of interest or use to local learners).

International Relations

21. DAG HAMMARSKJOLD MEDAL

Context:

Naik Dhananjay Kumar Singh, an **Indian peacekeeper who served with the UN Stabilisation Mission in the Democratic Republic of Congo (MONUSCO)**, will be posthumously honoured with the **prestigious Dag Hammarskjöld medal**.

Dag Hammarskjöld Medal:

1. **Purpose:** The Dag Hammarskjöld Medal is a posthumous award given to members of peacekeeping operations who have lost their lives in service under the UN flag.

2. **Inception:** The first medal was presented in 1998 to the family of Dag Hammarskjöld.
3. **Namesake:** Dag Hammarskjöld served as the Secretary-General of the United Nations from 1953 until his death in 1961.

India, the second-largest contributor to UN Peacekeeping, has deployed over 6,000 personnel across various missions and has seen nearly 180 peacekeepers make the ultimate sacrifice.

International Day of UN Peacekeepers

1. **Established:** By the UN General Assembly in 2002
2. **Purpose:** To honour all peacekeepers and those who have lost their lives in the line of duty
3. **2024 Theme:** *'Fit for the future, building better together'* focuses on the adaptability of UN Peacekeeping for future conflicts

About MONUSCO

1. **Establishment:** By the UN Security Council.
2. **Transition:** It took over in 2010, from an earlier UN peacekeeping operation that is the **United Nations Organization Mission in the Democratic Republic of the Congo (MONUC)**
3. **Scale:** Employs approximately 16,300 individuals, making it one of the largest UN peacekeeping efforts.
4. **Primary Role:** Protects civilians from violence, especially in conflict-prone areas like North Kivu.
5. **Innovation:** First UN mission to use UAVs for monitoring.
6. **Intervention Brigade:** Authorized in 2013 for targeted offensive operations against armed groups.

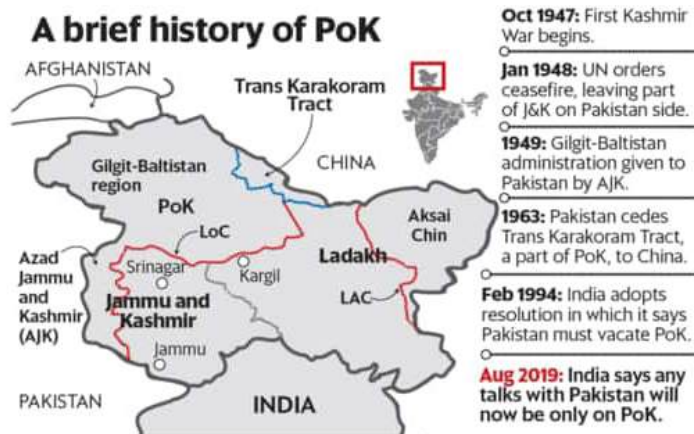
22. PAKISTAN OCCUPIED KASHMIR (POK)

Context:

Pakistan's government has **acknowledged before the Islamabad High Court** that **Pakistan Occupied Kashmir (PoK) is a foreign territory**.

About PoK:

- PoK was historically part of the **princely state of Jammu and Kashmir**, which acceded to **India in 1947 after the Partition**.
- It consists of two **ethnically and linguistically** different regions: **Mirpur-Muzaffarabad region and Gilgit-Baltistan region**.
- However, the region was **illegally occupied by Pakistan in 1947** following an invasion by **Pashtun tribesmen and the Pakistani Army**.



23. UN ASSISTANCE MISSION FOR IRAQ (UNAMI)

Context:

The UN Security Council **voted to end the UN mission in Iraq (UNAMI) that was set up after the 2003 US-led invasion.** UNAMI's job was to **help Iraq rebuild after the war and restore a government.** The resolution doesn't mention the geographical features of Iraq.

Key points:

- UNAMI will cease operations by **December 31, 2025.**
- Iraq wants to **manage its own security and stability.**
- The resolution **supports Iraq's reform efforts** and helps with remaining issues from the Saddam Hussein era.
- Both the US and Russia agree **Iraq is ready for self-reliance.**

24. INTERNATIONAL HEALTH REGULATIONS (IHR 2005)

Context:

The 77th **World Health Assembly adopted amendments to the International Health Regulations (IHR 2005),** incorporating 300 proposals by member states following the Covid-19 pandemic.

- Also, decided to extend the **mandate of the Inter-governmental Negotiating Body (established in 2021)** to finish its work to negotiate a **Pandemic Agreement within a year.**

Aim: These amendments aim to **enhance countries' readiness and response to Public Health Emergencies of International Concern** and Pandemic Emergencies.

About International Health Regulations (IHR):

1. **Successor:** International Sanitary Regulations (1951).
2. **Aim** Legally binding framework defining countries'

rights and obligations in handling cross-border public health events and emergencies.

3. **Members:** Includes 194 WHO Member States, plus Liechtenstein and the Holy See.
4. **Need for Amendments:** Experience from epidemics like Ebola and COVID-19 emphasized the necessity for enhanced public health surveillance, response, and preparedness mechanisms globally.

Key Amendments:

1. **Definition of Pandemic Emergency:** Defined as a communicable disease with wide geographical spread or high risk, exceeding national health system capacities.
2. **Coordinating Financial Mechanism:** Addressing needs and priorities of developing countries.
3. **States Parties Committee:** Facilitate effective IHR implementation.
4. **National IHR Authorities:** Improve coordination among countries.

About World Health Assembly (WHA):

The World Health Assembly (formed in 1948) is the forum through which the **World Health Organization** is governed by its 194 member states. It is the world's highest health policy setting body and is composed of health ministers from member states

25. NON-PERMANENT MEMBERS OF THE UNSC

Context:

Pakistan, Panama, Somalia, Denmark, and Greece have been elected as non-permanent members of the **UN Security Council** for a two-year term starting in 2025. This marks **Pakistan's 8th term** as a non-permanent member

1. **India** has been elected as a **non-permanent member of the UN Security Council 8 times,** the last being 2021-2022.

About UNSC:

The UNSC is one of the six principal organs of the UN, along with the **UNGA, Economic and Social Council, Trusteeship Council, International Court of Justice,** and UN Secretariat. **It consists of 15 members, with five permanent members** (China, France, Russia, the UK, and the US) holding veto power. The UNSC has primary responsibility for maintaining international peace and security. **United Nations General Assembly (UNGA) annually elects** five non-permanent members of the **United Nations Security Council (UNSC) for a two-year term** through a secret ballot.

26. DRAFT RECIPROCAL EXCHANGE OF LOGISTICS AGREEMENT (RELOS)

Context:

Russia has approved a draft logistics agreement with India, ending years of delays.

About Reciprocal Exchange of Logistics Agreement (RELOS)

RELOS is an administrative arrangement between India and Russia to enhance military cooperation.

Purpose: It streamlines military logistics support, making joint operations more efficient and cost-effective.

Significance:

- Sustained Operations:** Facilitates replenishment of supplies, providing berthing facilities for troops, warships, and aircraft during both wartime and peacetime missions.
- Strategic Advantages:** Enables smoother use of host nation's logistics networks, swift crisis response, and reduces overall mission costs.
- Expanded Military Reach:** Enhances India's maritime influence and awareness, and improves information exchange about maritime activities.
- Balancing Quad Agreements:** Balances India's logistics agreements with Quad countries and Russia's non-Quad stance, countering US and Chinese regional influence.
- Scientific Interconnections:** Supports India's Arctic research, focusing on links between Arctic Sea ice melt and Indian monsoon systems.

India's Logistics Agreements with Various Countries:

Country	Agreement Details
USA	<u>GSOMIA</u> (2002): Facilitates sharing military intelligence. <u>LEMOA</u> (2016): Allows mutual use of military logistics facilities. <u>BECA</u> (2020): Provides access to U.S. geospatial intelligence data. <u>COMCASA</u> (2018): Enables transfer of encrypted communication equipment.
France	Facilitates logistical support during joint exercises, port visits, humanitarian efforts and maritime intelligence sharing.
Australia	<u>MLSA</u> (2020): Emphasizes shared vision for Indo-Pacific maritime cooperation.
Japan	<u>ACSA</u> (2020): Allows close coordination of services and supplies between armed forces.

GS-3

Indian Economy

27. VARIABLE RATE REPO (VRR)

Context:

The Reserve Bank of India's (RBI) variable rate repo (VRR) auction attracted significant interest from banks, with bids totalling ₹1,13,915 crore, surpassing the RBI's offer of ₹50,000 crore.

This underscores the growing demand for liquidity in the banking sector amid an estimated deficit of around ₹1.54-lakh crore.

What is VRR, or Variable Rate Repo?

It is a mechanism where the RBI permits banks to borrow funds at rates determined by the market, differing from the fixed Repo Rate at which banks borrow directly from the RBI.

Typically lasting up to 14 days, VRR serves as a means to inject short-term liquidity into the banking system. Conversely, Variable Rate Reverse Repo (VRRR) is employed to absorb surplus liquidity from the system.

28. FDI INFLOWS INTO INDIA DECREASED

Context:

Foreign Direct Investment (FDI) inflows into India fell 3.5% to \$44 billion in FY24 due to reduced investments in services, telecom, and pharma sectors.

Data in a nutshell

- January-March FY24 saw a 33.4% rise to \$12.38 billion.
- Total FDI, including reinvested earnings, declined marginally to \$70.95 billion from \$71.35 billion in FY23.
- Maharashtra (received the highest FDI) and Gujarat saw increased inflows, while Karnataka and several other states experienced declines.
- In FY 2023-24, Singapore was the top source of FDI inflows into India, followed by Mauritius and the USA.
- From 2000-2024, the top five countries for FDI were Mauritius, Singapore, the USA, the Netherlands, and Japan.
- The leading sectors for FDI in FY 2023-24 were Computer Software & Hardware, Services, and Construction.
- Over the 2000-2024 period, the top sectors were Services, Computer Software & Hardware, Trading, Telecommunications, and the Automobile Industry.

About FDI

- Definition:** Investment by a company or individual in one country into business interests in another country.
- Policy:** Formulated by the Department for Promotion of Industry and Internal Trade (DPIIT).
- Routes:
- Automatic Route:** No government approval is required.

5. **Government Route:** Approval required.
6. **Inclusions:** Foreign Currency Convertible Bonds, Foreign Institutional Investment (with conditions), and Global Depository Receipts.
7. **Prohibitions:** Lottery Business, Gambling and Betting, Chit Funds, Nidhi Company, Trading in Transferable Development Rights, etc.

Significance of FDI

1. Stimulates economic growth.
2. Promotes development in backward areas.
3. Ensures exchange rate stability.

29. UNIFIED PAYMENTS INTERFACE (UPI)

Context:

The **Reserve Bank of India (RBI)** in collaboration with **NPCI International Payments Ltd. (NIPL)** has planned to take the **Unified Payments Interface (UPI)** to over **20 nations by financial year 2029**.

- RBI also aims to explore collaboration on the **Fast Payment System** with groups of countries such as the **European Union and SAARC, along with multi-lateral linkages**.

About Unified Payments Interface (UPI):

- Unified Payments Interface (UPI) is a system that **powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood**.
- It also caters to the **“Peer to Peer” collect request** which can be scheduled and paid as per requirement and convenience.
- Currently, several countries, including **Bhutan, Nepal, UAE, France, Mauritius, etc., support UPI payments**.

Measures for Internationalization of UPI:

- **NIPL:** A wholly owned subsidiary of the National Payments Corporation of India (NPCI), incorporated in 2020, for the **deployment of RuPay and UPI outside of India**.
- **UPI One World:** Prepaid payment instrument linked to **UPI provided to foreign nationals/ NRIs coming from G20 countries**.

30. INDIA’S GOLD RESERVE

Context:

The **Reserve Bank of India (RBI)** recently **moved 100 metric tonnes of gold from the UK to domestic vaults**, a significant shift reflecting geopolitical concerns and risk diversification strategies.

India’s total **gold holdings stand at 822 metric tonnes**, with a portion stored in foreign vaults for international trade fa-

cilitation and risk spreading (around 50% is stored locally in India). These reserves are primarily held in the **Bank of England, the Bank for International Settlements (BIS) in Switzerland, and the Federal Reserve Bank of New York**. This move aims to mitigate risks associated with geopolitical tensions and ensure greater control over gold reserves for economic stability and inflation management.

Why has RBI hoarded Gold in recent years?

- The **Reserve Bank of India (RBI)** is **accumulating gold as a counter-strategy against negative interest rates and geopolitical uncertainties**.
- In times of inflation and economic stress, gold offers a good return compared to US government bonds.
- Gold provides a **hedge against geopolitical uncertainty**, especially amid conflicts like the Russia-Ukraine war and tensions between the US and China.
- Diversifying forex reserves with gold adds security, liquidity, and value during crises.
- **Gold’s historical significance in the economy includes its role as a reserve currency**, intrinsic value, and its ability to boost a nation’s currency value.
- It can also serve as a substitute for government securities in central bank operations.

All banknotes issued by RBI are backed by assets such as gold, Government Securities and Foreign Currency Assets, as defined in Section 33 of the RBI Act, 1934.

Forex Reserves Component	Billion \$	%
1. Foreign Currency Assets	519.5	88.22%
2. Gold	45.7	7.76%
3. SDRs	18.5	3.14%
4. Reserve Position in IMF	5.2	0.88%
Total Forex Reserves	588.9	100.00%

31. OPEN NETWORK FOR DIGITAL COMMERCE (ONDC)

Context:

The Open Network for Digital Commerce (ONDC) achieved a record **8.9 million transactions** in May, a **23% increase from April**.

What is ONDC?

The **Open Network for Digital Commerce (ONDC)** is a government initiative aimed at transforming the e-commerce market in India by shifting from a platform-centric model to an open-network model.

Similar to the success of the Unified Payments Interface (UPI) project, which enables seamless money transfers across different payment platforms, the ONDC seeks to facilitate transactions between buyers and sellers regardless of

the platforms they are registered on.

How it works?

Let's imagine you want to buy a product online, like a smartphone. You are registered on Amazon, but you find a better deal on Flipkart for the same smartphone you want to buy. In the current system, you wouldn't be able to purchase it from Flipkart because you're not registered there.

But ONDC is like a big network that connects all the different e-commerce platforms together. So instead of being limited to one specific platform, you can buy products from different platforms, even if you are registered on only one of them.

Open Network for Digital Commerce (ONDC)

Once ONDC is implemented, a user shopping on any app that is registered with the network will see products from the catalogs of multiple sellers — e-commerce apps, listed local stores, small merchants, among others— and can choose who they want to purchase from

Existing: Platform-Centric Model

Future: Open Network Model

In the current platform-centric digital commerce model, buyers and sellers must use the same platform/application to do a business transaction

In ONDC's network-centric model, buyers and sellers can transact no matter what platform/application they use through an open network

About ONDC:

- Section 8 Company:** Non-profit organization.
- DPIIT Initiative:** Launched by the Department for Promotion of Industry and Internal Trade.

Benefits of ONDC:

- Sellers:** Compete fairly with big players, and become discoverable online.
- Buyers:** Seamless shopping with a wide product range in one checkout.
- Tech Companies:** Faster product/service adoption and scalability.
- FinTech:** Offer credit and financing to e-commerce entities.

Challenges:

- Resistance from established players.
- Transitioning offline businesses to online.

32. PRESTON CURVE

Context:

The Preston curve gives a **positive empirical relationship** between a country's life expectancy and its per capita income. It was **first identified by Samuel H. Preston in 1975**. It suggests that as **poor countries grow and their per capita income increases**, life expectancy rises significantly due to better access to healthcare, education, nutrition, and living conditions. However, this relationship flattens out at higher income levels, indicating diminishing returns on life expectancy gains with further income increases.

33. DUTY DRAWBACKS

Context:

Starting from June 5th, 2024, the **Central Board of Indirect Taxes and Customs (CBIC)** has initiated electronic **disbursal of duty drawback** amounts directly to exporters' bank accounts through the **Public Finance Management System (PFMS)**.

What are Duty Drawbacks?

Duty drawback, governed by **section 75 of the Customs Act, 1962**, refunds customs duty on imported or excisable materials used in the **production of export goods**. This mechanism assists exporters in **mitigating some of the expenses incurred during the export process**, particularly within the supply or value chain.

Electronic disbursal of duty drawback **aims to streamline the process, reduce processing time, eliminate manual intervention, and enhance transparency** in customs operations. This initiative aligns with **CBIC's commitment to paperless customs** and trade facilitation, building upon its implementation of the **WTO Trade Facilitation Agreement (TFA)**.

Fig: Mechanism of duty drawback (a similar mechanism is followed in India)

34. BASE EROSION AND PROFIT SHIFTING

Context:

The 16th meeting of the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) concluded

- **An inclusive framework on BEPS** is finalizing negotiations on Pillar One, while the **Global Minimum Tax under Pillar Two** is being implemented in countries globally

What is an Inclusive Framework?

The **OECD/G20 Inclusive Framework on BEPS, with 147 countries** and jurisdictions including India, **fights tax avoidance and promotes fair tax practices** through a Two-pillar approach: Pillar One **reallocates profits of large MNEs**, while Pillar Two establishes a **Global Minimum Corporate Tax of 15%**. This framework ensures fairness in tax systems, addresses tax avoidance, and adapts to evolving business models and digital economies.

What is BEPS?

- It refers to corporate tax planning strategies used by multinationals to shift profits from higher-tax jurisdictions to lower or no-tax jurisdictions.
- The OECD defines **BEPS strategies as** exploiting gaps and mismatches in tax rules. It erodes the tax base (costing countries USD 100-240 billion in lost revenue annually) of the higher-tax jurisdictions.
- As developing countries have a higher reliance on corporate income tax, they suffer from BEPS disproportionately.
- **Working together within the OECD/G20 Inclusive Framework on BEPS, over 135 countries** and jurisdictions are collaborating on –
 - The implementation of measures to tackle tax avoidance,
 - Improving the coherence of international tax rules and
 - Ensuring a more transparent tax environment.

The objective of the Outcome Statement: It delivered a package to further implement the Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalisation of the Economy.

Two-Pillar Solution/ Global Anti-Base Erosion (GloBE) rules: These rules were agreed upon in 2021 by 137 countries and jurisdictions under the OECD/G20 Inclusive Framework on BEPS.

KEY ELEMENTS OF THE TWO-PILLAR SOLUTION

Pillar One	Pillar Two
<p>Taxing rights over 25% of the residual profit of the largest and most profitable MNEs would be re-allocated to the jurisdictions where the customers and users of those MNEs are located</p>	<p>GloBE rules provide a global minimum tax of 15% on all MNEs with annual revenue over 750 million euros</p>
<p>Tax certainty through mandatory and binding dispute resolution, with an elective regime to accommodate certain low-capacity countries</p>	<p>Requirement for all jurisdictions that apply a nominal corporate income tax rate below 9% to interest, royalties and a defined set of other payments to implement the "Subject to Tax Rule" into their bilateral treaties with developing Inclusive Framework members when requested to, so that their tax treaties cannot be abused.</p>
<p>Removal and standstill of Digital Services Taxes and other relevant, similar measures</p>	<p>Carve-out to accommodate tax incentives for substantial business activities</p>
<p>The establishment of a simplified and streamlined approach to the application of the arm's length principle in specific circumstances, with a particular focus on the needs of low capacity countries.</p>	

35. IBBI

Context:

Insolvency and Bankruptcy Board of India (IBBI) issues new guidelines for **appointing IPs as resolution professionals effective from July 1, 2024**. The guidelines aim to streamline the process by establishing a panel of IPs for appointments, ensuring eligibility criteria, and requiring prior experience in handling Insolvency and Bankruptcy Code assignments.

What is IBBI?

IBBI is a **statutory body under the Insolvency and Bankruptcy Code, 2016**, headquartered in New Delhi under the Ministry of Corporate Affairs. It oversees service providers in the insolvency ecosystem, regulates insolvency and resolution processes for corporations and individuals, and operates under a Governing Board appointed by the Central Government.

36. GAAR

Context: The Telangana High Court ruled against a taxpayer using bonus stripping to offset losses, marking the first judgment on **GAAR**.

What is Bonus Stripping? Bonus stripping involves **buying shares of a company before it issues bonus shares** and selling the original shares immediately after to incur a short-term capital loss.

What is GAAR? GAAR, or General Anti-Avoidance Rules, authorize tax authorities to reject tax advantages on transactions lacking commercial substance and aiming solely to evade taxes. It **commenced on April 1, 2017**, and is outlined in **Chapter X-A of the Income-tax Act, 1961**.

37. ANGEL TAX

Context:

The **Confederation of Indian Industry (CII)** has recommended removing the 'Angel Tax' to boost capital formation, citing its negative **impact on start-up funding**.

What is Angel Tax?

Angel Tax, introduced in **2012 under the Income-tax Act, 1961**, is levied on the capital raised by unlisted companies through the issue of shares if the share price exceeds the fair market value. This tax aims to **curb money laundering and ensure compliance with tax norms**.



What is Angel Tax?

It is income tax payable on 'income from other sources' and was introduced in Section 56(2) (viiB) of IT Act. This tax is payable on capital raised by unlisted companies if value of shares issued to investors exceeds their fair market value (FMV)

"Income from other sources": If the share value is less than FMV, the difference is considered "income from other sources" for angel investors

Angel Tax Timeline

March 16, 2012	March 1, 2013	March 2018	March 2023
Inception of angel tax	Implementation of angel Tax	Angel Tax Exemption for Startups	Proposed amendment in Angel Tax
Pranab Mukherjee inserts section 56(2)(viiB) in the IT act, 1956.	IT amendment act of 2012 brings Angel Tax into effect.	The dipi Announces angel tax exemption for inter-ministerial Board (IMB) approved startups.	Indian startups Offering share to foreign investors, may have to pay angel tax.

SME FUTURES

38. EXCESSIVE DEFICIT PROCEDURE (EDP)

Context:

The **European Commission** has proposed **disciplinary measures** for **France and six other EU countries (Belgium, Italy, Hungary, Malta, Poland, and Slovakia)** due to their **excessive budget deficits**.

- These deficits stem from the **financial impacts of the COVID-19 pandemic and the energy crisis following Russia's invasion of Ukraine**.

About Excessive deficit procedure (EDP):

- The aim of the excessive deficit procedure (EDP) is that EU **countries correct excessive deficit and/or**

debt levels.

- The **European Commission** can launch an EDP against an EU country **not respecting the Stability and Growth Pact (SGP)**, a body of rules governing the **coordination of EU countries' fiscal policies**.

39. PRIORITY SECTOR LENDING (PSL)

Context:

Reserve Bank of India (RBI) revises Priority Sector Lending (PSL) norms

What is Priority Sector Lending (PSL)?

- Priority Sector Lending (PSL) is a **mandate by the Reserve Bank of India (RBI)** to ensure that **vulnerable sectors receive adequate credit**.
- The purpose of PSL is to **promote inclusive development by directing funds** to sectors such as agriculture, MSMEs, education, housing, social infrastructure, renewable energy, and others.
- **Formalized in 1972**, PSL ensures the flow of credit to creditworthy sectors that struggle to access formal financial institutions. Banks must allocate **a portion of their Adjusted Net Bank Credit (ANBC) or Credit Equivalent of Off-Balance Sheet Exposure (CEOBE)**, whichever is higher, towards PSL. The target is
 1. **40% for scheduled commercial banks** and foreign banks with 20 or more branches
 2. **75% for Regional Rural Banks (RRBs)** and Small Finance Banks (SFBs)
 3. **65% for Urban Cooperative Banks (UCBs)** in FY 2024-25, increasing to 75% in FY 2025-26.

It applies to **all commercial banks, including Regional Rural Banks (RRBs), Small Finance Banks (SFBs), Local Area Banks, and Primary (Urban) Cooperative Banks (UCBs)**.

40. PROHIBITION OF INSIDER TRADING (PIT)

Context:

The **Securities and Exchange Board of India (Sebi)** has amended its **Prohibition of Insider Trading (PIT) regulations**, offering more **flexibility to senior executives of listed companies** who need **to submit a "trading plan" for dealing with their shares**.

- These insiders, **who typically have access to unpublished price-sensitive information (UPTI)**, must now specify **share price, amount, and transaction date in advance**.
- Key changes include **reducing the minimum cool-off period from six to four months** and allowing a **20% price range for share transactions**.

Securities and Exchange Board of India (Sebi)



Context: The Securities and Exchange Board of India (Sebi) recently unveiled a new logo on the occasion of its **35th anniversary**.

<p>Securities and Exchange Board of India (est. 1988; HQ: Mumbai) is the statutory regulatory body for securities and commodity market in India under the ownership of Ministry of Finance.</p>	
Regulatory Authority	Primary market, Secondary Market, Mutual fund, Foreign Institutional Investment
Background	Initially a non-statutory body without any statutory power. It became autonomous and given statutory powers by SEBI Act 1992
Aim	To protect the interests of investors in securities and to promote the development of, and regulate the securities market
Powers & Functions	<ul style="list-style-type: none"> It is a quasi-legislative and quasi-judicial body that can draft regulations, conduct inquiries, pass rulings, and impose penalties. Its primary objective is to protect the interests of Indian investors in the securities market and promote its development. SEBI also regulates the tasks entrusted to depositors, credit rating agencies, custodians of securities, foreign portfolio investors, and other participants. It educates investors about securities markets and their intermediaries It prohibits fraudulent and unfair trade practices within the securities market and related to it.
Expansion of its powers	<ul style="list-style-type: none"> It can regulate any money pooling scheme worth Rs. 100 crore or more and attach assets in cases of non-compliance. SEBI Chairman has the authority to order "search and seizure operations"
SEBI's structure	SEBI Board consists of a Chairman (for 3 years terms) and several other whole time and part time members .
Securities Appellate Tribunal (SAT)	It has been constituted to protect the interest of entities that feel aggrieved by SEBI's decision. SAT consists of a Presiding Officer and two other Members. It has the same powers as vested in a civil court .

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41. 'MINI RATNA' STATUS (CATEGORY-1) FOR CENTRAL ELECTRONICS LIMITED (CEL)

Context:

Recently Central Electronics Limited (CEL) has been granted "Mini RATNA" status (Category-1).

Criteria for Maharatna Status	Criteria for Navratna Status	Criteria for Miniratna Status
1. Shall have Navratna status	1. Miniratna Category - I or Schedule 'A' CPSEs	Miniratna Category-I status: <ul style="list-style-type: none"> • Made profit in the last 3 years continuously • Pre-tax profit is Rs.30 crores or more in at least 1 of the 3 years • Having Positive net worth status
2. Listed on the Indian stock exchange with prescribed public shareholding	2. 'Excellent' or 'Very Good' rating in 3 of last 5 years	
3. Average annual turnover > Rs. 25,000 crore (last 3 years)	3. Composite score of 60 or above in the following 6 performance indicators including	
4. Average annual net worth > Rs. 15,000 crores (last 3 years)	Net Profit to Net Worth, Cost of Services, Earning per share, etc.	
5. Average annual net profit after tax > Rs. 5,000 crores (last 3 years)		
6. Significant global presence/international operations		
Visit Insights IAS Daily Current Affairs for more News		Miniratna Category-II status: <ul style="list-style-type: none"> • Made profit for the last 3 years continuously • Having positive net worth status. • Not defaulted in the repayment of loans/interest payment on any loans due to the Government. • Not dependent upon budgetary support or Government guarantees.

42. INDIA'S FOREX RESERVE

Context:

India's forex kitty jumps by USD 816 mln to USD 653.71 bln

- India's forex reserves witnessed an **increase of USD 816 million**, reaching **USD 653.711 billion** for the week ending June 21, according to the Reserve Bank of India (RBI).
- **Components of Forex Reserves**
 - **Foreign Currency Assets (FCA):** it is the major component of India's forex reserves.
 - It has decreased by USD 106 million to USD 574.134 billion.
 - FCA expressed in dollar terms reflects the effect of appreciation or depreciation of non-US currencies like the euro, pound, and yen.
 - **Gold Reserves:** it has increased by USD **988 million**. Total gold reserves stood at USD **56.956 billion** during the week.
 - **Special Drawing Rights (SDRs):** it decreased by **USD 57 million**. SDRs totaled USD **18.049 billion**.
 - **India's Reserve Position with the IMF:** Decreased by **USD 9 million**. The reserve position was **USD 4.572 billion**.

Agriculture

43. UNIFIED INDIA ORGANIC LOGO

Context:

FSSAI and APEDA have **developed a new "Unified India Organic" logo** to replace the existing **India Organic** and **Jaivik Bharat logos**.

This move aims to bring uniformity in the implementation of **organic regulations by NPOP and FSSAI**. The new logo is expected to come into force in the near future, and certification bodies will be **given a 3-month transition period for implementation**. It will **distinguish organic products from non-organic communicating** adherence to the National Standards for Organic Production.

Currently, the **India Organic logo is used on organic products** complying with the National Programme for Organic Products (NPOP), while **Jaivik Bharat** is used on organic products certified by FSSAI.

Regulator of Organic Products:

Food Safety and Standards Authority of India (FSSAI) (under the Ministry of Health and Family Welfare) regulates the manufacture, distribution, sale or import of Organic products through the **Food Safety and Standards (Organic Foods) Regulations, 2017** (under FSSA 2006).

Certification of Organic products:

Certification	Description
Participatory Guarantee System (PGS)	Implemented by the Ministry of Agriculture and Farmers Welfare . Ensures organic product production adheres to quality standards. Does not require third-party certification agencies. Certification is carried out by local groups consisting of producers and consumers and is based on trust. Involves a documented logo or statement as proof of certification.
National Programme on Organic Production (NPOP)	Implemented by APEEDA, under the Ministry of Commerce & Industries. Regulates organic farming certification . Involves accreditation of Certification Bodies. Sets standards for organic production. Promotes organic farming and marketing. Its Standards have been recognized by the EU, Switzerland, and the US.
Other Programs for Organic Production	NMSA (National Mission for Sustainable Agriculture): Promotes sustainable agriculture, including organic production.
	Mission Organic Value Chain Development for North East Region (MOVCD-NER): Supports the development of organic value chains in the North East region of India.
	Paramparagat Krishi Vikas Yojna (PKVY): Promotes organic farming.

44. WORLD’S LARGEST GRAIN STORAGE PLAN

Context:

The National Level Coordination Committee (NLCC) for the **world’s largest grain storage plan held its first meeting in Delhi**. The plan aims to transform **Primary Agricultural Credit Societies (PACS) into Multi-Service Societies**. The pilot project, implemented in 11 states, focuses on creating agricultural infrastructure at the PACS level, including warehouses and processing units, through various government schemes.

About the World’s largest grain storage plan

Implementation	The Ministry of Cooperation will implement a pilot project in at least 10 districts to gather regional insights for nationwide implementation. An IMC will modify guidelines and implementation methodologies for creating infrastructure at Primary Agricultural Credit Societies (PACS) using available schemes.	
	The ministry will implement it through the National Cooperative Development Corporation with support from NABARD, FCI , and others	
Schemes for Convergence	Ministry of Agriculture and Farmers Welfare	Agriculture Infrastructure Fund, Agricultural Marketing Infrastructure Scheme, Mission for Integrated Development of Horticulture , Sub Mission on Agricultural Mechanization.
	Ministry of Food Processing Industries	Pradhan Mantri Formalization of Micro Food Processing Enterprises Scheme, Pradhan Mantri Kisan Sampada Yojana .
	Ministry of Consumer Affairs, Food and Public Distribution	Allocation of food grains under the National Food Security Act , Procurement operations at Minimum Support Price.
Benefits	The plan aims to address the agricultural storage infrastructure shortage and enable PACS to function as procurement centres, fair price shops, custom hiring centres, and processing units. It will reduce food grain wastage, enhance food security, prevent distress sales, reduce transportation costs, and strengthen PACS.	

Implementation Timeline	<p>The National Level Coordination Committee was formed within one week of approval. Implementation guidelines are issued within 15 days of approval.</p> <p>Portal for PACS linkage rolled out within 45 days of approval.</p> <p>Implementation starts within 45 days of approval.</p>
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FCI is a nodal agency responsible for procurement, storage and movement of food grains, public distribution and maintenance of buffer stocks. **FCI**, set up under the Food Corporation's Act 1964, works under the Ministry of Consumer Affairs, Food and Public Distribution. CWC established under Warehousing Corporations Act, 1962 for warehousing of agricultural produce and other notified commodities





CABINET DECISION 31 MAY 2023

World's Largest Grain Storage Plan in Cooperative Sector



- Cabinet approves Inter Ministerial Committee for facilitation of the *"World's Largest Grain Storage Plan in Cooperative Sector"*
- Plan to see convergence of various schemes of the following ministries:
 - (a) *Ministry of Agriculture and Farmers Welfare*
 - (b) *Ministry of Food Processing Industries*
 - (c) *Ministry of Consumer Affairs, Food and Public Distribution*



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45. DIRECT SEEDING OF RICE (DSR)

Context:

The **Punjab government** is promoting the **direct seeding of rice (DSR) technique** due to its benefits, such as **reducing water usage by 15-20%**, requiring less labour, and **maturing faster than traditional methods.**

- DSR involves sowing seeds **directly into the field without nursery preparation or transplantation, which reduces water and labour requirements.**
- Successful **DSR implementation depends heavily on soil texture and iron content.**

Significance:

- **Faster planting and maturing of the crop.**
- Reduces the **water consumption and labour** as compared **to the traditional transplantation method.**
- **Controlling stubble burning** also **helps in reducing Methane emissions.**



46. UP-PRAGATI ACCELERATOR PROGRAM

Context:

KisanKraft Ltd, an **agricultural firm based in Bengaluru**, has joined the World Bank's Water Resource Group's (WRG) **low methane rice project** to promote direct seeded rice (DSR) in Uttar Pradesh.

KisanKraft's DSR varieties use less water, reduce the need for pesticides and fertilizers, and do not require stagnant water. The initiative is part of the **UP-PRAGATI Accelerator program** aiming to promote DSR cultivation on 250,000 hectares over the next five years, enhancing water efficiency and low-carbon practices.

What is the UP-PRAGATI Accelerator program?

The **Uttar Pradesh Program for Agricultural Transformation and Increased Incomes (UPPAP)** aims to enhance agricultural advancements and boost incomes by promoting water-use efficiency and low-carbon practices through technological and institutional innovations.

Launched by the **Uttar Pradesh Multi-Stakeholder Platform**, it is supported by the **2030 Water Resources Group (WRG)** and the Bill and Melinda Gates Foundation.

About Low Methane Rice Project (LMRP)

The LMRP is an initiative of the **World Bank's 2030 Water Resources Group (WRG)**, a multi-donor trust fund hosted by the World Bank Group.

About Direct Seeded Rice:

Direct seeded rice is a **practice of sowing paddy which involves planting rice seeds directly into the field**, instead of the traditional method of growing seedlings in nurseries and then transplanting them into the fields.



Science & Technology

47. HYDROXYUREA

Context:

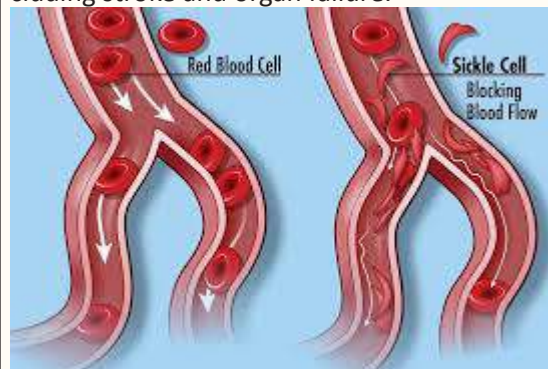
The **Indian Council of Medical Research (ICMR)** is seeking to develop a pediatric oral formulation of hydroxyurea to treat sickle cell disease in India, where over 20 million individuals are affected.

Currently, **hydroxyurea is mainly available in 500 mg capsules or 200 mg tablets**, making dosing for children challenging.

This initiative is crucial, especially with the launch of the **National Mission to eliminate Sickle Cell Anemia/SCD by 2047.**

What is SCD (Sickle Cell Disease)?

Sickle Cell Disease (SCD) is a **genetic disorder that affects the shape of red blood cells**, causing them to become sickle-shaped instead of round. This abnormal shape can lead to various complications, including pain, anaemia, and organ damage. SCD is one of the most common inherited blood disorders and can result in serious health issues, including stroke and organ failure.



48. REVERSE TRANSCRIPTASE

Context:

Researchers have discovered that **the bacteria *Klebsiella pneumoniae*** may use a **newly identified protein, Neo**, to counter **bacteriophage infections**. This protein, created through a **process involving Reverse Transcriptase (RTs) and non-coding RNA**, can halt the replication of both the bacterium and the invading bacteriophage, effectively stopping the infection.

What are RTs?

- **Reverse transcriptase (RT) is an enzyme that synthesizes DNA from an RNA template**. This process reverses the usual flow of genetic information, which typically goes from DNA to RNA to protein.
- RTs play a crucial role in the replication of retroviruses, like HIV, and are used extensively in molecular biology research and diagnostics to study and detect RNA viruses.
- This finding highlights the **versatile role of reverse transcriptase in bacterial defence mechanisms** and hints at potential applications in biotechnology and medicine, particularly in addressing antimicrobial resistance

49. RECOMBINANT PROTEINS

Context:

Researchers at the Indian Institute of Science (IISc), Bengaluru, have devised a groundbreaking method for **mass-producing recombinant proteins**, which include vital substances like **vaccine antigens, insulin, and monoclonal antibodies**.

What are Recombinant Proteins?

- Recombinant proteins are **proteins that are artificially produced through genetic engineering** techniques.
- These proteins are created by introducing specific DNA sequences, encoding desired protein products, into host organisms such as bacteria, yeast, or mammalian cells.
- The host cells then use their own cellular machinery to produce the recombinant proteins according to the inserted genetic instructions.
- **Recombinant proteins have a wide range of applications**, including in medicine (such as vaccine antigens, insulin, and therapeutic antibodies), agriculture, industry, and research. They are crucial for various biotechnological and pharmaceutical purposes due to their precise control over protein structure and function.

What are Proteins?

Proteins serve as the **backbone of biological systems**, driving essential processes like gene expression, cell growth, and communication within cells. The blueprint for protein synthesis resides in DNA, guiding the tightly regulated transcription process to generate messenger RNA (mRNA) for protein production.

50. ROLE OF NUCLEAR TECHNOLOGIES IN FOOD SYSTEM

Context:

At the International Symposium on Food Safety and Control: [FAO](#) Director-General underscores the importance of nuclear technologies for measuring, managing and controlling food safety. It was organized by [FAO](#) and [IAEA](#).

Role of Nuclear Technologies in Food System:

1. **Animal Health:** PCR tests for rapid disease detection.
2. **Soil and Water Management:** Use of radioactive nuclides to assess soil health and erosion rates.
3. **Insect Pest Management:** Sterile Insect Technique (SIT) for pest control. Mass-rearing and sterilizing insects through ionizing radiation before release.
4. **Food Safety and Control:** [Food irradiation](#) to improve safety and extend shelf life by reducing/eliminating microorganisms and insects.
5. **Plant Breeding and Genetics:** Inducing desired genetic changes via irradiation.

Key Initiatives:

1. **Global:** Atoms4Food Initiative by FAO and IAEA; Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture.

2. **India:** Technology demonstration plants for irradiation: KRUSHAK at Lasalgaon, Nashik (low dose radiation); Radiation Processing Plant (RPP) in Navi Mumbai (high dose radiation); **FSSAI's Food Safety and Standards** (Food Products Standards and Food Additives) Sixth Amendment Regulations, 2016, to align food irradiation rules with international standards.

51. PHENOME INDIA-CSIR HEALTH COHORT KNOWLEDGEBASE (PI-CHECK) PROJECT

Context:

CSIR's 'Phenome India' project, a pioneering longitudinal health monitoring initiative, has achieved its target of collecting 10,000 samples, marking a **significant step towards precision medicine in India**.

What is Precision Medicine?

Precision medicine refers to an **approach to healthcare that tailors medical treatment and prevention strategies** to the individual characteristics of each patient. This approach takes into account factors such as **genetic makeup, lifestyle, environment, and other personal data to customize healthcare decisions**. By considering individual variability, precision medicine aims to optimize treatment outcomes and minimize adverse effects, leading to more effective and personalized patient care.

The **Phenome India-CSIR Health Cohort Knowledgebase (PI-CHECK) project** was launched in 2023 by the **Council of Scientific and Industrial Research (CSIR)**. It aims to assess **risk factors in non-communicable diseases**, particularly cardio-metabolic conditions, within the Indian population. It aligns with the **vision of "Swasthya Bharat Viksit Bharat"** by promoting health and wellness checks. Additionally, the project underscores **CSIR's** dedication to advancing precision medicine through **Predictive, Personalized, Participatory, and Preventive healthcare approaches**.

52. PRAVAHA SOFTWARE

Context:

SRO's Vikram Sarabhai Space Centre (VSSC) develops **PraVaHa** (Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis), a **Computational Fluid Dynamics (CFD) software** for aerodynamic design and analysis of aerospace vehicles. PraVaHa simulates **external and internal flows on launch vehicles**, winged, and non-winged re-entry vehicles, aiding in the evaluation of aerodynamic and aerothermal loads during launch and re-entry. It is extensively used in the **Gaganyaan program** for analyzing human-rated launch vehicles and is designed to utilize CPU and GPU architectures for efficient simulation.

53. MILGROMIAN DYNAMICS (MOND) THEORY

Context:

The Cassini mission's findings **challenge Milgromian dynamics (MOND)**, an alternative theory to **dark matter**, which predicts subtle deviations in celestial orbits due to weak gravity.

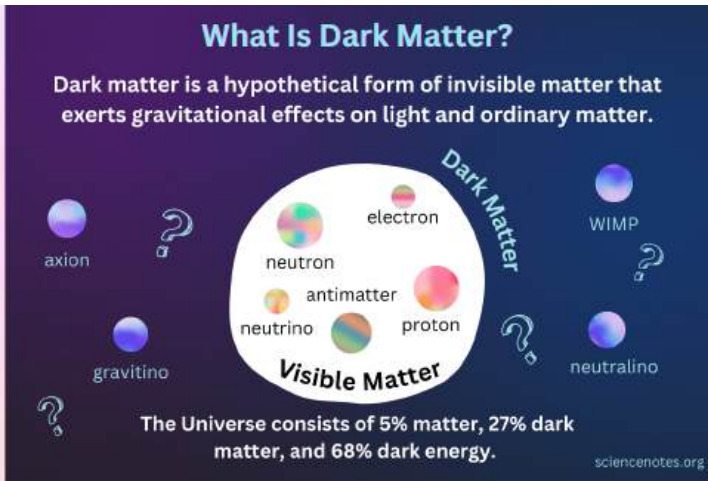
- **Cassini is a joint endeavour of NASA, the European Space Agency, and the Italian Space Agency** to study Saturn and its complex system of rings and moons.

What is the theory of Dark Matter and what is its alternative theory?

The theory of dark matter **proposes that there is an unseen form of matter in the universe**, which does not emit light but exerts gravitational forces, explaining phenomena like the **faster-than-expected rotation of galaxies**.

In contrast, **Milgromian dynamics (MOND)** says that those deviations from Newton's laws of gravity occur at very weak gravitational fields, such as those found at the edges of galaxies. MOND suggests modifying gravity rather than invoking unseen dark matter. It seeks to **replace Newtonian dynamics and General Relativity**.

However, **recent observations, including those from the Cassini mission and studies of celestial bodies**, have cast doubt on MOND's predictions, indicating that it **fails to explain various phenomena accurately**. Therefore, MOND is not considered a correct alternative to the theory of dark matter.



What are LAMs?

Large Action Models (LAMs) are advanced **AI models** that can understand complex goals communicated in **natural language and autonomously perform tasks** in the real world. They **go beyond generating and interpreting text like ChatGPT** and can handle tasks like **vacation planning, job application automation**, and personalized content creation.

Examples include **automating claims processing in insurance firms, enhancing customer interactions in airlines, and boosting sales conversions** in retail through personalized recommendations. LAMs are expected to become **integral to businesses, similar to SAAS** applications or hyper-scale cloud enablement, and may lead to job displacement but also create new roles and opportunities.

54. TRISHNA

Context:

Thermal Infrared Imaging Satellite for High-resolution Natural Resource Assessment (TRISHNA) mission, a collaboration between ISRO and CNES (French Space Agency), aims to monitor surface temperature and water management globally.

It includes two primary payloads: Thermal Infra-Red (TIR) from CNES for infrared imaging and VNIR-SWIR from ISRO for surface reflectance mapping. Operating in a **Sun-synchronous orbit**, it will aid **climate monitoring, urban planning, and disaster management.**

Objectives:

- To monitor the energy and water budgets of continental biospheres, alongside high-resolution observation of water quality and dynamics.
- It provides detailed monitoring of surface temperature, emissivity, and radiation variables, aiding regional to global surface energy budgeting.
- It assists in assessing urban heat islands, detecting thermal anomalies, and monitoring snow-melt runoff, glacier dynamics, aerosol optical depth, atmospheric water vapour, and cloud cover.

Other Indo-French collaborations to monitor Earth: Megha-Tropiques. Saral

Other Related Initiatives: **GEOGLAM** is an initiative launched by the G20 to improve food security and sustainable agriculture through Earth observations. **Global Water Watch** is a data platform offering free, global information on water reservoirs and river systems using AI and Earth Observation algorithms, developed by Deltares, WRI, and WWF

55. LARGE ACTION MODELS (LAMs)

Context:

Global companies are increasingly **adopting Large Action Models (LAMs)** to streamline operations and reduce costs.

56. SAFEEXO-CAS

Context:

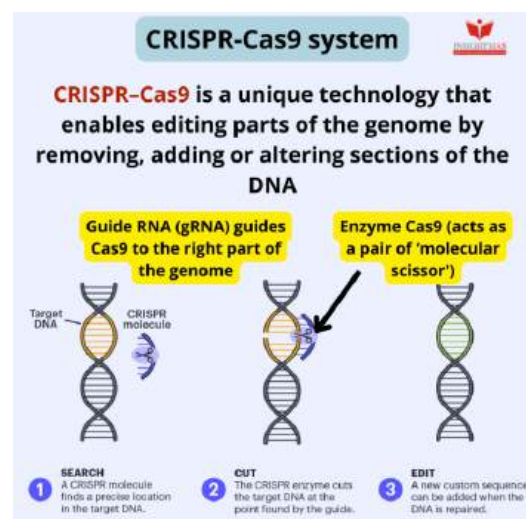
Scientists at Columbia University College of Dental Medicine have developed a **new gene editing platform called "safe-EXO-Cas,"** using **exosomes as delivery vehicles** for **CRISPR/Cas9 components.**

This platform **enhances precision in targeting specific cells and tissues**, overcoming the limitations of current delivery methods.

What are Exosomes?

Exosomes are naturally occurring vesicles that act as vehicles for transporting molecules, such as proteins and genetic material, between cells. These tiny membrane-bound structures play a crucial role in cell-to-cell communication and have potential applications in drug delivery, diagnostics, and therapeutics.

About CRISPR/Cas9 technology:
It is a genome editing tool, that works as a cut-and-paste mechanism on DNA strands, allowing targeted modifications to the genome. Its applications include editing genes in human embryos, improving crop resilience, and treating diseases like sickle cell disease.



57. INITIATIVES TO FOSTER INNOVATION

Context:

NITI Aayog, under its Atal Innovation Mission (AIM), launched two initiatives, to foster innovation and sustainability in India.

Initiative	Description	Collaboration/Focus
AIM – ICDK Water Challenge 4.0	Tackles <u>critical water-related challenges</u> through innovative solutions	Collaboration with Innovation Centre Denmark (ICDK) at the Royal Danish Embassy in India
Innovations for You (5th Edition)	Coffee table book series featuring <u>60 entrepreneurs contributing to societal betterment</u> through sustainable innovations	Focuses on <u>SDG Entrepreneurs in India</u>

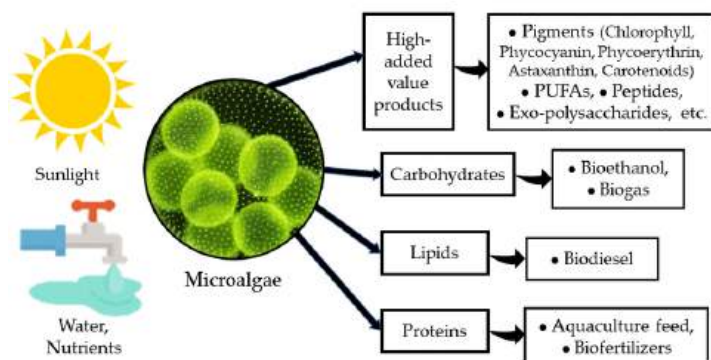
58. MICROALGAE

Context:

Scientists at the CSIR-Indian Institute of Chemical Technology (IICT) have identified microalgae, specifically ‘Chlorella sorokiniana’, as a promising protein supplement for food and feed.

- Their research highlights the Chlorella Growth Factor (CGF), a protein-rich extract from the algae, which offers high-quality protein and essential amino acids that surpass those in commercially available soy meal.
- CGF is beneficial for human and animal health, promoting overall well-being and immunity.

The microalgae do not compete with traditional crops for space and resources, making them a sustainable alternative protein source.



59. XYLITOL – THE KILLER SWEETNER

Context:

A recent study has found that artificial sweeteners, particularly xylitol, commonly found in products like sugar-free chewing gums, low-sugar baked goods, mints, and toothpaste, may increase the risk of blood clots, heart attacks, and strokes.

- The study revealed that xylitol enhances platelet aggregation and activity, leading to a hypercoagulable state.
- This heightened platelet reactivity can cause clots in blood vessels, potentially obstructing blood flow and resulting in serious cardiovascular events.

The study also noted that erythritol, another artificial sweetener, poses similar risks.

60. PORTABLE OPTICAL ATOMIC CLOCK

Context:

Researchers have developed a portable optical atomic clock for use on ships, offering superior accuracy compared to other maritime timekeeping methods. They assert it is the most advanced optical clock available for maritime use.

About Atomic Clock:

- Atomic clocks measure time using atom vibrations, particularly electrons’ oscillations, with extreme precision, having an error margin of a few billionths of a second per day.
- They rely on stable caesium atoms, whose specific vibration frequency serves as the clock’s basis.
- A microwave cavity filled with caesium vapour stimulates atom vibration, emitting radiation at a precise frequency. This emitted frequency is compared to a standard, adjusting the clock’s timekeeping.
- Developed for maritime use, it represents a significant advancement in optical timekeeping, aiding navigation, maritime communication, and scientific research, including monitoring underwater seismic and volcanic activity and conducting experiments in space.

61. ISRO’S ADITYA-L1 MISSION

Context:

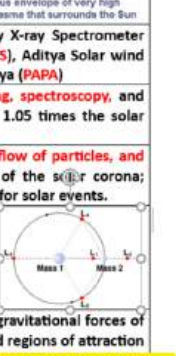
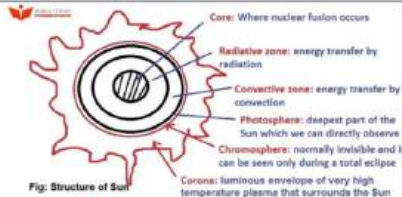
Recently, ISRO’s Aditya-L1 mission captured images of the Sun during the May solar storm.

The Solar Ultra Violet Imaging Telescope (SUIT) and the Visible Emission Line Coronagraph (VELC) instruments on board took images and made vital observations, aiding in the study of solar flares, energy distribution, sunspots, and space weather prediction.

Aditya-L1

Context: It was launched on September 2, is currently in Earth's orbit, but it is scheduled to leave this orbit and move towards the Earth-Sun system's Lagrange 1 (L1) point

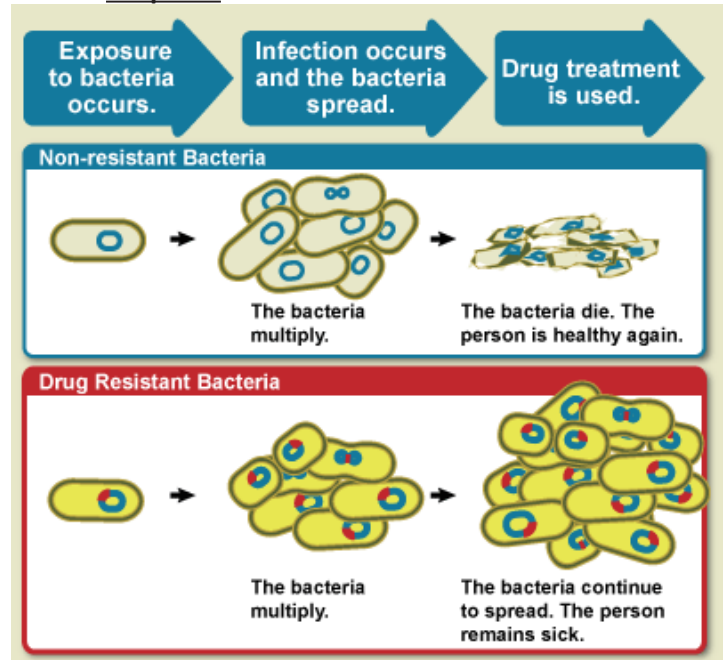
Aspect	Explanation
Mission Objective	To study the Sun, its upper atmospheric dynamics (chromosphere and corona), and understand the physics of the solar corona and its heating mechanism for the five years.
Launch Vehicle	Polar Satellite Launch Vehicle (PSLV)
Orbit	L1 orbit (First Lagrange point of the Sun-Earth system)
Primary Payload	Visible Emission Line Coronagraph (VELC)
Other Payloads	Solar Ultraviolet Imaging Telescope (SUIT), Solar Low Energy X-ray Spectrometer (SoLEXS), High Energy L1 Orbiting X-ray Spectrometer (HELIOS), Aditya Solar wind Particle Experiment (ASPEX), Plasma Analyser Package for Aditya (PAPA)
Significance of VELC	VELC is a solar coronagraph capable of simultaneous imaging, spectroscopy, and Spectro-polarimetry. It can image the solar corona down to 1.05 times the solar radius.
Purpose of Studying the Sun	To gain a deeper understanding of the Sun's radiation, heat, flow of particles, and magnetic fields; provide clues about the high temperature of the solar corona; understand space weather dynamics; and offer early warnings for solar events.
Importance of L1 Point	L1 point provides an unobstructed view of the Sun, even during phenomena like an eclipse; allows payloads to directly observe the Sun; makes the mission fuel-efficient.
What is L1 Point?	Lagrange points are equilibrium positions in space where the gravitational forces of two large bodies, like the Earth and the Sun, produce enhanced regions of attraction and repulsion.



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ria that have become resistant to multiple antibiotics and can no longer be treated with them.

- MDROs are also sometimes called "superbugs" because they can cause infections and are often easy to spread.



What are Geomagnetic storms?

- They occur when events like solar flares emit higher-than-normal levels of radiation toward Earth, interacting with its magnetic field.
- These disturbances, driven by solar coronal mass ejections (CMEs) or high-speed streams of solar wind from coronal holes, lead to geomagnetic storms.
- Effects of such storms range from the appearance of auroras to disruptions in communication systems due to high radiation, making communication on Earth challenging.
- These storms are classified on a scale measuring their effects. At G1, there are weak fluctuations in power grids and minor impacts on satellite operations, with auroras visible. At G5, voltage control problems and grid system collapse occur, radio waves are disrupted for days, and auroras can be seen at lower latitudes.

62. ENTEROBACTER BUGANDENSIS

Context:

A collaborative study by IIT-Madras and NASA's Jet Propulsion Laboratory has examined the behaviour of multi-drug resistant Enterobacter bugandensis aboard the International Space Station (ISS).

- This bacterium, known for causing difficult-to-treat hospital infections, displayed significant genomic and functional adaptations due to the unique ISS environment, including microgravity, elevated CO2, and increased radiation.

About Multidrug-resistant organisms:

- Multidrug-resistant organisms (MDROs) are bacte-

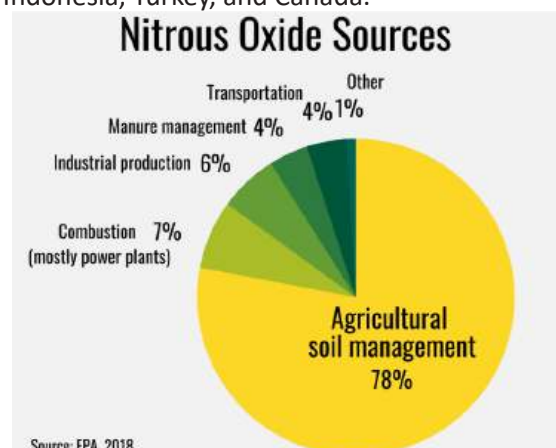
63. NITROUS OXIDE

Context:

A study by the Global Carbon Project found that nitrous oxide (N2O) emissions increased by 40% from 1980 to 2020, with China being the largest emitter, followed by India and the US.

- Nitrous oxide, a potent greenhouse gas, is primarily released from agricultural activities, specifically from nitrogen fertilizers and animal manure, which accounted for 74% of emissions in the last decade.
- In 2022, N2O levels in the atmosphere were 25% higher than in the pre-industrial era.
- To limit global warming to below 2 degrees Celsius, nitrous oxide emissions from human activities must be reduced by at least 20% from 2019 levels by 2050.

The top 10 emitters also include Brazil, Russia, Pakistan, Australia, Indonesia, Turkey, and Canada.



64. FATTY LIVER DISEASE

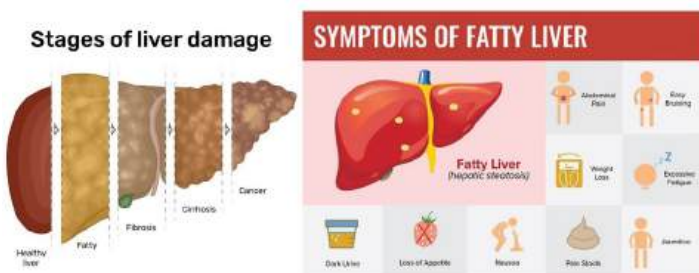
Context:

The rise in fatty liver disease, now termed Metabolic dysfunction-associated steatotic liver disease (MASLD).

- MASLD, particularly its progressive form known as Metabolic dysfunction-associated steatohepatitis (MASH), which causes liver inflammation and scarring, is expected to become the leading cause of chronic liver disease and liver transplants.
- Global MASLD prevalence is around 25-30%, with India's adult prevalence at 38.6% and 36% among obese children.

Causes leading to fatty liver cases:

1. **Consuming excessive carbohydrates**, especially refined carbs and sugars, worsens these conditions by causing metabolic problems.
2. **When the body has too much glucose**, it increases insulin production to help cells absorb the glucose.
3. **High insulin levels**, leading to insulin resistance, where cells become less responsive to insulin.
4. **Insulin resistance disrupts normal metabolism** and promotes the conversion of excess glucose into fatty acids, which are then stored in the liver.
5. **The liver cells fill up with fat**, leading to fatty liver.
6. **Over time, this continuous damage affects the liver's ability to function properly**
 - a. **progressing from simple fatty liver** to more severe conditions such as **steatohepatitis and cirrhosis**, which are hallmarks of MASLD, and may require a liver transplant.



65. DONANEMAB

Context:

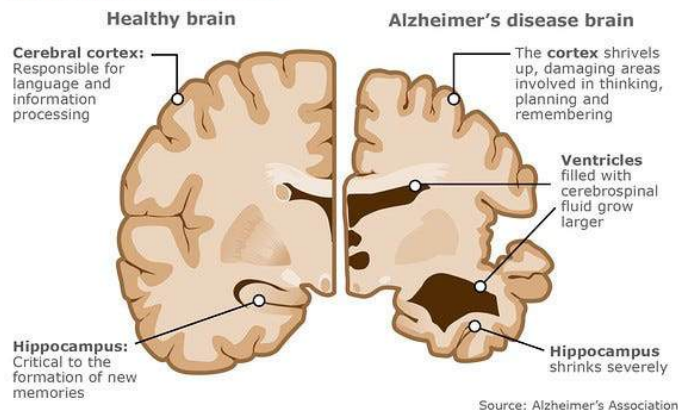
A new Alzheimer's drug, donanemab, has received support from an FDA advisory committee, moving closer to approval.

- Intended for early-stage Alzheimer's, it shows significant slowing of cognitive decline.
- The drug works by targeting amyloid beta protein deposits in the brain.

Alzheimer's disease is a brain disorder that slowly destroys memory and thinking skills and is the most common type of dementia.

It's characterized by changes in the brain that lead to protein deposits, brain shrinkage, and eventually cell death.

Alzheimer's disease



66. GOOGLE SEARCH ALGORITHMS

Context:

An anonymous email claiming access to Google's Search algorithm API documents was recently disclosed.

What is an API document?

API documents, or Application Programming Interface documents, are comprehensive guides that detail the functionalities, parameters, endpoints, and usage instructions for developers seeking to integrate with or utilize an API (Application Programming Interface).

What is Google's search algorithms?

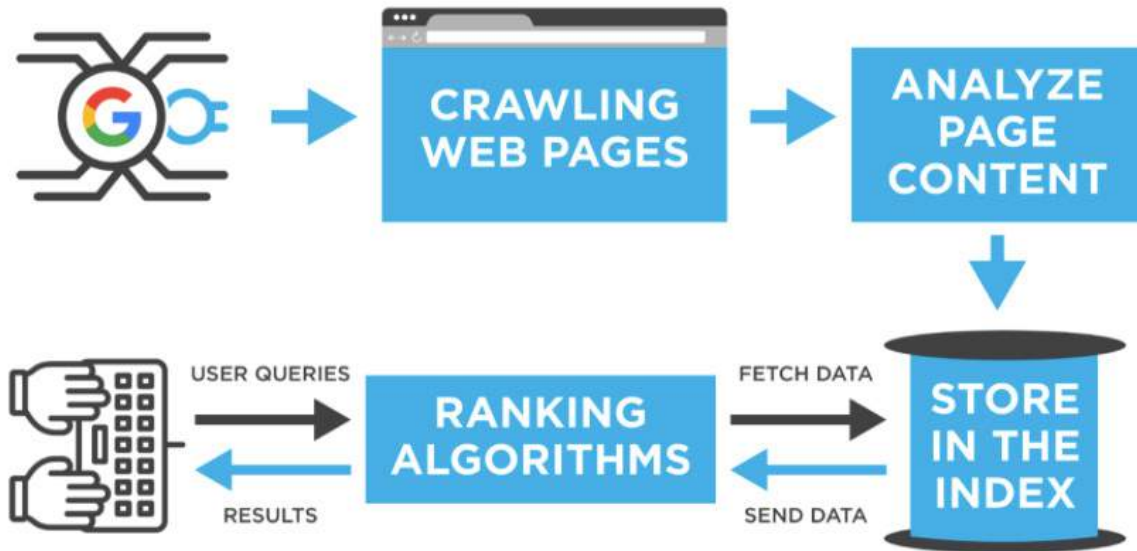
They are intricate systems designed to retrieve and present information from its vast index based on user queries. They analyze billions of web pages using specific criteria like backlinks and content quality to rank results. Google continuously updates these algorithms to enhance search quality and combat spam.

How does it work?

The search process involves three stages:

1. Crawling
2. Indexing
3. Searching/ranking

Web crawlers discover and index URLs, categorizing their content. When a user queries, the algorithm uses language models to understand the query, correct spelling, and determine intent. It assesses content relevance based on keyword matches and signals of expertise and trustworthiness, like backlinks and content length. User-friendly factors like mobile-friendliness and page load times are also prioritized, along with personalization based on location and search history.



67. SUPERHYDROPHOBIC CATALYST

Context:

A global team of scientists, has developed a **superhydrophobic catalyst** that significantly **reduces the cost of producing biodiesel**.

- This catalyst, which is **water-repellent and derived from biomass (cellulose)**, can **lower biodiesel production costs** from the **current \$1.2 per litre to 37 cents per litre**.
- The catalyst's robustness allows it to **withstand the water by-products of biodiesel production**, making the **process more efficient and cost-effective**.

The research, published in *Advanced Functional Materials*, suggests this **innovation could promote wider adoption of biodiesel as a sustainable energy source**, offering an **environmentally friendly and economically viable alternative to traditional fossil fuels**.

68. CAPSAICIN

Context:

Denmark has recalled **several spicy Korean instant ramen noodles** produced by Samyang due to **concerns over high levels of capsaicin**, which could **cause "acute poisoning"**.

- **Capsaicin**, the compound that **gives chilli peppers their heat**, can cause **inflammation and irritation in the digestive tract, potentially leading to symptoms like abdominal pain, diarrhoea, and vomiting**.
- Despite these risks, moderate consumption of spicy foods can offer benefits like **pain relief, antibacterial properties, boosted metabolism, improved cardiovascular health, and anti-cancer effects**.

What is Scoville Scale?

The Scoville scale is a measurement of pungency (spiciness or "heat") of chili peppers and other substances, recorded in Scoville heat units (SHU).

THE CHEMISTRY OF A CHILLI

CAPSAICINOIDS

CAPSAICIN

DIHYDROCAPSAICIN

THE SCOVILLE HEAT INDEX

0 SHU (Bell Pepper) | 1,000 SHU (Banana Pepper) | 5,000 SHU (Jalapeno) | 10,000 SHU (Serrano) | 15,000 SHU (Habanero) | 50,000 SHU (Cayenne) | 100,000 SHU (Ghost Pepper) | 1,000,000 SHU (Carolina Reaper)

69. PIGMENT PURPUROGALLIN

Context:

A **team of scientists** from the UK and Canada traced the **evolution of purple glacier algae**, revealing their **significant impact on glaciers and challenging traditional evolutionary theories**.

- These algae, which thrive in **extreme glacier environments**, have evolved to produce a purple **pigment, purpurogallin**, that protects **them from UV and visible light, aiding in their survival**.
- The study shows that these **adaptations likely emerged 520-455 million years ago**, rather than during the **Snowball Earth period as previously thought**.
- This suggests a **more recent glacial period drove their evolution**.
- The algae's ability to simplify rather than increase in complexity contradicts the **traditional "march of progress" hypothesis in evolution**.

These adaptations have enabled glacier algae to persist and significantly affect glacier melt, highlighting their role in fragile ecosystems and the importance of understanding their evolution in the context of climate change.

70. KAVLI PRIZE

Context:

The **Kavli Prize**, named after **Norwegian-American philanthropist Fred Kavli**, donors' significant achievements in **astrophysics, neuroscience, and nanoscience**.

- Established by **the Kavli Foundation in 2000**, the prize is **awarded biennially and includes a \$1 million cash award per field**, along with a **medal and a scroll**.
- It **mirrors the Nobel Prize** but is considered broader in scope, as it **recognizes contributions without the restriction of being made in the preceding year**.
- The **inaugural Kavli Prize was awarded in 2008**.

71. DIVYA DRISHTI

Context:

"Divya Drishti" is an advanced AI tool developed by the woman-led start-up Ingenious Research Solutions.

- The tool **integrates facial recognition with gait and skeleton analysis to enhance identification accuracy and reduce false positives and identity fraud**.
- This **dual-approach biometric authentication system** has versatile applications across various sectors, **including defence, law enforcement, corporate, and public infrastructure**.

Developed with technical guidance from DRDO's Centre for Artificial Intelligence & Robotics (CAIR) in Bangalore, "**Divya Drishti**" signifies a **significant advancement in biometric technology**.

72. STREPTOCOCCAL TOXIC SHOCK SYNDROME (STSS)

Content:

The recent spread of "**flesh-eating bacteria**" in Japan, known as **Streptococcal Toxic Shock Syndrome (STSS)**, has health officials alarmed, with close to 1,000 cases reported nationwide.

STSS is a severe illness caused by group A Streptococcus bacteria. It triggers a rare, rapid and **severe inflammatory response affecting multiple organs**. Symptoms include **fever, muscle pain, nausea, and organ failure**. Diagnosis involves **blood tests to detect the bacteria and organ function**. Treatment includes strong antibiotics, fluids, and sometimes surgery. Early medical intervention is crucial for recovery and preventing complications or death from STSS.

What is toxic shock syndrome?

- Toxic Shock Syndrome is a rare, often life-threatening illness that results from an infection and can impact several organ systems, such as the liver, kidneys, and lungs.
- The disease develops quickly, making immediate medical attention necessary.

Conditions for the development of TSS include:

Bacterial colonization, Exotoxin production, Entry portal for the bacteria

73. '5G INTELLIGENT VILLAGE' AND 'QUANTUM ENCRYPTION ALGORITHM'

Context:

The **Department of Telecommunications (DoT)** has announced two significant calls for proposals to stimulate **innovation and technological advancement in the telecommunications sector**.

- These initiatives aim to promote **indigenous R&D, IP creation, and inclusive digital growth across India under the Telecom Technology Development Fund (TTDF) scheme**.

Initiative	5G Intelligent Village Initiative	Quantum Encryption Algorithm (QEA)
Objective	To harness 5G technology to transform rural life, driving digital inclusion and economic growth.	To develop an India-specific quantum encryption algorithm for securing digital communication channels.

Scope	Focuses on agriculture, education, healthcare, governance, and sustainability in selected villages across India.	Not Applicable
Goals	Enable effective utilization of 5G's URLLC and mMTC, establish 5G connectivity in uncovered areas, and unite various stakeholders for R&D in 5G technology.	Not Applicable
Features	Not Applicable	Unparalleled security, advanced encryption capabilities, and ultrafast, efficient encryption.

QUANTUM COMPUTING	CLASSICAL COMPUTING
<ul style="list-style-type: none"> Calculates with qubits, which can represent 0 and 1 at the same time 	<ul style="list-style-type: none"> Calculates with transistors, which can represent either 0 or 1
<ul style="list-style-type: none"> Power increases exponentially in proportion to the number of qubits 	<ul style="list-style-type: none"> Power increases in a 1:1 relationship with the number of transistors
<ul style="list-style-type: none"> Quantum computers have high error rates and need to be kept ultracold 	<ul style="list-style-type: none"> Classical computers have low error rates and can operate at room temp
<ul style="list-style-type: none"> Well suited for tasks like optimization problems, data analysis, and simulations. 	<ul style="list-style-type: none"> Most everyday processing is best handled by classical computers

74. MATSYA 6000

Context:

India is set to become **the sixth country to have its own Deep Sea Mission.**

- The **first stage of the harbour trial** aims at reaching a **depth of 40-50 meters.**
- The National Institute of Ocean Technology (NIOT)** developed **Matsya 6000**, a submersible capable of **reaching depths of 6000 meters**, and collaborated with ISRO on creating a titanium hull to withstand extreme pressures.

About Matsya 6000:

- The Matsya 6000 is a **human-occupied submersible** designed and developed by **India's National Institute of Ocean Technology (NIOT).**
- It is part of India's **ambitious Samudrayaan Mission**, aimed at **deep-sea exploration and research.**

Design and Capabilities:

- Depth Capability:** The Matsya 6000 is designed to operate at **depths of up to 6000 meters (approximately 19,685 feet).**
- Occupancy:** It can accommodate **three crew members.**
- Duration:** The submersible can stay **submerged for up to 12 hours of operational time**, with an **additional 96 hours of emergency endurance.**
- Material:** The pressure hull is made from **titanium to withstand the extreme pressures of deep-sea environments.**
- Instruments:** It is equipped with advanced scientific instruments for underwater research, including high-definition cameras, sonar systems, and robotic arms for sampling and interaction with the seabed.

75. BIO-BITUMEN

Context:

India is planning to **produce bio-bitumen from biomass and agricultural waste to reduce its reliance on imports and address stubble-burning issues** in road construction.

- Currently, **India imports about half of its annual bitumen requirement.**
- A pilot study by the **Central Road Research Institute (CRRI) and the Indian Institute of Petroleum, Dehradun**, will test bio-bitumen on a 1-km road stretch.
- This initiative aims to **save foreign exchange, achieve self-sufficiency in bitumen production, and provide a solution for stubble burning.**

Bitumen Facts

- Bio-bitumen is an **eco-friendly alternative to traditional petroleum-based bitumen**, used primarily in **road construction and roofing.**
- It is **derived from renewable biomass sources such as agricultural residues, forestry waste, and other organic materials.**
- The development and utilization of bio-bitumen aim to **reduce reliance on fossil fuels and minimize the environmental impact of bitumen production and use.**
- India Imports 3.21MT of Bitumen while it's indigenous bitumen production was 5.24 in the previous fiscal**

76. FUNCTIONAL ULTRASOUND IMAGING (FUSI)

Context:

Scientists have pioneered a groundbreaking ultrasound technology to map brain activity with unprecedented clarity, using **Functional Ultrasound Imaging (fUSI)**

What is Functional Ultrasound Imaging (fUSI)?

- fUSI stands for **Functional Ultrasound Imaging.** It is a cutting-edge technology that combines **ultrasound imaging with functional imaging techniques to observe** and map brain activity in real time.

- Unlike traditional ultrasound, which is primarily used for visualizing structures like organs and tissues, **functional ultrasound imaging specifically targets changes in blood flow within the brain.**
- This allows researchers to indirectly monitor **neuronal activity by measuring the metabolic demands** of active brain regions, providing high-resolution insights into how the brain functions during various tasks and activities.

About Ultrasound technology:

It utilizes high-frequency sound waves (above 20 kHz) to visualize the body’s internal organs without using radiation, ensuring it is a safe and effective diagnostic tool. This technology operates on the principle of the piezoelectric effect, where certain materials generate an electric charge when subjected to mechanical stress.

Beyond medical diagnostics, ultrasound finds applications in underwater acoustics (sonar), non-destructive testing of materials, and processes like welding and cleaning. Its versatility underscores its role in various scientific and industrial fields, making it indispensable for both research and practical applications

77. CLAUDE 3.5 SONNET

Context:

Claude 3.5 Sonnet, the latest AI model from Anthropic, represents a significant advancement in the field of large language models (LLMs).

What is Claude 3.5 Sonnet?

It is the latest AI model developed by Anthropic, positioned within their family of generative pre-trained transformers (GPTs).

Comparative table outlining the key features and capabilities of Claude 3.5 Sonnet, GPT-4o, and Gemini-1.5 Pro:

Feature	Claude 3.5 Sonnet	GPT-4o (OpenAI)	Gemini-1.5 Pro (Google)
Speed and Efficiency	Operates at twice the speed of Claude 3 Sonnet	Optimal balance of speed and computational resources	Efficient processing of large datasets
Performance	Outperforms competitors in coding, reasoning tasks	Versatile in natural language understanding and generation	Strong in information retrieval and context understanding
Benchmarks	Leading in coding proficiency, reasoning, knowledge	Not specified, but designed for diverse text applications	Competes well in complex information environments
Application Focus	Suitable for nuanced understanding, humour, complex instructions	Widely applicable across domains, text generation	Integrates with Google ecosystem, multimedia processing
Vision Capabilities	Strong in visual reasoning, transcribing from images	Primarily text-based, lacks specific visual processing	Advanced AI for image recognition and multimedia contexts
Company	Anthropic	OpenAI	Google

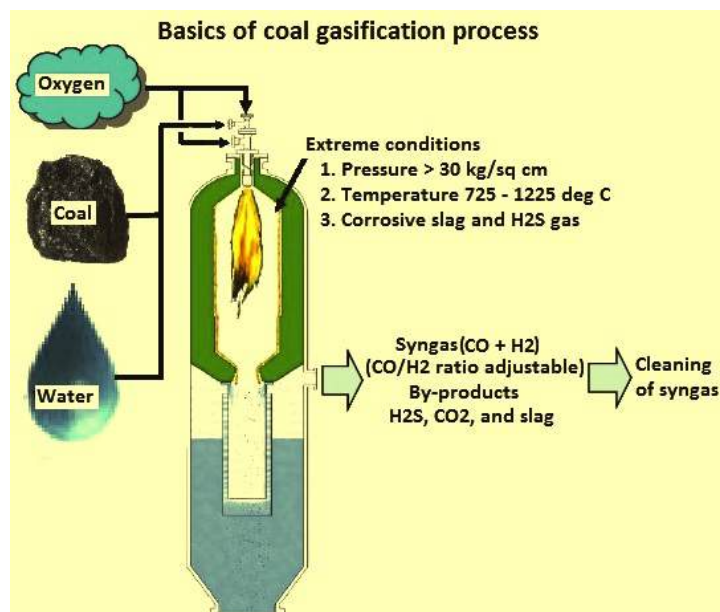
78. INDIA’S FIRST UNDERGROUND COAL GASIFICATION PILOT

Context:

The Ministry of Coal has initiated India’s first pilot project for Underground Coal Gasification (UCG) in Jharkhand, aiming to revolutionize the coal industry.

What is Coal Gasification?

Coal gasification is a process that **converts underground coal into valuable gases such as methane, hydrogen, carbon monoxide, and carbon dioxide.** This is achieved by partially oxidizing coal using air, oxygen, steam, or CO2 under controlled conditions to **produce syngas, a mixture of carbon monoxide and hydrogen.** Syngas can be used for power generation and making methanol.



Government Initiatives:

India has initiated the [National Coal Gasification Mission](#), aiming for 100 million tons of coal gasification by 2030, **allowed 100% FDI** in coal mining, and implemented the [Viability Gap Funding scheme](#) for promoting coal and lignite gasification projects.

79. MULTI-OMICS

Context:

India's use of **multi-omics**—**integrating genomics, metagenomics, proteomics, transcriptomics, and epigenomics**—is revolutionizing the **detection and treatment of diseases like tuberculosis (TB), cancers, and antimicrobial resistance.**

Major initiatives include:

- **Genome India Project:** Sequenced 10,000 genomes from 99 ethnic groups to develop a reference genome, aiding in low-cost diagnostics and research.
- **IndiGen Project:** Sequenced genomes of 1,008 individuals to analyze genetic disease epidemiology and optimize treatments.

80. HYDROGEN GAS FROM A MIXTURE OF METHANOL AND PARAFORMALDEHYDE

Context:

Researchers at the [Indian Institute of Science Education and Research \(IISER\) Tirupati](#) have developed an **efficient method for generating hydrogen gas from a mixture of methanol and paraformaldehyde.**

- This innovative process, which operates under **mild conditions using commercially available nickel catalysts**, offers significant **potential for advancing the “Hydrogen economy.”**
- This method **does not require bases or activators** and has **shown exceptional performance, producing hydrogen effectively used in chemical synthesis.**

Supported by ANRF and published in *Catalysis Science & Technology*, this research highlights the **potential of methanol and paraformaldehyde as viable hydrogen carriers, contributing to sustainable and renewable energy solutions.**

81. SPACE MAITRI

Context:

[ISRO](#) is set to **launch the 450kg Optimus spacecraft**, Australia's largest designed and built spacecraft, on its [Small Satellite Launch Vehicle \(SSLV\).](#)

- This mission, **named Space MAITRI (Mission for Australia-India's Technology, Research, and Innovation)**, marks a significant collaboration between [NewSpace India Limited \(NSIL\)](#) and [Australia's Space Machines Company.](#)

- The mission underscores the **strategic partnership between India and Australia**, focusing on **sustainable space exploration and debris management**.

About Space MAITRI:

- It aims to **foster closer ties** among **commercial, institutional, and governmental** space organizations from **both countries in the space domain**.

Environment & Ecology


82. HOLLANGAPAR GIBBON SANCTUARY

Context:

The Northeast Frontier Railway (NFR) plans to **construct canopy bridges in Assam’s Hollangapar Gibbon Sanctuary** to help India’s only ape, the hoolock gibbon, safely cross railway tracks dividing its habitat.

The sanctuary, **home to about 125 gibbons**, faces fragmentation due to a railway track. These bridges, designed by the **Wildlife Institute of India (WII) and NFR**, will facilitate the arboreal species’ movement. Safety measures, including nets, will be implemented to prevent accidents.

Key Facts about Hoolock Gibbon:

Facts	Description
About	Gibbons, the smallest and fastest of all apes , inhabit tropical and subtropical forests in Southeast Asia. They have high intelligence, distinct personalities, and strong family bonds. They are one of the 20 gibbon species found worldwide. 
Population and Habitat	The current population of hoolock gibbons is around 12,000. They are found in Northeast India, Bangladesh, Myanmar, and Southern China .
Gibbon Species in India	Two distinct species in India’s northeast: the eastern hoolock gibbon (Hoolock leuconedys) and the western hoolock gibbon (Hoolock hoolock) .
Threats	All 20 gibbon species, including hoolock gibbons, are at high risk of extinction due to conservation challenges. Significant population and habitat decline due to deforestation for infrastructure projects in India.
Conservation Status	International Union for Conservation of Nature’s Red List: Western Hoolock Gibbon: Endangered ; Eastern Hoolock Gibbon: Vulnerable . Both species are listed on Schedule 1 of the Indian (Wildlife) Protection Act 1972 .
	The Global Gibbon Network (GGN) recently convened its inaugural meeting in Haikou, China’s Hainan province, to address its critical situation. The GGN was initiated at the International Gibbon Day 2020 event , with representatives from 20 gibbon conservation organizations.
About Hollongapar Gibbon Sanctuary	The Hollongapar Gibbon Sanctuary, formerly known as the Gibbon Wildlife Sanctuary or Hollongapar Reserved Forest, is an isolated evergreen forest in Assam , India. Established in 1997, the sanctuary was initially set aside in 1881, with its forests once extending to the Patkai mountain foothills. It is home to India’s only ape and gibbon species, the hoolock gibbons, and the Bengal slow loris, Northeastern India’s only nocturnal primate. The forest’s upper canopy is dominated by hollong trees, the middle by nahar trees, and the lower by evergreen shrubs and herbs .

Prelims Link:

Q. Consider the following pairs: (UPSC 2010)

	Protected area	Well-known for
1.	Bhiterkanika, Orissa	Salt Water Crocodile
2.	Desert National Park, Rajasthan	Great Indian Bustard
3.	Eravikulam, Kerala	Hoolock Gibbon

Which of the pairs given above is/are correctly matched?

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

83. BIOCOVER

Context:

The use of microbial methane oxidation systems, specifically biocovers utilizing fine fractions from landfill mining, presents a promising model for methane control.

What is Biocover?

Biocovers are a **type of methane oxidation system** that utilizes the fine fraction material from landfill mining to effectively control methane emissions. These are porous material layers laid directly on top of a landfill which is then covered by an **oxidizing layer of mature compost**. It provides optimal conditions for **methanotrophic (methane-utilizing) bacteria** to thrive and act as biofilters, hence **controlling methane emissions** by converting methane to CO₂.

The key points about biocovers are:

1. They reduce **methane emissions from landfills and dumpsites**.
2. The **fine fraction material recovered** from landfill mining is used to construct the biocover system. This fine fraction would otherwise be difficult to repurpose due to high contaminant levels.
3. By using the fine fraction in the biocover, it provides a **sustainable solution for methane control**, especially for smaller to medium-sized landfills and dumpsites.
4. This method shows promise for application in **India's over 3,000 legacy dumpsites**, which continuously generate methane and are prone to fires, making effective methane control critical for climate change mitigation.

84. NAGI AND NAKTI BIRD SANCTUARIES: TWO MORE SITES ADDED TO RAMSAR LIST

Context:

Nagi and Nakti bird sanctuaries in Bihar's Jamui district are now recognized under the Ramsar Convention, **bringing India's total Ramsar sites to 82**.

About Nagi-Nakti Wetland:

Nagi-Nakti Wetlands in Bihar's Jamui district, nestled within the **Jhajha forest range**, are man-made reservoirs surrounded by dry deciduous forests and hills. Developed primarily for irrigation, they **host diverse flora and fauna, including over 150 bird species**, mammals, fish, aquatic plants, reptiles, and amphibians.

They are also designated as **Important Bird and Biodiversity Areas by BirdLife International**. They provide habitat for various migratory and resident bird species. The



About Ramsar Convention:

It was adopted in 1971 and aims to conserve and wisely use wetlands and their resources, with India becoming a party in 1982.

India and China rank third globally for Ramsar Sites, each with 82 sites. The **United Kingdom leads with 175**, followed by Mexico with 144. India's Ramsar Sites have increased from 26 to 82 in the last decade, with 40 added in the past three years.

85. FRESHWATER DIATOM

Context:

Researchers from the **Agharkar Research Institute (ARI), Pune**, have discovered a **new genus of freshwater diatom** in the rivers of the Eastern and Western Ghats.

What are Diatoms?

- Diatoms are a type of microscopic algae belonging to

the phylum Bacillariophyta.

- They are characterized by their intricate silica cell walls, which form intricate patterns like geometric shapes or lines.
- Diatoms are primary producers in aquatic ecosystems, responsible for producing a significant portion of the world's oxygen through photosynthesis.
- They play a crucial role in aquatic food chains, serving as food for many organisms. Diatoms are highly sensitive to changes in water chemistry, making them valuable indicators of water quality and ecosystem health.

86. DEAD ZONE

Context:

NOAA forecasts an above-average summer “dead zone” in the Gulf of Mexico.

- A “dead zone” is an area in a body of water where the **oxygen levels are so low** that **most marine life cannot survive**. These zones are also known as **hypoxic areas**.

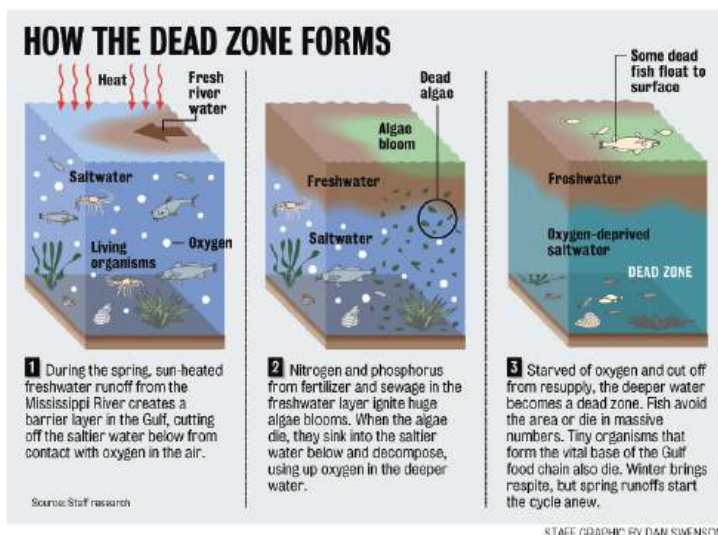
Causes:

Dead zones typically form as a result of **nutrient pollution from human activities**, such as:

- **Agricultural Runoff**
- **Urban Runoff**
- **Atmospheric Deposition**

Impact:

- **Marine Life:** Fish, shrimp, and other marine organisms either die or leave the area due to lack of oxygen.
- **Ecosystems:** The depletion of marine life can disrupt food chains and ecosystems.
- **Economy:** Fisheries and tourism can suffer due to the decline in marine populations and overall water quality.



87. BIOLUMINESCENCE

Context:

Animals have used **bioluminescence for millions of years**, but much about it remains a mystery. Scientists are exploring its origins and functions, particularly in **deep-sea habitats like coral reefs**.

Recent research suggests **bioluminescence may have evolved as a means of communication and survival during the Cambrian Explosion, over 540 million years ago**. Studying bioluminescent organisms, such as corals and shrimp, sheds light on how light production has shaped evolution and behaviour over geological time scales.

What is Bioluminescence?

It is the ability of living organisms to emit light, generated through enzyme-catalyzed oxidation reactions involving unique chemicals like luciferin and luciferase or photoprotein. This phenomenon spans across various species **including sponges, jellyfish, fireflies, and bacteria**. Its functions range from camouflage and prey attraction to intraspecies communication.

88. E-FLOW ECOLOGICAL MONITORING SYSTEM

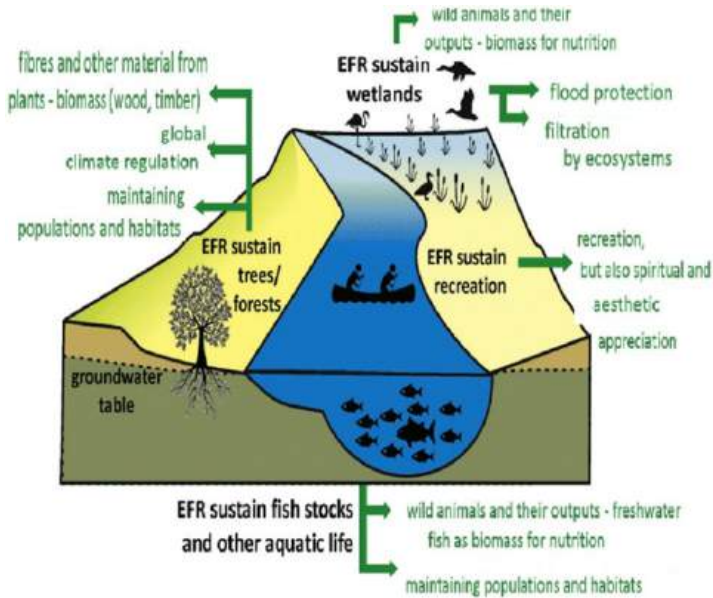
Context:

The Union Jal Shakti Ministry launched **an e-flow ecological monitoring system for real-time tracking of river quality, aiding project planning and monitoring**.

Developed by the **National Mission for Clean Ganga (Namami Gange, under the Ministry of Jal Shakti)**, it monitors the water quality of the Ganga, Yamuna, and tributaries, along with Namami Gange program activities. The system utilizes data from **Central Water Commission reports** to track key parameters like in-flow, out-flow, and mandated E-flow across 11 projects along the Ganga Main Stream.

More about E-flow:

E-flow stands for **environmental flow**, which refers to **the amount of water necessary to sustain the ecological health and functions of rivers**, streams, and other water bodies. It ensures that enough water is available to support aquatic ecosystems, maintain water quality, and sustain biodiversity. In 2018, the **Indian government mandated minimum E-flow requirements for different parts of the Ganga River** to be maintained throughout the year. In response, the **National Mission for Clean Ganga (NMCG) specified flow parameters** necessary to preserve the river's ecological balance, protect aquatic life, and ensure sustainability amid various water usage demands.



89. WORLD CROCODILE DAY

Context:

In 1975, India initiated its Crocodile Conservation Project in Odisha's Bhitarkanika National Park with support from the United Nations Development Programme (UNDP) and the UN's Food and Agriculture Organization (FAO).

About Crocodiles:

- Crocodiles are large, aquatic reptiles found in **tropical and subtropical regions around the world**. They belong to the **family Crocodylidae** and are known for their **powerful jaws, armoured bodies, and remarkable adaptations for a semi-aquatic lifestyle**.
- There are **three main species of crocodiles in India**

Species of crocodylians

There are **three species of crocodylians**—saltwater, Mugger and Gharial. Latest Saltie census 2023 has estimated higher count of estuarine crocodiles in Bhitarkanika



Saltwater Crocodile (estuarine crocodile)

- It is the **largest** of all living reptiles. It is found throughout the east coast of India - **Bhitarkanika mangroves and Sunderbans National Parks**.
- Males are much larger than females, weighing even upto 1000Kg.
- **Habitat:** They inhabit coastal brackish mangrove swamps and river deltas.
- **IUCN:** Least concern

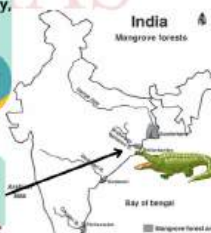
Mugger:

- The mugger crocodile (Indian crocodile) is found throughout the Indian subcontinent.
- The mugger is mainly a **freshwater species**, and found in lakes, rivers and marshes.
 - They have **broadest snout** of all, they are keystone species of their habitat.
 - **IUCN:** Vulnerable



Gharial:

- The Gharial or fish-eating crocodile is native to the Indian subcontinent.
- Small released populations are present and increasing in the rivers of the **National Chambal Sanctuary**, **Katarniaghat Wildlife Sanctuary**, **Son River Sanctuary** and the rainforest biome of **Mahanadi in Satkosia Gorge Sanctuary, Orissa**.
 - They are easily distinguishable due to their **long snouts (nose)**
 - **IUCN:** Critically Endangered



Bhitarkanika National Park (Kendrapara district in Odisha): The park is **second-largest mangrove forest** (after Sunderbans) and is lying in the estuarial region of **Brahmani, Baitarni, Dharma and Patasala River**. It is also a Ramsar Site.

Visit [insightsias.com](https://www.insightsonindia.com) for detailed News

90. GANDHISAGAR SANCTUARY

Context:

Madhya Pradesh is developing the Gandhi Sagar Wildlife Sanctuary as India's second home for cheetahs, following Kuno National Park.

Why develop a second home?

The move comes after **experts suggested that Kuno National Park**, the current home for cheetahs, does not have enough space for all of them. Recently, **two cheetahs (translocated under The Cheetah Project) died**.

About Gandhisagar Sanctuary:

About	Description
Gandhi Sagar Sanctuary is a wildlife sanctuary situated on the northern boundary of the Mandasaur and Nimach districts in Madhya Pradesh (adjoining Rajasthan)	
Year of creation	1974
Landscape	Vast open landscapes, rocky terrain
Vegetation	Northern tropical dry deciduous forest, mixed deciduous forest, and scrub
Flora	Khair, Salai, Kardhai, Dhawda, Tendu, Palash
Fauna	Chinkara, Nilgai, Spotted Deer, Indian Leopard, Striped Hyena, Jackal, crocodiles, fish, otters, and turtles
Places of Interest	Chaurasigarh, Chaturbhujnath temple, Bhadkaji rock paintings, Narsinghjar Hinglajgarh fort, Taxakeshwar temple



91. STRIPED CAECILIAN (ICHTHYOPHIS SPP)

Context: A limbless amphibian, the **striped caecilian (Ichthyophis spp)**, has been newly discovered in **Assam's Kaziranga**

National Park and Tiger Reserve during a recent survey.

About Striped caecilian:

They are classified under the order **Apoda**, a **limbless amphibian** known for spending most of its life burrowed under soil. These **wormlike creatures have smooth, moist skin** that appears narrowly segmented, with small eyes covered by skin, limiting visual perception to distinguishing light and dark. They can **breathe through their skin and lungs** and belong to the egg-laying genus **Ichthyophis**. Caecilians are found in **six families across Africa, South America, and Southeast Asia**.

About Kaziranga National Park:

1. Located in the State of Assam and is the single largest undisturbed and representative area in the **Brahmaputra Valley floodplain**.

International Status:

- **1985:** It was declared a UNESCO World Heritage Site in 1985.
- **1986:** It is recognized as an Important Bird Area by BirdLife International.

Important Species Found:

1. **KNP is home to the world's most one-horned rhinos.** Pobitora Wildlife Sanctuary has the **highest density of one-horned rhinos** in the world and the second-highest number of Rhinos in Assam after Kaziranga National Park.
2. Much of the focus of conservation efforts in Kaziranga is focused on the **'big four' species— Rhino, Elephant, Royal Bengal tiger and Asiatic water buffalo.**
3. **Rivers and Highways:** The park has the Diphlu River running through it.

Climate Change.

About GEF

GEF (est. during 1992 Rio Conference; HQ: Washington, D.C) is a multi-stakeholder partnership to tackle various environmental issues. Its funding is provided by participating donor countries and is mobilized through a replenishment process every four years.

It funds:

1. Convention on Biological Diversity (CBD).
2. United Nations Framework Convention on Climate Change (UNFCCC)
3. Stockholm Convention on Persistent Organic Pollutants (POPs)
4. UN Convention to Combat Desertification (UNCCD)
5. Minamata Convention on Mercury

About Kunming-Montreal Global Biodiversity Framework:

It is a **global agreement adopted at the 15th Conference of Parties (2022)** to the UN Convention on Biological Diversity (CBD). It sets forth **four goals and 23 targets** to be achieved by 2030 to address the biodiversity crisis. The framework aims to restore and conserve ecosystems, reduce species extinction risk, mitigate pollution, promote sustainable practices, and allocate financial resources for biodiversity conservation. It also emphasizes the need for international cooperation and monitoring to track progress.

93. THREATS TO FLAMINGOS AT LAKE NATRON, TANZANIA

Context:

Millions of flamingos at Lake Natron in Tanzania face threats from climate change and human activities, which disrupt their habitat and food sources.

About Flamingos:

They are **wading birds in the family Phoenicopteridae**, the only family in the order Phoenicopteriformes. There are four species in the Americas, including the Caribbean, and two species native to Afro-Eurasia.

There are six extant species of flamingos:

1. **Greater flamingo** (Africa, southern Europe, southern and southwest Asia)
2. **Lesser flamingo** (Africa's Great Rift Valley, northwest India)
3. **Chilean flamingo** (temperate South America),
4. **James's or Puna flamingo** (high Andes in Peru, Chile, Bolivia, Argentina),
5. **Andean flamingo** (high Andes in Peru, Chile, Bolivia, Argentina)
6. **American or Caribbean flamingo** (Caribbean islands and Latin America)

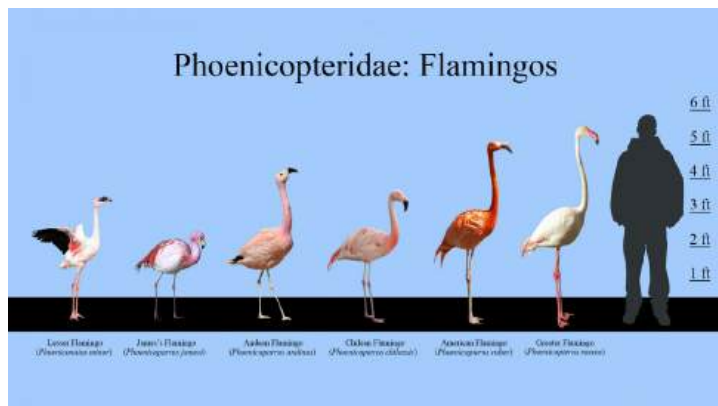
92. GLOBAL ENVIRONMENT FACILITY (GEF)

Context:

The Global Environment Facility (GEF) Council has **approved over \$736.4 million** in funding to address pressing environmental challenges worldwide.

Funding from the **GEF Trust Fund, Least Developed Countries Fund (LDCF), and Global Biodiversity Framework Fund (GBFF)** supports diverse projects including:

1. **Great Green Wall (GGW)** for landscape restoration in Africa's Sahel region
2. **Sustainable Cities Integrated Program (SCIP)** spanning 20 countries to catalyze urban system transformation
3. **India: The CoHABITAT** Project focuses on conserving wetlands, forests, and grasslands along the **Central Asian Flyway**, implemented by UNDP in collaboration with the **Ministry of Environment, Forest, and**



Lake Natron

Lake Natron, a salt or alkaline lake in northern Tanzania's Ngorongoro District, is part of the East African Rift and a Ramsar Site of international significance. It is the only regular breeding area for Africa's lesser flamingoes, though this habitat faces threats from planned development projects.



94. MAINLAND SEROW

Context:

A **mainland serow**, a **vulnerable antelope-like mammal**, has been recorded at the **lowest elevation in Assam's Raimona National Park**.

- This discovery is significant as the **mainland serow typically inhabits altitudes between 200 and 3,000 meters, primarily in Bhutan**.
- Species of serow native to the **Himalayas, Southeast Asia and China**.
- **IUCN Status- Vulnerable**
CITES- Appendix I

95. RHISOTOPE PROJECT

Context:

South African scientists make rhino horns radioactive to curb poaching

About the Rhisotope Project:

- The Rhisotope Project, **initiated in 2021 by Prof. James Larkin**, involves **inserting measured quantities of radioisotopes** into the horns of live rhinos.
- **Aim :** By embedding **“two tiny little radioactive chips”** into the horn, the project aims to render the horn **“useless” and “poisonous** for human consumption.”
- The final phase includes **follow-up care and blood samples** to ensure animal protection. The radioactive material **lasts five years**, proving more cost-effective than dehorning every 18 months.
- **Benefits:** The procedure, conducted on sedated rhinos, is safe, with radiation doses low enough not to harm their health or the environment.
 - Additionally, radioactively treated horns are more likely to be **detected at international borders**, increasing the chances of **exposing and prosecuting smuggling syndicates** under anti-terrorism laws.
- **Need:**
 - Rhinoceros horns are **highly sought after on black markets**, where their price by weight rivals that of **gold and cocaine**.
 - Previous anti-poaching strategies like **dehorning and poisoning horns** have failed to deter poachers.

Defence

96. MINUTEMAN III

Context:



The US conducted an **unarmed Minuteman III intercontinental ballistic missile (ICBM)** test from **Vandenberg Space Force Base, California**.

The LGM-30G Minuteman III, **a solid-fueled ICBM** first deployed by the USAF in the 1960s, serves as the sole land-based component of the U.S. nuclear triad. Designed and manufactured by **Boeing**, it was initially intended for a ten-year service life but has been continually modernized.

What are ICBMs?

Intercontinental ballistic missiles (ICBMs) are **long-range missiles capable of delivering nuclear warheads across continents**. They are a key component of a nation's nuclear deterrent strategy due to their ability to strike distant targets quickly. In India, examples of ICBMs include the **Agni series, such as Agni-V**, which has a range of over 5,000 kilometres, and **Agni-VI**, which is currently under development and is expected to have an even longer range.

97. DEFENCE SYSTEMS IN NEWS: NAGASTRA-1 AND ISKANDER MISSILE

Feature	Nagatra-1	Iskander Missile
Context	Indian Army received the first batch of Nagatra-1 from Solar Industries , developed by Economic Explosives Ltd.	Russia claimed to have struck the Ukrainian military air-base in Mirgorod.
Development	Indigenous UAV-based munitions with over 75% domestic content.	Road-mobile short-range ballistic missile system, service since 2006.
Capabilities	Hover, perform GPS-enabled precision strikes with 2-meter accuracy , and be safely recovered.	Designed for tactical strikes on high-value land targets.
Altitude	Designed for high-altitude operations above 4,500 meters.	Not specified.
Detection	Evades radar detection; low acoustic signature.	Employs manoeuvrable re-entry vehicles and decoys.
Surveillance	Day-night surveillance capabilities.	Not specified.
Operation	Capable of operating in extreme conditions.	Uses inertial and optical guidance systems.
Variants	Not specified.	Iskander-E: Range 280 km for export. Iskander-K: Features a new cruise missile R-500 with a max range of 280 km.
		

98. TARANG SHAKTI-2024

Context:

India will host its inaugural multinational air exercise, **Tarang Shakti-2024**, in August.

Tarang Shakti Exercise:

- Participants:** Ten countries with others as observers; including Australia, France, Germany, Japan, Spain, UAE, UK, and USA.
- Objectives:** Enhance interoperability with friendly foreign countries.
- Exercise Phases:** Two phases in southern India and the western sector.

Red Flag Exercise:

- About:** Air combat exercise with realistic scenarios.
- Hosted by:** U.S. Air Force at Eielson Air Force Base, Alaska.
- Participants:** Indian Air Force, Singapore Air Force, UK's Royal Air Force, Royal Netherlands Air Force, and German Luftwaffe.
- Exercise Details:** Simulates air defence (Red Force) and offensive elements (Blue Force); mainly USAF Aggressor Squadron.

99. CYBER MERCENARIES

Context:

UN Secretary-General António Guterres warned about escalating cybersecurity threats and misuse of digital technology through Cyber Mercenaries, highlighting growing sophistication in malware like trojans and AI-enabled cyber operations.

About Cyber mercenaries:

They are individuals or private groups hired to conduct cyber operations, both offensive and defensive, targeting specific networks and infrastructure. They facilitate **spying on internet-connected devices such as computers and phones**. Examples of cyber mercenaries include **Lazarus, Ocean Lotus group, and NSO group**. This practice operates in a legal grey area due to the absence of international conventions regulating their activities.

7 Types of Cyberwarfare Attacks



100. JAVELIN ANTI-TANK MISSILES

Context:

India and the US recently discussed the co-production of **American Javelin anti-tank missiles to meet Indian military needs**.

- The Javelin anti-tank weapon system is a **premier, single-man-portable, medium-range missile system**.
- It uses a **“fire-and-forget” principle**, automatically guiding **itself to the target after launch, allowing the gunner to take cover and avoid counter-fire**.



101. MEDIUM RANGE-MICROWAVE OBSCURANT CHAFF ROCKET (MR-MOCR)

Context:

The **Defence Research and Development Organisation (DRDO)** handed over the **Medium Range-Microwave Obscurant Chaff Rocket (MR-MOCR)** to the **Indian Navy**.

- It **obscures radar signals and creates a microwave shield**, reducing radar detection of platforms and assets.
- The rocket uses **special fibres to form a microwave obscurant cloud** in space when fired, **effectively covering a wide area**.

- Chaff is a **passive electronic countermeasure** consisting of electrically conducting **fine fibre of resonant length to act as a microwave dipole**

102. REPORTS IN NEWS

Reports	Description
Global Purchasing Power Parities (PPP) 2021	<p>The International Comparison Program (ICP) has released data covering 176 economies on their Purchasing power parities.</p> <p>Key findings reveal that in 2021, China, with a GDP of \$28.8 trillion based on Purchasing Power Parity (PPP), was the largest economy, followed by the United States. India, with a GDP of \$11 trillion, was the third largest, accounting for 7.2% of global GDP. In terms of GDP ranking by nominal values, India is currently the 5th largest economy.</p> <p>PPP, or Purchasing Power Parity, is an exchange rate at which one nation’s currency would be converted into another to purchase the same amounts of a large group of products. It provides a more accurate measure of living standards across countries compared to the Market Exchange Rate (MER), which often inflates the buying power of high-income countries (where prices are high) and underestimates that of low-income countries (where prices are lower).</p> <p>The ICP is a worldwide statistical initiative that collects comparative price data and detailed GDP expenditures to produce PPPs for the world’s economies. It is coordinated by the World Bank under the auspices of the United Nations Statistical Commission. The ICP also measures the Price Level Index (PLI), which is the ratio of a PPP to its corresponding exchange rate.</p>
ICRIER’s Policy Brief on Post-Harvest Losses (PHL) in India	<p>The policy brief highlights the benefits of reducing post-harvest losses (PHL): increasing farmers’ income, enhancing food security, and ensuring sustainability in agrifood systems.</p> <p>Key highlights include India’s production growth, with food grain increasing from 74.23 million metric tonnes (MMT) in 1966-67 to over 330 MMT in 2022-23, and horticulture rising from about 96 MMT in 1991-92 to over 355 MMT in 2022-23. India’s storage capacity expanded from about 108 MMT in 2010 to over 219 MMT in 2021. Globally, about 30% of food produced never reaches consumers, and India faces higher PHL in cereals, pulses, and oilseeds, leading to an annual loss of about \$18 billion from 2020 to 2022.</p> <p>Initiatives to reduce PHL include the Private Entrepreneurs Guarantee (PEG) Scheme for enhancing food storage capacity, PM Kisan Sampada Yojana for reducing PHL in horticulture and non-horticulture produce, the Agriculture Infrastructure Fund for financing post-harvest management projects, and the National Cooperative Grain Storage Project launched in 2023 to expand cooperative storage facilities by 700 lakh tonnes.</p>

Reports	Description
A World of Debt Report 2024	<p>The “A World of Debt Report 2024” by UN Trade and Development (UNCTAD) highlights a significant surge in global public debt, which reached a historic peak of \$97 trillion in 2023. India’s public debt reached \$2.9 trillion in 2023, amounting to 82.7% of its GDP.</p> <p>To address the current debt crisis, the report outlines several initiatives, including the Heavily Indebted Poor Countries (HIPC) Initiative by the IMF and World Bank, the Debt Management and Financial Analysis System (DMFAS) programme by UNCTAD, and the Global Sovereign Debt Roundtable (GSDR), launched in February 2023 by the IMF in coordination with the World Bank and India’s G20 presidency.</p>

<p>Global Annual to Decadal Climate Update (2024-2028)</p>	<p>This annual report by the World Meteorological Organization (WMO) synthesizes global annual to decadal predictions. Key highlights include an 80% likelihood that the annual average global temperature will temporarily exceed 1.5°C above pre-industrial levels for at least one year between 2024-2028; Predicted reductions in sea-ice concentration in the Barents Sea, Bering Sea, and the Sea of Okhotsk.</p>
<p>Environmental Performance Index (EPI), 2024</p>	<p>The Yale Center for Environmental Law & Policy recently published the EPI 2024, ranking 180 countries on climate change performance, environmental health, and ecosystem vitality using 58 indicators across 11 categories. Estonia tops the list. India is ranked 176th, being the world's third-largest greenhouse gas emitter with a 32% increase in emissions over the past decade. In 2022, India surpassed China as the largest emitter of anthropogenic sulfur dioxide.</p>
<p>Nature Geosciences projects study on Groundwater</p>	<p>A study in Nature Geosciences projects a 2.1°C rise in groundwater temperature from 2000 to 2100 due to climate change. This warming reduces oxygen levels, causing hypoxic conditions that harm species growth and distribution, trigger harmful algal blooms, and impact food and reproductive cycles of temperature-sensitive species, threatening biodiversity.</p> <p>India has the largest area under groundwater irrigation globally.</p>

Report	Description
<p>Sustainable Development Report 2024</p> <p>Key Highlights of the report:</p> <p>Globally, only 16% of SDG targets are on track for achievement by 2030. Progress varies widely among countries, with Nordic nations leading, BRICS making strides, and Poor & Vulnerable nations falling behind.</p> <p>India is ranked 109th out of 166 countries, with on-track performance in Poverty reduction and Quality Education targets while decreasing progress in Sustainable Cities and Climate Action targets.</p> <p>New Index of Support to UN-based Multilateralism (UN-Mi): It ranks countries based on their engagement with the UN System. Barbados ranks highest, India at 139th place while the USA ranks last.</p> <p>Recommendations of the Report: The UNSDSN recommends keeping the Sustainable Development agenda central to global cooperation until 2050, ensuring it is well-funded. It advocates for strengthening UN agencies and systematically monitoring UN-based multilateralism. Additionally, it emphasizes enhancing governance of technological risks and ensuring universal access to essential technologies and R&D. The recommendations also include establishing a UN Parliamentary Assembly and reforming the UN Security Council by adding India as a permanent member and adopting procedures to override a veto.</p> <p>About SDSN:</p> <p>The Sustainable Development Solutions Network is a non-profit created in 2012 by the United Nations to promote the 17 Sustainable Development Goals at national and international levels. As of 2022, the SDSN has over 1,700 members in 50 networks across 144 countries, with offices in New York, Paris, and Kuala Lumpur.</p>	<p>By UN Sustainable Development Solutions Network (SDSN)</p>



<p>SIPRI Yearbook 2024: Armaments, Disarmament, and International Security released</p>	<p>The SIPRI Yearbook 2024 reports an increase in nuclear weapons development and modernization by the nine nuclear-armed states, with a total global inventory of approximately 12,121 warheads. The USA and Russia hold nearly 90% of these. China’s nuclear arsenal is expanding rapidly, now estimated at 500 warheads. Tensions over Ukraine and Gaza have further weakened nuclear diplomacy.</p>
	<p>Nine nuclear-armed states are—the US, Russia, the UK, France, China, India, Pakistan, North Korea, and Israel. India, now with 172 warheads, has slightly surpassed Pakistan’s count. Both India and Israel primarily use plutonium in their nuclear weapons.</p>
	<p>About SIPRI: Stockholm International Peace Research Institute is an international institute based in Stockholm, Sweden. It was founded in 1966 and provides data, analysis and recommendations for armed conflict, military expenditure and arms trade as well as disarmament and arms control.</p>

Reports	Description
<p>“Fostering Effective Energy Transition 2024” Report</p>	<p>By World Economic Forum</p>
	<p>The Energy Transition Index (ETI) evaluates 120 countries on their energy system performance and readiness for secure, sustainable, and inclusive energy systems, focusing on the shift from fossil fuels to renewable energy to reduce CO2 emissions.</p>
	<p>Key findings from the report highlight that clean energy infrastructure investments reached \$1.8 trillion in 2023, with 90% of the growth occurring in advanced economies and China.</p>
	<p>Top performers in the index include Sweden, Denmark, Finland, Switzerland, and France</p>
	<p>India ranks 63rd on the ETI. Notably, eight countries, including Bhutan and Panama, achieved net-zero emissions in 2022.</p>
	<p>About World Economic Forum: It is an international advocacy non-governmental organization and think tank, based in Cologny, Canton of Geneva, Switzerland. It was founded on 24 January 1971 by German engineer Klaus Schwab.</p>

<p>Container Performance Index (CPPI)</p>	<p>Nine Indian ports have found their position among the top 100 global ports in CPPI in 2023.</p> <p>The Container Port Performance Index (CPPI) 2023, developed by the World Bank and S&P Global Market Intelligence, assesses performance based on vessel time in port. It identifies improvement opportunities for terminals and ports, benefiting public and private stakeholders. The top-ranked container port in CPPI 2023 is Yangshan Port in China.</p> <p>Also in the News:</p> <p>The Union Cabinet approved the development of a Greenfield Major Port at Vadhavan in Maharashtra (Palaghar District). This port will be constructed through a Special Purpose Vehicle (SPV) formed by Jawaharlal Nehru Port Authority and Maharashtra Maritime Board on the basis of the Landlord Model.</p> <div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">Models of Port ownership</p> </div>
<p>State of Global air-2024' Report</p>	<p>The report by the Health Effects Institute and UNICEF examines global air pollution trends from 1990 to 2021, highlighting significant health impacts.</p> <p>Almost the entire global population (99%) resides in areas with unhealthy levels of PM2.5 pollution, which refers to fine airborne particles less than 2.5 micrometres in diameter.</p> <p>Low- and middle-income countries typically face 1.3 to 4 times higher levels of PM2.5 exposure. Air pollution exacerbated COVID-19 outcomes by compromising immune systems and causing lung inflammation and oxidative stress.</p> <p>In India, along with China, over half of the global disease burden associated with air pollution was reported, and nearly half of all ozone-related Chronic Obstructive Pulmonary Disorder (COPD) deaths occurred in India in 2021.</p>

MAPPING

INTERNATIONAL

<i>Place in news</i>	<i>Context</i>
<p>1. TECHO FUNAN CANAL (CAMBODIA)</p>	<p>Context: Cambodia will start constructing the Chinese-backed Techo Funan Canal. The 180-km canal aims to connect the Mekong River basin to the Cambodian coast. This is despite tensions with Vietnam and concerns about potential military use by China.</p> <p>About Cambodia: It is a Southeast Asian country bordering Thailand, Laos, and Vietnam, with a coastline along the Gulf of Thailand. A 1997 coup established Hun Sen and the Cambodian People’s Party’s dominance, making Cambodia a de facto one-party state despite being constitutionally multi-party. Designated a least developed country by the UN, Cambodia is a member of ASEAN, WTO, and other international organizations. Its economy is primarily agricultural, with growing sectors in textiles, construction, garments, and tourism, making it vulnerable to climate change.</p> <p>Cambodia’s Planned Canal to the Ocean</p>  <p>The map shows Cambodia's geographical context with Thailand to the west, Laos to the north, and Vietnam to the east. The Mekong River flows through Cambodia, and the planned canal is shown as a blue line extending from the river to the coast. Key locations like Phnom Penh and Ho Chi Minh City are marked.</p>
<p>2. ABU MUSA, GREATER TUNB, AND LESSER TUNB ISLANDS</p>	<p>Context: Iran summoned China’s ambassador to protest a China-UAE statement on the sovereignty of Abu Musa, Greater Tunb, and Lesser Tunb islands, which are also claimed by the UAE but have been held by Iran since 1971.</p>  <p>The map illustrates the strategic importance of the Strait of Hormuz, a sea lane between the Persian Gulf and the Gulf of Oman. It shows the location of Bandar-e Lengeh in Iran and Bandar-e 'Abbās in the U.A.E. Key islands like Jazireh-ye Qeshm, Jazireh-ye Tonb-e Küchek (Lesser Tunb), and Jazireh-ye Tonb-e Bozorg (Greater Tunb) are highlighted, along with Abu Musa (Abu Musa).</p>

3. FIVE EYES ALLIANCE

Context: Australia will allow non-Australian citizens from Five Eyes countries to join its armed forces, in order to meet the shortage of personnel.

About Five Eyes Alliance:

1. **Five Eyes Alliance:** The Five Eyes Alliance refers to an intelligence-sharing partnership among five countries: the United States, the United Kingdom, Australia, Canada, and New Zealand.
2. **These nations collaborate closely on intelligence matters**, sharing information to protect their shared national interests.
3. **Origins of the Alliance:** The alliance traces its origins back to World War II when the UK and the US decided to share intelligence after successfully breaking German and Japanese codes.
4. **It began as the Britain-USA (BRUSA) agreement**, later evolving into the UK-USA (UKUSA) agreement, with Canada joining in 1949 and New Zealand and Australia in 1956.

The 5 Eyes, 9 Eyes, and 14 Eyes Alliances



4. MOUNT KANLAON

Context: Mount Kanlaon, located in the central Philippines, erupted recently (through a **Phreatic eruption**), prompting hundreds of people to seek shelter in evacuation centres.

About Mount Kanlaon/ Canlaon:

It stands as the **highest peak on Negros Island** and is one of the **active volcanoes** within the **Philippines' Pacific Ring of Fire**. The volcano comprises various **pyroclastic cones and craters**, with its summit boasting a broad caldera and a crater lake.

Phreatic eruptions, characterized by steam-driven explosions resulting from heated groundwater, are typical occurrences, often preceding or following traditional volcanic eruptions.



5. MERCURY ISLAND

Context: The documentary “My Mercury” premiered at the **18th Mumbai International Film Festival (MIFF) for Documentary, Short Fiction, and Animation Films.**

- The film explores the life of her brother, Yves Chesselet, a conservationist on **Mercury Island off the coast of Namibia.** The 104-minute documentary portrays Yves’ efforts to reclaim the **island for endangered seabirds and seals, emphasizing the psychological challenges and deep bond between man and nature.**

About Mercury Island:

Mercury Island is a **small rocky island off The Diamond Coast, Namibia.** Despite its small size, **it is recognised by BirdLife International and other global conservation groups** as an Important Bird Area (IBA) for its significant **coastal seabird breeding.**

6. NORD STREAM METHANE LEAKS

Context: Thousands of tonnes of methane from **the September 2022 Nord Stream pipeline** explosions dissolved in the **Baltic Sea,** raising concerns about marine life and carbon cycles.

A study found that **between 10,000 and 50,000 tonnes of methane** likely dissolved in the water, potentially altering microbial life and local carbon budgets.

The **Nord Stream pipelines** are crucial conduits for **transporting natural gas from Russia to Europe.** **Nord Stream 1, completed in 2011,** runs from Vyborg in Russia to Lubmin near Greifswald, Germany, with majority ownership by the Russian state-owned gas company Gazprom. Before the war, this pipeline supplied 40% of Europe’s pipeline gas, which has now decreased to 9%. **Nord Stream 2 is a 1,200-km pipeline extending from Ust-Luga in Russia to Greifswald in Germany,** designed to carry 55 billion cubic meters of gas annually. This pipeline crosses the **Exclusive Economic Zones (EEZs)** of Russia, Finland, Sweden, Denmark, and Germany, as well as the territorial waters of Russia, Denmark, and Germany, highlighting its extensive reach and strategic importance.



7. NAMAQUALAND (AFRICA)

Context: Scientists recently discovered that termite mounds along the Buffels River in Namaqualand are the world's oldest inhabited, dating back 34,000 years.

What is Namaqualand?

Namaqualand is a desert region in southwestern Africa, extending from the Karas region in Namibia to the Northern Cape province in South Africa. It stretches from the **Namib Desert in the west to the Kalahari Desert in the east**. The northern part, known as Great Namaqualand, is in Namibia, while the southern part, called Little Namaqualand, is in South Africa. This **arid area is known for its succulents and spectacular spring wildflower blooms** following winter rains. Historically, the **Nama people** lived there, mining copper and, later, diamonds were discovered in the early 1900s.



8. DENMARK TO INTRODUCE WORLD'S FIRST CO2 TAX ON FARMS


Context: [Denmark](#) will impose a **tax on livestock CO2 emissions from 2030**, the first country to do so, aiming to meet its 2030 goal of reducing greenhouse gas emissions by 70% from 1990 levels.

The government reached a compromise with farmers, industry, labour unions, and environmental groups. The tax will start at **300 Danish crowns per tonne of CO2, rising to 750 crowns by 2035**, with income tax deductions and subsidies to support farmers. This initiative is expected to inspire similar actions in other countries.

[Denmark](#) is a Nordic country, part of the **Jutland Peninsula**, shares a **territorial boundary with Germany** to the south and is bordered by the North Sea on the west coast and Kattegat Bay on the east coast. Geographically, Denmark is an archipelago of around 400 islands, with Zealand being the largest.



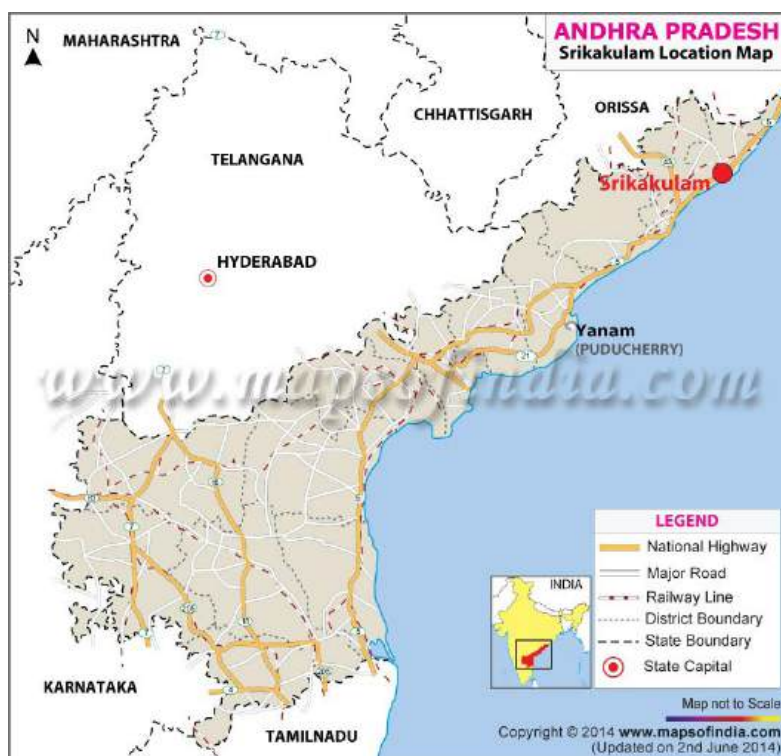
INDIAN

Place	Why in News?
<p>9. KOLAR GOLD FIELDS (KGF)</p>	<p>Context: The Karnataka government has approved the <u>Centre’s proposal to revive gold mining and auction 13 tailing dumps spanning 1,003 acres</u> at Kolar Gold Fields (KGF).</p> <p>The mines, owned by <u>Bharat Gold Mines Ltd. (BGML)</u>, are set for revival under the <u>Mines and Minerals Development and Regulation Act, 1957</u>. The move aims to generate employment and boost domestic gold production. KGF is among the deepest in the world. <u>Mining at KGF began in 1880 by Jhon Taylor & Sons</u>. After 121 years of operation, the <u>mines closed on February 28, 2001</u>, due to high operational costs and low revenues. Besides gold extraction, KGF has been utilized for <u>particle physics experiments</u>, leading to the discovery of <u>atmospheric neutrinos</u>.</p> <p>Currently, India operates three gold mines: <u>Hutti and Uti in Karnataka, and Hirabuddini in Jharkhand</u>. India produces approximately <u>1.6 tonnes</u> of gold annually, far below its consumption of 774 tonnes per year.</p> <p>KGF (Kolar Gold Fields) is situated <u>100 kilometres from Bangalore in Karnataka’s Kolar district</u>.</p>  <p>Fig: Kolar District (Karnataka)</p>

10. SRIKAKULAM (ANDHRA PRADESH)

Context: Srikakulam boasts significant Buddhist sites, Neolithic caves, and ancient temples. Historians, academics, and enthusiasts are working to restore the prominence of Srikakulam’s ancient history.

Srikakulam, formerly known **as Chicacole during British colonial** rule, boasts a rich history. It was once part of the **Kalinga Dynasty and later came under the Gajapati Kingdom** during the medieval period, followed by the Eastern Chalukyas of Vengi, and was also part of the **Kakatiya and Vijayanagara Empires**. The district is home to significant cultural sites, including the Buddhist locations of **Salihundam**, from where Buddhism spread to Sumatra and other eastern countries, and Danthapuri. Jainism is represented in **Tangamayyakonda and Rottavalasa** villages. Notable Hindu temples include **Srimukhalingam, Srikurmam, and Arasavilli**. Additionally, the district features Neolithic-era caves in **Nandi Hills**, showcasing its diverse and ancient heritage.



11. BARDA WILDLIFE SANCTUARY

Context: The Gujarat Forest Department has begun **transferring spotted deer (cheetal) and sambars from Gir Forest to Barda Wildlife Sanctuary**, aiming to enhance the prey base for Asiatic lions. This move follows the **migration of six lions to Barda from Gir**, marking their return after 143 years.