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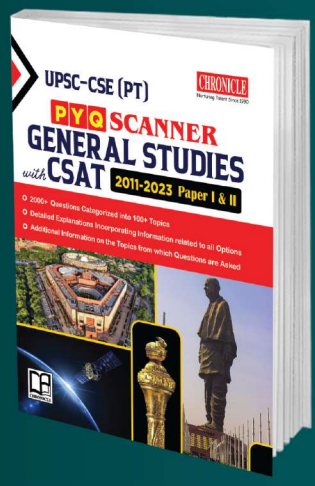

CSE Prelims Special

GS Roundup-1

36 Most Important Topics from which Questions are Frequently Asked in the Preliminary Examination

- Sufi & Bhakti Movement: Personalities
- Ancient Indian Ports & Trade Centres
- British Education System in India
- Factors Affecting Indian Monsoon
- Production of Major Crops in India
- Constitutional Amendment
- Powers of Governor
- Powers & Jurisdiction of Supreme Court
- Local Self-Governance
- Motions in Parliament
- Disqualification of Members of Parliament
- Functioning of RBI
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- Bonds & Securities
- Infrastructure Finance in India
- India's Fiscal Policy
- Early Medieval Dynasties
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- Drainage System of India
- Major Wetlands of India
- Mountain Vegetation of India
- Parliamentary Form of Government
- Applications of Artificial Intelligence
- India's Progress in Space Technology
- Climate Change: Global Initiatives

..... and many more

ARTICLES

- Chandrayaan-3 Mission
- 15th BRICS Summit
- Circular Economy in India
- Preserving the Amazon Rainforest: A Call to Action
- Drug Abuse among Young Persons
- CAG Report on AB-PMJAY
- Amitabh Kant Committee Report
- The Digital Personal Data Protection Act, 2023

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Exam Pointers

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REGULAR COLUMNS

Editor's Message

Dear Readers,

Starting with this issue, we are presenting the content of the regular columns in a new format. The content is backed by rigorous R&D on various aspects of current affairs in relation to the civil services examinations, including a thorough understanding of the syllabi, analysis of the changing trends of the question papers, etc. It is our constant endeavour to come up with meticulously developed content that can cater to the varying needs of the aspirants.

We hope you like the content and find it useful in your preparation. We encourage you to send us your feedback at cscenglish@chronicleindia.in / Mob- 9582948817

Happy reading!

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BIG ISSUE

Chandrayaan-3 Mission

Significant Milestone in India's Space Odyssey

India has a huge untapped potential in the space sector. Through adequate policy measures, this potential can be harnessed to make the country stand at par with the other space superpowers of the world. Space activities are very expensive and this investment gap can be bridged by promoting the private sector. This will not only yield the best results but will also help India achieve top position in the global space industry.

■ Dr. Amarjeet Bhargava

On 23rd August, 2023, India's Chandrayaan-3 Lander Module successfully soft landed on the Moon's South Pole. With this, India has become the first country to land a spacecraft in the uncharted region near the South Pole of the Moon. India is the fourth country in history to complete a soft landing on the Moon after the United States, the Soviet Union and China.

On this momentous occasion, it was announced by the Prime Minister that the point where Vikram Lander touched the surface of the Moon will be named 'Shiv Shakti' and the spot where Chandrayaan-2 (which failed in 2019) left its footprint on the Moon, will be known as 'Tiranga Point'. Also, August 23 has been declared as 'National Space Day' to commemorate the remarkable achievement of Chandrayaan-3 landing.

The successful soft landing of Chandrayaan-3 on the Moon is being seen as an important milestone in the field of space exploration. India's ambitious space program will, in due course of time, help establish the country as a space superpower in the future.

Discoveries made by Chandrayaan-3 so far

- **Presence of Sulfur and other Elements:** The presence of the Laser-Induced Breakdown Spectroscope (LIBS) instrument on Chandrayaan-3's 'Pragyan' rover has 'unequivocally confirmed' the presence of sulfur on the surface of the Moon's South Pole. Other traced elements includes aluminum (Al), calcium (Ca), iron (Fe), chromium (Cr), titanium (Ti), manganese (Mn), silicon (Si), and oxygen (O).
- **Temperature Variation on Lunar Surface:** Measurement of the temperature of the Moon's soil by Chandrayaan-3 has revealed that the temperature on the Moon's surface ranges from minus 10 degrees Celsius to about 70 degrees Celsius. At the same time, the temperature below the surface (80 mm) was recorded at minus 10 degrees. Similarly, a temperature of 60 degrees was recorded about 20 mm above the surface.

About Chandrayaan-3

- Chandrayaan-3 is a Lunar Exploration Mission of the Indian Space Research Organization (ISRO). It was launched using the LVM3 rocket system.
- It is the third mission in the Chandrayaan series after Chandrayaan-1 and Chandrayaan-2. With the success of this latest mission, Indian scientists have demonstrated the full capability of a safe landing and roving of a rover on the lunar surface.
- Chandrayaan-3 consisted of a lander and a rover configuration. The lander that soft landed on the moon has been named 'Vikram' and the rover that is moving on the lunar surface has been named 'Pragyan'.

Launch Vehicle Mark 3

- Launch Vehicle Mark-III (LVM3), is a three-stage medium-lift launch vehicle developed by ISRO.
- Earlier known as 'GSLV Mk-III', it is the most powerful rocket in the ISRO's stable.
- The 3-stages include two solid boosters S200 strap-ons, and a core stage (consisting of an L110 liquid stage and a C25 cryogenic stage). This Launch Vehicle uses cryogenic engine (CE20).
- It can carry a payload of up to 8,000 kilograms to a low-Earth orbit (LEO) and about 4,000 kilograms of payload to a geostationary transfer orbit (GTO).

Mission Objectives

The mission objectives of the Chandrayaan-3 mission was

- to perform a safe and soft landing on the lunar surface;
- to demonstrate roving on the Moon; and
- to conduct in-situ scientific experiments.

Modules & Payloads

Modules

Three modules were included in the Chandrayaan-3 mission:

(i) Propulsion Module (PM)
(ii) Lander Module (LM)
(iii) Rover

- The main function of the Propulsion Module (PM) was to propel the Lander Module (LM) to the final 100 km

circular polar orbit of the Moon by Launch Vehicle Injection, after which the Lander Module was separated from the Propulsion Module.
- The Rover was delivered to the surface of the Moon through the Lander Module (LM) and the Rover will do in-situ chemical analysis of the lunar surface.

Payloads

Following are the various payloads in Chandrayaan-3 with their functions:

Payloads sent with the Propulsion Module (PM)

- **Spectro-Polarimetry of Habitable Planet Earth Payload (SHAPE):** SHAPE payload will conduct novel spectro-polarimetric studies of Earth from lunar orbit. It will look for smaller planets that could be habitable.

Payloads sent with the help of Lander Module (LM)

- **Chandra's Surface Thermophysical Experiment (ChaSTE):** ChaSTE will measure the thermal conductivity and temperature near the South Pole.
- **Instrument for Lunar Seismic Activity (ILSA):** IILSA will measure the seismicity around the landing site and delineate the structure of the lunar crust and mantle.
- **Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere (RABHA) and Langmuir Probe (LP):** RAMBHA and LP will measure the near surface plasma (ions and electrons) density and its changes with time.
- **LASER Retroreflector Array (LRA):** LRA is a passive experiment to understand the dynamics of Moon system.

Payloads sent with the help of Rover

- **Laser Induced Breakdown Spectroscope (LIBS):** LIBS will derive the chemical composition and infer mineralogical composition to further our understanding of lunar surface and qualitative and quantitative elemental analysis.
- **Alpha Particle X-ray Spectrometer (APXS):** APXS will determine the elemental composition (Mg, Al, Si, K, Ca, Ti, and Fe) of lunar soil and rocks around the lunar landing site.

Significance of Chandrayaan-3 Mission

- **Change in Objectives:** ISRO's space activities were earlier focused on utilitarian objectives like enabling telecommunication, telemedicine and tele-education, broadcasting and establishment of remote sensing satellites. But, with the success of Chandrayaan-3, ISRO's priority is becoming space and planetary exploration.
- **Boost to Future Missions:** The success of Chandrayaan-3 will boost future lunar missions (like LUPEX in 2024). This will also give a boost to the 'International Lunar Research Station Programme' which will be a better alternative to the 'International Space Station' for conducting space experiments.
- **Enhancement of India's Role and Position in the Artemis Accord:** India is now a member of the Artemis Accords. This is the U.S.-led multilateral effort to place humans on the moon by 2025 and thereafter to expand human space exploration to the earth's wider neighborhood in the solar system. With the success of Chandrayaan-3 mission, India has an opportunity to lead the other Artemis countries alongside the U.S.
- **Increase in Space Industrialization:** India can acquire extra-terrestrial mineral resources through deep space exploration activities.
- **Expanding Cooperation in Outer Space:** India's success in space missions such as Chandrayaan-3 in the current global era of geopolitical competition provides an opportunity for the country to expand cooperation and limit the ongoing competition among different countries in outer space.
- **Boost to Indian Space-Tech Ecosystem:** The successful launch of Chandrayaan-3 has boosted investor confidence and will now help attract more private investment in space technology.

United Nations Treaties on Outer Space

The following five United Nations treaties on outer space have been signed till date. India is a signatory to all five of these treaties, but has ratified only four so far. India has not ratified 'The Moon Agreement, 1979'.

(i) **Outer Space Treaty, 1967:** Treaty on principles governing the activities of nations in the exploration and use of outer space, including the Moon and other celestial bodies.

(ii) **Rescue Agreement, 1968:** Agreement on rescue of astronauts, return of astronauts and return of objects thrown into outer space.

(iii) **Liability Convention, 1972:** Convention on International Responsibility for Damage Caused by Space Objects.

(iv) **Registration Convention, 1976:** Convention on the Registration of Objects Launched into Outer Space.

(v) **The Moon Agreement, 1979:** Agreement governing the activities of countries on the Moon and other celestial bodies.

Difference between Chandrayaan-3 and Chandrayaan-2

Chandrayaan-3 has been designed to overcome the shortcomings of Chandrayaan-2 lander's crash landing on the lunar surface.

The major differences between Chandrayaan-3 and Chandrayaan-2 are following:

- **Launch Vehicle:** Chandrayaan-2 was launched with the help of GSLV MK III while Chandrayaan-3 was launched with the help of LVM III launch vehicle.
- **Cameras:** Chandrayaan-2 included a camera for Lander threat detection and avoidance. Whereas, Chandrayaan-3 uses two cameras for threat detection and avoidance, which are more advanced than those in Chandrayaan-2.

- **Landing Site:** Chandrayaan-2 attempted to land near the South Pole of the Moon, specifically in an area called the South Polar Region-Highland Fractured Terrain.
  - On the other hand, for Chandrayaan-3, artificial intelligence (AI) was used to determine the landing site using data from more robust landing cameras.
- **Landing Area Target:** The target area of Chandrayaan-2 was 500 X 500 meters. On the other hand, the target area of Chandrayaan-3 was kept at 4 km X 2.4 km, so that the lander could have more options to choose the best target site for itself.
- **Payload:** Chandrayaan-2 had no specific payload. Whereas, many types of payloads have been sent with Chandrayaan-3.
- **Design Methodology:** The design of Chandrayaan-2 was Success-Based Design while the design of Chandrayaan-3 was Failure-Based Design. This means that even if everything on Chandrayaan-3, including its sensors and electronics, had failed, Vikram would still have made a soft landing.
- **Orbiter:** The orbiter of Chandrayaan-2 was successfully placed. Chandrayaan-3 does not have a separate orbiter but is using the orbiter of Chandrayaan-2.

Others Differences

- The payload weight of Chandrayaan-3 is more than that of Chandrayaan-2 and most of the extra weight has been kept on the lander itself for successful landing.
- The number of thrusters in Chandrayaan-3 has been reduced from five (in Chandrayaan-2) to four, there is no central thruster in Chandrayaan-3.
- The legs of the lander in Chandrayaan-3 were made stronger than those of Chandrayaan-2 to ensure that they could land at a higher velocity.
- Additional solar panels have been used in Chandrayaan-3 as compared to Chandrayaan-2 to ensure power generation after soft landing regardless of the weather on the Moon.

Reasons for Selecting the South Pole of the Moon for Landing

The South Pole of the Moon assumes great significance on account of the following factors:

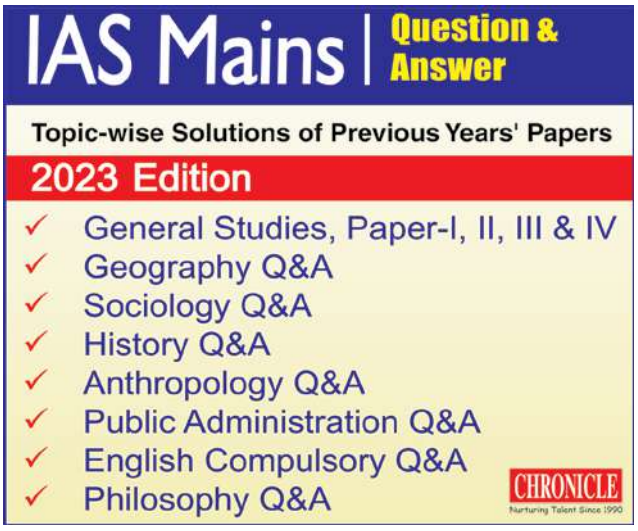
- **Water Resource:** The South Pole offers the greatest potential to find water ice. The discovery and confirmation of the presence of water on the surface of the Moon is essential for future human missions and the possible use of lunar resources.
- **Scientific Discoveries:** The extreme environment and presence of permanently shadowed regions in the South Pole may provide a preserved record of the history of the Moon and the early Solar System.
- **Clues to Earth's History:** It is believed that the Moon was formed by a huge collision between the Earth and another planet, in such a situation, possible information about the Earth's history was obtained by studying the rocks of the Moon surface.
- **Technological Advancements:** Through the success of soft landings, navigation, resource utilization and long-duration operations in the South Pole of the Moon, ISRO can develop and demonstrate innovative technologies that may be applied in future space missions.

Steps Needed to Make India a Space Superpower

- **Multidimensional Approach:** Despite successful missions like Chandrayaan-3, India's share in the total global space economy is only around 2%. India needs a multipronged approach to become a space superpower in the 'Amrit Kaal'.
- **Private Sector Participation:** India should formulate such a policy which can promote private investment in the space sector. India's space program should be driven by commerce.
- **Formulating a Robust Law on Space Activities:** A law on space activities should be formulated to attract private investors and provide clarity and security to space exploration activities.
- **Establishment of Space Disputes Tribunal:** Private sector is getting a boost in space activities in India. Steps should be taken to establish an independent tribunal to settle potential disputes between space entities.
- **Enhanced International Collaboration:** To ensure the success of future programmes, India should initiate collaboration and research activities with leading countries in the space sector such as the US and Russia. These countries have the largest number of satellites launched from Earth into space.

Conclusion

In order for India to establish itself as a global space superpower, outer space will play an important role in future for the country. India's space agency, ISRO, has been diligently working to achieve the said objective. Also, the government should act as a facilitator to overcome the existing challenges, so that India can succeed in establishing its true identity in the space sector.



Spotlight

15th BRICS Summit
Leveraging Collective Power

Collaboration among the BRICS nations, since the inception of the grouping, has led to a significant impact on global governance, efforts to democratise international relations, and economic development. BRICS continues to take impressive steps in developing and broadening cooperation, as has been witnessed in the grouping's recent decision to add six new members.

■ Chandrakant Singh

On 22-24 August, 2023, Indian Prime Minister visited Johannesburg, South Africa, to attend the 15th BRICS (Brazil, Russia, India, China, and South Africa) Summit. This was the first in-person BRICS Summit since 2019. The theme for Summit was "BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development and Inclusive Multilateralism".

BRICS plays a critical role in shaping the global economic policy and promoting financial stability, accounting for 17% of global trade and one-third of global GDP. The evolution of the grouping assumes significance in the current context of a changing world order.

Key Outcomes of the Summit

Reaffirming Multilateralism and Advocating Reform

- The BRICS leaders have released a collective statement underscoring their dedication to upholding multilateralism, international legal norms, and the pursuit of sustainable development.
- Additionally, they have voiced their endorsement for the overhaul of global entities such as the United Nations, with the aim of enhancing their inclusivity and capacity to address the concerns of developing nations.

Expanding Membership and Influence

The BRICS leaders have embraced a broader approach to membership.

- **Phase One of Expansion:** Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and the UAE have been formally invited to join the BRICS grouping, with their membership slated to commence on January 1, 2024.
- **An Overwhelming Interest:** More than 40 nations have expressed a keen interest in becoming part of BRICS.
- **Motivations for BRICS Expansion**
  - **China's Strategic Global Influence:** China's strategic vision for increasing its global influence serves as a driving force behind the expansion.
  - **Broader Engagement among Nations:** The desire for a wider and more inclusive engagement among nations with shared goals is another motivating factor.
  - **Limited Alternatives in Other Groups:** Limited alternatives in existing international organizations have prompted countries to seek membership in BRICS.
  - **Anti-Western Sentiment and Global South Unity:** A sentiment against Western dominance and a desire for greater unity among nations from the Global South also contribute to the expansion effort.

Common Currency Prospect

- The BRICS leaders have reached a consensus to investigate the potential establishment of a unified currency designed for facilitating trade and investment within the BRICS member nations.
- They have delegated the responsibility of examining the viability and advantages of such a currency to their finance ministers and central bank governors.
- The intended outcome is to potentially diminish their reliance on the US dollar and other dominant global currencies.

Addressing Regional and Global Concerns

- The BRICS leaders engaged in comprehensive discussions concerning a range of regional and global issues. These included the Covid-19 pandemic, climate change, counterterrorism efforts, cybersecurity, energy security, as well as matters concerning trade and investment.
- In unison, they advocated for fair and equitable access to vaccines and essential medical resources for all nations while committing to strengthen their collaborative efforts in the fields of health research and innovation.

BRICS Expansion

- The principles set forth in the BRICS Sanya Declaration of 2011 are aimed at increasing engagement and cooperation with non-BRICS countries, in particular developing countries, and to enhance the voice of the Global South in international affairs.
- The Beijing Declaration adopted at the 14th BRICS Summit in 2022 paved the way for membership expansion. China had proposed the "BRICS Plus" expansion plan in 2017.

The Need for Expansion

- The notion of expanding the BRICS alliance gains traction as prospective members, ranging from Iran to Argentina, share a common aspiration: to level the global playing field.
- This ambition arises from the perception that international institutions like the United Nations, the International Monetary Fund, and the World Bank are disproportionately influenced by affluent Western nations. The list of grievances is extensive, encompassing unfair trade practices, punitive sanctions, and a perceived disregard for the development needs of less prosperous nations.
- Amidst widespread discontent with the existing global order, the BRICS nations—currently comprising Brazil, Russia, India, China, and South Africa—have made a resounding commitment to transform the alliance into a prominent advocate for the interests of the 'Global South,' resonating with many who seek a more equitable world.

Potential Advantages for India

- **Diversification from US Dollar Dependency:** India's heavy reliance on the US dollar for foreign trade and currency reserves currently exposes it to fluctuations in the dollar's value, which can negatively impact its economy. The introduction of a BRICS currency would provide India with an alternative to the dollar, decreasing its dependence on the US and enhancing economic stability.
- **Facilitated Trade and Investment:** The adoption of a BRICS currency would streamline trade with other BRICS nations, potentially leading to heightened trade and increased investment between India and its BRICS counterparts. This could contribute significantly to India's economic growth.
- **Diminished Political Pressure from the US:** Historically, the US has employed its financial influence to exert political pressure on other nations, including imposing sanctions on countries that do not align with its foreign policy objectives, such as sanctions on Iran. The introduction of a BRICS currency could reduce India's susceptibility to such political pressures from the US.

About BRICS

The term BRIC (Brazil, Russia, India, and China) was first coined by the Chief Economist of Goldman Sachs, in 2001, in the context of an exercise to forecast global economy trends over the next half century.

- BRIC as a forum was formalized with the meeting of Foreign Ministers of the four countries on the margins of the UN General Assembly in New York in September, 2006.
- The First BRIC Summit was held in Yekaterinburg, Russia in 2009. Following a consensus amongst the BRIC leaders, South Africa was invited to join the forum on 24 December, 2010 and BRICS was formed.
- BRICS is an important grouping bringing together the major emerging economies from the world, comprising 41% of the world population, having 24% of the world GDP and over 16% share in the world trade.
- BRICS countries have been the main engines of global economic growth over the years. Over a period of time, BRICS countries have come together to deliberate on important issues under the three pillars of political and security, economic and financial and cultural and people to people exchanges.

Rationale behind Formation of BRICS

- The formation of BRICS was rooted in the long-term common economic interests of the member countries, which include reforming the global financial and economic architecture, strengthening the principles and standards of international law and supporting the complementarities in many sectors of their economies.
- India and BRICS
- India shares close economic and cultural ties with her BRICS partners. India attaches high importance to engagement with BRICS as a platform for coordination, consultation and cooperation on current issues.
- India's engagement with BRICS countries may be seen in the context of our proactive and broad-based international engagement to contribute towards building a peaceful and prosperous world.

New Development Bank

- The New Development Bank is key milestone of the cooperation among emerging economies and developing countries.
- It is a testament of coming of age of these countries in the world of development finance.
- The idea for creation of the New Development Bank was first mooted in the Fourth BRICS Summit at New Delhi on March 29, 2012 to meet the development funding requirements of the five founding countries and other emerging economies and developing countries as well.
- On July 15, 2014 at the Sixth Summit in Fortaleza, Brazil the member countries signed the Articles for the New Development Bank with an Authorized Capital of USD 100 billion.
- The founders established the Bank with a purpose of mobilizing resources for infrastructure and sustainable development projects in BRICS and other emerging economies and developing countries, complementing the existing efforts of multilateral and regional financial institutions for global growth and development.
- The first Board of Governors meeting of the Bank was held in Moscow, Russia on July 7, 2015 where the Bank formally came into existence as a legal entity. Mr. K.V. Kamath was elected the first President of the Bank.
- The bank is headquartered in Shanghai, (China) with a regional office in Johannesburg, South Africa.

- In the context of trade with BRICS partners, India's strengths lie in labour, services, generic pharmaceuticals, and information technology.
- There are significant synergies with other BRICS partners which may be tapped to further strengthen intra-BRICS linkages in these areas.

Challenges before BRICS

Some of the key challenges which the BRICS faces are outlined here.

- **Unilateral Coercive Measures**: The BRICS nations express concern about the use of unilateral coercive measures in global affairs. These measures can disrupt international trade and relations, posing a challenge to the goal of fostering inclusive multilateralism and upholding international law.
- **Global Governance Reform:** While the BRICS leaders advocate for a more agile, effective, efficient, representative, democratic, and accountable international and multilateral system, achieving comprehensive reform of institutions like the United Nations, including the UN Security Council, remains a complex challenge due to resistance from existing power centres.
- **Human Rights and Fundamental Freedoms:** Balancing the promotion and protection of human rights and fundamental freedoms with the principles of equality and mutual respect can be challenging, as different countries have varying perspectives on these issues.
- **Peace and Conflict Resolution:** The BRICS nations express concern about ongoing conflicts worldwide and commit to peaceful conflict resolution. However, the challenge lies in finding common ground on specific conflicts and achieving meaningful progress in conflict resolution, especially in regions of high tension.
- **Post-Pandemic Economic Recovery:** The BRICS nations call on the international community to support post-pandemic economic recovery efforts. Coordinating efforts among member nations and addressing the diverse economic challenges within the BRICS group can be a complex task.
- **Development Assistance:** The commitment to assist countries in meeting their development goals, including post-conflict reconstruction and development, faces the challenge of resource allocation and ensuring effective aid delivery to achieve meaningful results.
- **Economic Policy Coordination:** While the BRICS nations encourage multilateral financial institutions and international organizations to play a constructive role in building global economic consensus, coordinating economic policies among diverse economies with varying priorities can be challenging.
- **Sustainable Development:** Implementing the Sustainable Development Goals (SDGs) in an integrated and holistic manner is a complex task that requires aligning national development priorities with global sustainability objectives.
- **Climate Change:** Addressing climate change, including access to low-emission technologies and adaptation measures, is challenging due to differing levels of technological and financial capacity among BRICS nations.
- **Population Matters and Disaster Management:** Strengthening cooperation on population matters and disaster management requires a coordinated effort and resource allocation to effectively respond to natural disasters and demographic challenges.
- **Universal Security:** Achieving a consensus on what constitutes 'universal security' and how to replace confrontation with dialogue and partnership requires navigating geopolitical differences and conflicting interests among BRICS members.
- **Economic Cooperation:** Enhancing economic cooperation, particularly in the face of rising de-globalization and unilateral sanctions, may be hindered by varying economic structures, trade policies, and levels of development among BRICS countries.
- **Institutional Development:** Establishing an institutional research wing akin to the OECD may require significant resources and coordination, and achieving consensus on its role and scope can be challenging.
- **Public Health Governance:** Leveraging respective strengths and promoting global health governance in favour of developing countries may face obstacles related to health infrastructure, vaccine distribution, and differing public health priorities.

Significance of BRICS

For India

- **Economic Cooperation:** BRICS provides India with a platform to enhance economic cooperation with major economies like China and Russia. India can tap into the vast markets of these countries, boosting trade and investment opportunities.
- **Energy Security:** Cooperation within BRICS can help India secure its energy needs, particularly through partnerships with resource-rich members like Russia and South Africa. This is vital for India's growing energy demands.
- **Improve Diplomatic Ties:** BRICS gives India a forum to amplify its diplomatic and political influence on the global stage. It enables India to engage with other emerging powers, align interests, and advocate for common concerns.
- **Development Funding:** BRICS offers India access to development banks like the New Development Bank (NDB), which can provide funding for infrastructure projects and development initiatives within the country.
- **Counterbalance to Western Influence:** BRICS serves as a counterbalance to Western-dominated international institutions and allows India to push for reforms in global governance structures, including the United Nations, IMF, and World Bank.

BRICS as a Platform for Global South

- **Collective Voice:** BRICS represents a collective voice for the Global South, advocating for their interests on the global stage. By addressing common concerns and issues, BRICS members work together to influence international discourse and policy.
- **Development Financing:** The BRICS-led New Development Bank (NDB) provides financial assistance to developing countries for sustainable development projects. This offers an alternative to traditional Western-dominated development banks.
- **South-South Cooperation:** BRICS promotes South-South cooperation, facilitating collaboration among developing countries in various areas such as trade, technology, and agriculture, fostering self-reliance and shared growth.
- **Global Governance Reform:** BRICS seeks reform in global governance institutions to make them more representative and equitable, reflecting the interests of the Global South. This is crucial for a fairer international order.
- **Advocacy for Multipolarity:** BRICS advocates for a multipolar world order, where power is more evenly distributed among nations, challenging the dominance of Western powers and promoting a more diverse and balanced global landscape.

Way Forward

- **Unilateral Coercive Measures:** BRICS should jointly condemn and advocate against unilateral coercive measures, promote multilateral dispute resolution mechanisms, and explore alternative trade and financial systems to mitigate disruptions.
- **Global Governance Reform:** BRICS nations should continue to lobby for comprehensive reforms in global governance institutions. They can form coalitions with like-minded countries and propose specific reforms to make international institutions more representative and accountable.
- **Development Assistance:** BRICS countries can pool resources and expertise to ensure efficient development assistance, emphasizing project effectiveness, local ownership, and transparency in aid delivery.
- **Sustainable Development:** Establish working groups to facilitate the integrated implementation of SDGs, focusing on sharing best practices, technology transfer, and innovative financing mechanisms for sustainable development.
- **Climate Change:** Collaborate on climate action plans, encourage technology transfer, and support climate finance initiatives, ensuring that all BRICS nations contribute to global climate goals based on their respective capabilities.
- **Economic Cooperation:** Develop a comprehensive BRICS economic strategy that includes harmonizing trade policies, promoting investment, and addressing protectionism, with a focus on inclusive economic growth.
- **Institutional Development:** Establish a BRICS research institution focused on policy solutions tailored to the unique needs of developing countries, with clear objectives and a mandate agreed upon by all members.
- **Human Rights and Fundamental Freedoms:** Encourage open dialogues on human rights issues, share best practices, and emphasize the importance of cultural context in addressing these concerns while respecting international human rights standards.
- **Peace and Conflict Resolution:** BRICS should actively engage in diplomatic efforts, conflict prevention, and mediation in global conflicts. They can leverage their combined diplomatic influence to seek peaceful resolutions.
- **Public Health Governance:** Strengthen the BRICS Vaccine Research and Development Center, develop a robust early warning mechanism for infectious diseases, and work together to ensure equitable access to vaccines and critical medical supplies.

Conclusion

BRICS has emerged as a significant force in shaping the global landscape, advocating for the interests of the Global South, and seeking to address pressing challenges facing the world today. BRICS continues to evolve as a powerful alliance that seeks to address the challenges of an ever-changing world. Its commitment to multilateralism, cooperation on global issues, and expansion efforts reflect its ambition to create a more equitable and inclusive global order, benefitting not only its member nations but also the broader Global South. As BRICS moves forward, it has the potential to shape the future of international relations and foster a more balanced, sustainable, and prosperous world.

Spotlight

Circular Economy in India

Critical Imperative to Ensure a Sustainable Future

A circular economy involves reusing products, rather than scrapping them and then extracting new resources. In a circular economic model, all forms of waste are returned to the economy or used more efficiently. Such an approach offers a way to not only protect the environment, but use natural resources more wisely, develop new sectors, create jobs and develop new capabilities.

Further, the shift to a circular economy goes beyond recycling and reusing materials. It is a call to evaluate the environmental impact of products and their components from the initial concept stage through to end-use. In a circular economy, waste streams are eradicated with true, regenerative design.

■ Sharmila Senthil Kumar

In July 2023, India's Union Minister of Environment, Forest and Climate Change launched the Resource Efficiency Circular Economy Industry Coalition (RECEIC) on the sidelines of the 4th G20 Environment and Climate Sustainability Working Group (ECSWG) and Environment and Climate Ministers' Meeting in Chennai.

RECEIC is an industry-led initiative with a global focus on promoting resource efficiency and circular economy practices. Designed as an autonomous body, the coalition is projected to continue operations beyond India's G20 tenure, thereby facilitating a sustainable environmental impact.

The Mission of RECEIC is to facilitate and foster greater company-to-company collaboration; build advanced capabilities across sectors and value chains; bring learning from diverse and global experiences of the coalition members, and unlock on-ground private sector action to enhance resource efficiency and accelerate circular economy transition.

The coalition is structured around the three guiding pillars of partnerships for impact, technology cooperation and finance for scale. It will also aim to contribute towards progress on key global goals and priorities set by the G20 and other international fora.

The extraction and processing of natural resources causes half of global emissions and over 90% of biodiversity loss. The shift to a circular economy is therefore crucial to achieving the UN's Sustainable Development Goals and the Paris Agreement goal of limiting global temperature rise to as close as possible to 1.5 degrees Celsius above pre-industrial times.

The transition towards circular economy from a linear economy through improved resource efficiency holds significant potential. Not only does a circular approach to production and consumption reduce carbon emissions and pollution, it also boosts innovation and increases competitiveness. It is, indeed, a paradigm shift from our current take-make-waste economy to a resource economy which aims to redefine growth, focusing on positive, society-wide benefits.

About Circular Economy

Circular economy is a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting.

- This approach can help tackle climate change and other global challenges like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources.

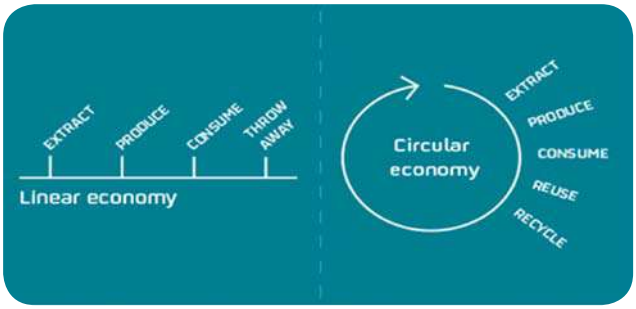
Circular Economy is based on three principles:

(i) Eliminating Waste and Pollution: The mismanagement of waste not only imperils human health and local ecosystems, but also exacerbates the climate crisis to alarming degrees. According to the World Bank, global waste is projected to increase by 70 per cent from a 2018 baseline by 2050 if companies do not divert from the "take-make-waste" linear economy approach.

(ii) Circulating Products and Materials: In order to let the circular economy become self-sufficient, it is not just enough to eliminate waste from the production process. Recovering and restoring products, components and materials for efficient reuse is an essential aspect of the circularity principle.

(iii) Regenerate Nature: Businesses need to focus on going beyond reducing their harmful impacts on the environment and should actively try to restore the health of our planet. This is the third and final cog of the closed loop system that is circular economy, actively feeding natural resources back into the planet.

- Circular economy departs from the traditional, linear economic model, which is based on a take-make-consume-throw away pattern. This model relies on large quantities of cheap, easily accessible materials and energy.



- A circular economy closes the loop between extraction, manufacturing, and disposal by advocating for designing products to reduce waste, using products and materials for as long as possible and recycling materials from end-of-life products back into the economy.
- By applying the principles of regeneration, circular economy decouples growth and stability from the consumption of scarce natural resources. Instead, it focuses on maximizing the value of products and materials, particularly those that typically end up in our waterways and landfills.

India's Linear Economic Model

India's current economic model is largely linear, where resources are extracted, processed, and transformed into products that are sold to consumers. After use, these products are disposed of, leading to a significant amount of waste generation.

- India's consumption growth is leading to a substantial increase in natural resource consumption, as the current linear economy model of "Take – Produce – Consume – Dispose" is putting a strain on our limited resources.
- For example, India is the 3rd largest producer of e-waste in absolute terms, but as of 2019, the per capita e-waste generation (2.4 kg) is still far less than the world average (7.3 kg) in the same year. Similarly, India produces 3.4 million tonnes (MT) of plastic waste in a year; only 30 per cent of it is recycled. As the economy grows, we can only expect e-waste generation to increase with improved consumer purchasing power.
- India is set to generate 165 MT of waste by 2030 and 436 MT by 2050. As a result, the annual greenhouse gas emissions from Municipal Solid Waste are expected to go up to 41.09 MT by 2030.
- The need of the hour is, therefore, a development model based on the circular economy approach that looks at sustainable waste management and optimum utilization of resources - key to an Aatmanirbhar Bharat.

Advantages of Circular Economy

The circular economy gives us the tools to tackle climate change and biodiversity loss together, while addressing important social needs. It gives us the power to grow prosperity, jobs, and resilience while cutting greenhouse gas emissions, waste, and pollution.

Some of the Key Advantages of Switching to a Circular Economic Model

- **Sustainability:** Circular economy establishes a more sustainable production and consumption model in which raw materials are kept longer in production cycles and can be used repeatedly, therefore generating much less waste.
- **Protects the Environment:** It reduces emissions, minimizes the consumption of natural resources, and reduces waste generation, thus protecting the environment.
- **Benefits the Local Economy:** It can benefit the local economy by encouraging production models based on the reuse of nearby waste as raw material.
- **Drives Employment Growth:** It stimulates the development of a new, more innovative and competitive industrial model and leads to higher economic growth and employment generation.
- **Promotes Resource Independence:** The reuse of local resources can lead to less dependence on imported raw materials.
- **Reduces Primary Material Consumption:** Circular economy reduces the number of primary materials consumed, including vehicle and construction materials, synthetic fertilisers, real estate land, etc. This is because circular economy products are meant to endure longer and be reused or recycled, and not sent to landfills.
- **Protects Land Productivity and Soil Health:** Circular economy helps to protect land productivity and soil health by using recycled materials and by minimising waste.
- **Increases Material Cost Savings for Producers:** In the circular economy, companies see waste as a valuable resource that can be used to create new products. As a result, producers save money on raw materials and disposal costs. Furthermore, producers are less likely to experience fluctuations in raw material prices because they can source recycled materials instead of virgin materials.
- **Consumers Receive Safer Products:** In the circular economy, producers are more likely to use recycled materials that have been cleaned and purified. They're also incentivised to use organic and natural materials that don't harm the environment or our health. This helps to create a safer world for us to live in.

India's Transition to a Circular Economy

The government is aiming for a USD 5 trillion economy by 2025. Multiple government programs and schemes such as Digital India, Make in India, Production Linked Incentives (PLI), and Electronics System Design & Manufacturing (ESDM) have been launched - that aim to develop strong supply chains and make India a manufacturing hub in order to achieve the above stated objectives.

- While growth is always good, it has its own side effects. India's current linear economic model is putting a strain on our limited resources apart from generating huge amount of waste.

- However, the increasing waste generation doesn't have to be inevitable, and India can seize this moment to shift away from the linear model and increase its participation in the circular economy. By working across various phases, India can pursue its economic growth without following the same unsustainable trends as developed nations.
- The aim to achieve net-zero carbon emissions by 2070 will come to reality only if India can successfully mitigate its waste production and increase recycling to cut down pollution. As a result, the country has geared up to transform its traditional take-make-waste consumption model into an environment-friendly circular economy to encourage sustainable development.
- The circular economy model could provide a strong framework for development and a basis for setting principles to guide business innovation, policy, and education.
- Applying these principles would help India build on its current circular economy practices and scale them across sectors and value chains, using existing building blocks to embark on a circular development path and capture its benefits.

Realizing the Vision of a Circular Economy: Challenges

The following challenges must be addressed for India to successfully adopt the circular economic model:

- **Lack of Awareness among Policymakers:** One of the critical challenges is the lack of awareness and understanding of the circular economy among policymakers in the country.
- **Lack of Understanding among Businesses and Consumers:** Many companies in India are still focused on the traditional linear economic model, which prioritizes short-term profits over long-term sustainability.
- **Inefficiency in the Waste Management Sector:** India has a vast informal sector involved in waste collection and disposal, and many of them are not aware of circular economy principles. The waste is not adequately collected or segregated, leading to environmental and health hazards.
- **Lack of Differentiation between Circularity and Recycling:** The policies around waste management in India broadly focus on end-of-life waste management. Very few focus on reducing the waste and maintaining the value proposition of material and components through close and narrow loop systems.
- **Absence of a Multi-Stakeholder Level Understanding:** A circular economy requires a collective effort from all stakeholders to create systemic change in the way we design, produce, consume, and dispose of goods and services.
- **Downcycling:** Downcycling refers to the process of recycling materials into products of lower value and quality compared to the original material. While downcycling does help in reducing the amount of waste generated, it also leads to a reduction in the quality and value of the recycled material, making it less desirable for reuse.
- **Lack of Research and Development:** The lack of research and development in this field limits the knowledge and expertise needed to develop circular business models, technologies, and products. Without research and development, businesses may not have the resources to develop and implement innovative circular solutions.

Government Initiatives

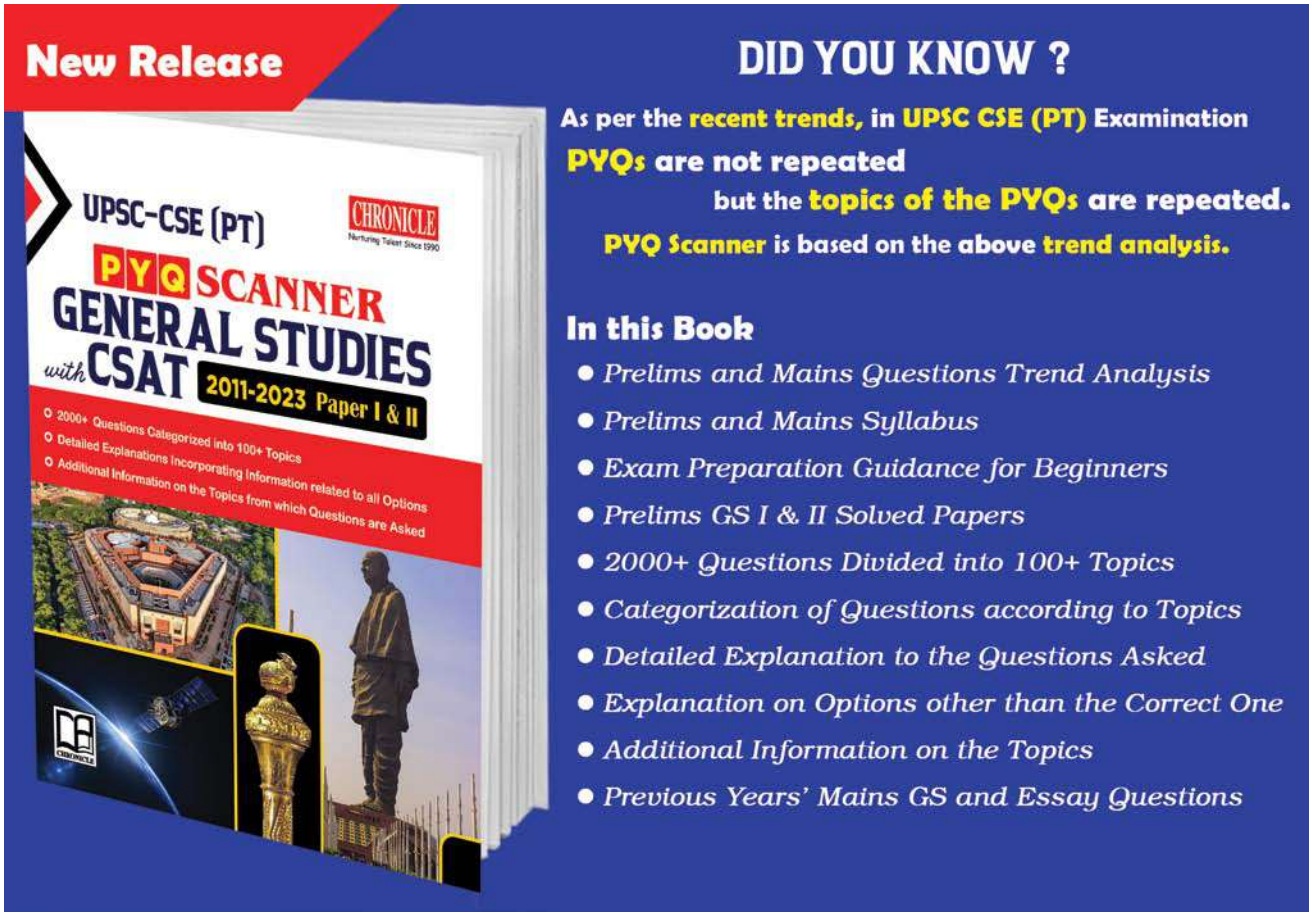
The Government of India has realized the importance of a circular economy in facilitating the country's sustainable growth. Hence, it has been actively formulating policies and initiatives to drive waste management and overcome the challenges regarding utilizing waste as a resource.

Regulatory policies like the Battery Waste Management Rules, Plastic Waste Management (Amendment) Rules, and e-Waste Management Rules, 2022 have set the target waste production and disposal standards for manufacturers, producers, importers, and consumers. It has also made Extended Producer Responsibility (EPR) certificates mandatory for companies to pursue transactions between stakeholders.

The Indian government has also formulated plans across electronics, lithium-ion batteries, end-of-life vehicles, and scrap metals to promote secondary material recycling.

Some of the Major Government Initiatives

- **The E-Waste (Management) Rules, 2022:** To curb the improper disposal of electronic products and to promote sustainable e-waste management practices.
- **The Plastic Waste Management (Amendment) Rules, 2022:** It establishes Extended Producers' Responsibility (EPR) guidelines.
  - EPR is an environmental protection strategy that makes the manufacturer of the product responsible for the entire life cycle of the product.
  - Under this, 2.6 million tonnes worth of EPR certificates had been generated by plastic waste processors and around 1.51 million tonnes of those certificates had been purchased by PIBOs (Producers, Importers and Brand owners).
- **Swachh Bharat Mission – Urban 2.0:** The focus is on source segregation of garbage, utilising the 3Rs (reduce, reuse, recycle), scientific processing of municipal solid waste, etc.
- **National Solar Mission**: It aims to increase the use of solar energy in India.
- **National Electric Mobility Mission Plan, 2020:** It aims to have at least 30% of all vehicles in India be electric by 2030.
  - This plan has been designed to enhance national fuel security, provide affordable and environmentally friendly transportation, and enable the Indian automotive industry to achieve global manufacturing leadership.



- **National Action Plan on Climate Change**: It represents a comprehensive strategy for addressing climate change in India. It also focuses on measures to reduce emissions and adapt to the impacts of climate change.

Recommendations

The following measures should be adopted for a successful transition to a circular economy in India:

- **Vision Document:** There is an immediate need to come up with a national level vision document of a circular economy.
- **Circular Economy Stakeholder Platform:** A stakeholder Platform can be an enabler of the circular economy mission by bringing together stakeholders from different sectors to share knowledge, exchange ideas, and collaborate on circular economy initiatives.
- **Need to Establish a Monitoring and Evaluation System:** To track the advances made towards achieving the vision of a circular economy.
- **Reducing Waste Generation and Managing Waste:** It is helpful for India meets its Mission Circular Economy. Waste reduction helps conserve natural resources by reducing the need for raw materials and energy consumption. Efficient waste management can create economic opportunities by promoting recycling, composting, and other forms of waste recovery.
- **Use Recycled Materials in Construction:** Construction waste causes a lot of environmental issues as a result of the particulate matter (PM) which gets released in the atmosphere and bringing the construction industry under a circular economy framework will help alleviate these issues.
- **Investing in Innovation and Technology:** To develop new circular solutions can help develop new materials that are more sustainable and environmentally friendly.

Conclusion

The implementation of a circular economy has numerous advantages including direct and positive implications for the competitiveness of companies, individual stakeholders, and the overall industrial sectors. To achieve an impactful circular economy transition, macro-economic level planning is important along with considering stakeholders.

India strives to pursue an inclusive and sustainable growth trajectory to become a $5 trillion economy by 2025. Accordingly, the government adopted multiple large-scale national initiatives like the 'Waste to Wealth Mission' to promote effective waste and pollution management.

A circular economy is the need of the hour to encourage recycling, refurbishing, and reuse of end-of-life products and minimise discards. Transitioning to a circular economy - one that recognizes and respects the value of our finite resources - will help ensure a sustainable future for all. ■■

inFocus

- The Digital Personal Data Protection Act, 2023
- CAG Report on AB-PMJAY
- Amitabh Kant Committee Report
- Preserving the Amazon Rainforest : A Call to Action

The Digital Personal Data Protection Act, 2023

On 11th August 2023, the President of India gave assent to the "Digital Personal Data Protection Bill, 2023" following its approval from both houses of the Indian Parliament.

- The enactment of the Act comes 6 years after Justice K.S. Puttaswamy vs. Union of India, a landmark case in which the Supreme Court of India recognized the fundamental right to privacy in India, including informational privacy, within the "right to life" provision of India's Constitution.

Objectives

- Establish a seamless transition to data protection regulations, minimizing disruptions while necessitating vital changes in data processing practices.
- Enhance the quality of life and the business environment, fostering a conducive atmosphere for both individuals and enterprises.
- Propel India's digital economy and innovation ecosystem, empowering growth and technological advancement.

Need for Data Regulation in India

- India's thriving startup ecosystem, ranked as the third-largest globally, is marked by a multitude of innovative companies harnessing data-driven technologies to fuel progress and advancement. As this expansion accelerates, the necessity for strong data regulation becomes increasingly apparent.
- Often referred to as the "new oil" powering modern economies and technologies, data play a pivotal role in driving innovation and competitiveness.
- Striking a delicate balance between capitalizing on the advantages of data-driven technologies and preserving the privacy and security of individuals' personal data is essential.
- Effective data regulation establishes a comprehensive framework that safeguards against data misuse, breaches, and unauthorized access, creating a secure and reliable digital environment.
- By fostering trust and ensuring responsible data handling practices, this regulatory approach reinforces the foundation for a flourishing and sustainable digital ecosystem.

Salient Features

Seven Guiding Principles

1. **Consent, Lawfulness, and Transparency:** Personal data must be used with explicit consent, lawfully, and in a transparent manner.
2. **Purpose Limitation:** Data can only be used for the specific purpose for which consent was obtained.
3. **Data Minimization**: Collection of only necessary personal data to serve the designated purpose.
4. **Data Accuracy:** Ensuring data correctness and updates.
5. **Storage Limitation:** Storing data only for the required period.
6. **Reasonable Security Safeguards:** Implementing measures for data security.
7. **Accountability:** Holding entities responsible for data breaches through adjudication and penalties

Data Principal

- Under the Act, a 'data principal' is the individual to whom the personal data relates and is akin to the term 'data subject' used in other global data protection legislation.
- This definition stretches to parents or lawful guardians in cases concerning a child (an individual under the age of 18) and lawful guardians acting on behalf of individuals with disabilities.

Applicability

- The Act applies to the processing of digital personal data within India where such data is: (i) collected online or (ii) collected offline and is digitised.
- It will also apply to the processing of personal data outside India if it is for offering goods or services in India.
- Personal data is defined as any data about an individual who is identifiable by or in relation to such data. Processing has been defined as wholly or partially automated operation or set of operations performed on digital personal data. It includes collection, storage, use, and sharing.

Consent

- Personal data may be processed only for a lawful purpose after obtaining the consent of the individual.

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Rank 7 PRIYANKA BHAGAT

Rank 8 ANKUR JAIN

Rank 10 GUNJAN GUPTA

Rank 12 SHIV KUMAR

Rank 13 AMIT SAHRAWAT

Rank 14 ABHITOSH P. SINGH RATHORE

Rank 16 SHILPI M JAIN

Rank 17 MUNISH BANSAL

Rank 19 POOJA JAIN

Rank 22 MOHAMMAD EHTESHAM

Rank 24 ANIL KR. PASWAN

Rank 26 ABHISHEK SRIVASTAVA

Rank 27 MANOJ KR. SHARMA

Rank 32 AMAN PRATAP SINGH

Rank 33 DEEPANKER MOHAN

HARYANA JUDICIAL SERVICES RESULTS, 2022 - 62 SELECTIONS OUT OF 122 TOTAL SELECTIONS

Rank 2 RUHELA

Rank 3 AKASH SAROHA

Rank 4 DEEPALI SINGLA

Rank 5 DEEPANSHU SARKAR

Rank 8 SAYESHA CHADHA

Rank 9 NEHA SINGH

Rank 10 NISHI JINDAL

Rank 11 AVISHAKE GARG

Rank 13 AKSHAY KUMAR

Rank 15 AMRITBIR KAUR

Rank 17 ANMOL KAKKAR

Rank 22 AKSHAY ARORA

Rank 23 JIGYASHA SHARMA

Rank 25 SHRADDHA TRIPATHI

Rank 28 DEEPIKA YADAV

Rank 31 UDIT AGGARWAL

Rank 33 LAKSHAY GARG

Rank 34 ANKITA MAHAJAN

Rank 35 VARUN BANSAL

Rank 37 SHALLY NAIN

Rank 39 HIMANI SAGAR

Rank 41 SACHIN SINGHAL

Rank 42 KARANDEEP

Rank 43 PRINCE KUMAR

Rank 46 NITIKA BANSAL

Rank 48 PAARINDER SINGH

Rank 50 JASPREET KAUR

Rank 51 ARSHBIR KAUR SANDHU

Rank 52 AASHIMA GARG

Rank 53 ABHINAV GARG

Rank 55 AYUSH

Rank 56 NISHA

Rank 57 PRANJAL GANGWAR

Rank 59 SURYA KARAN CHAUDHARY

Rank 63 MAYANK GUPTA

Rank 64 HARDIK SACHDEVA

Rank 65 OMESH

Rank 69 SUKHVEER KAUR

Rank 70 SHIVAM GUPTA

Rank 71 SHRADDHA SEHGAL

Rank 72 SACHIN KR. SINGH

Rank 73 SARU GOYAL

Rank 75 PRIYANK GOYAL

Rank 78 RAJAT ARORA

Rank 80 RANMEEK KAUR

Rank 81 PRANSHU JAIN

Rank 82 AYUSH GARG

VINEET KAUR SOKHI

ASHISH KR. MANDAL

PIYUSH CHAUDHARY

RAVI AMITOZ

MAMTA

VIRENDER KUMAR

ADITYA SAINI

VASUNDHARA RAO

BHUVNESH SAINI

ANURAG YADAV

PRIKSHIT

JAYANTI CHANDER

JASMINE PREET KAUR

KUNAL SONI

MANDEEP SINGH

GUJARAT JUDICIAL SERVICES RESULTS, 2022

Rank 11 MAYUR RAKESH JAIN

Rank 13 SHRUTI SHARMA

Rank 17 RAHUL SACHDEVA

Rank 21 YADVENDER P. YADAV

Rank 22 NIKHIL AGGARWAL

Rank 34 SOMYA R. Kr. Ahuja

Rank 53 PRIYABEN P. KALA

UTTAR PRADESH HIGHER JUDICIAL SERVICES RESULTS, 2022

Rank 1 MANJULA BHALOTIA

Rank 11 PRIYANKA SINGH

Rank 15 AVIJIT BHUSHAN

Rank 20 JAYENDRA KUMAR

Rank 30 MOHAMMAD ARIF

BIHAR JUDICIAL SERVICES RESULTS, 2022 - 87 SELECTIONS OUT OF 214 TOTAL SELECTIONS

Rank 1 BHAWNA NANDA

Rank 2 DIVYANSHU GUPTA

Rank 3 RAGHAV

Rank 4 SNEHA SINGH

Rank 5 PAYAL MISHRA

Rank 6 MANVENDRA SINGH

Rank 11 NAVNEET KUMAR

Rank 12 ANJALI KAPOOR

Rank 13 RIYA SINGH

Rank 14 RISHI KUMAR

Rank 15 ANOOP SINGH SHAKUN

Rank 18 SADAF MUSTAFA

Rank 19 ASHWANI KUMAR RAJ

Rank 20 PIYUSH CHAWLA

Rank 21 AISHWARYA DEEP

Rank 22 PRANJALI PRAKASH

Rank 23 KAMALDEEP KAUR

Rank 28 ABHINAV KUMAR

Rank 33 SHIVA PRATAP SINGH

Rank 35 ROHIT KUMAR TRIPATHI

Rank 39 GAURAV KUMAR

Rank 42 MANISH RANJAN

Rank 43 SHRIYA KUSHWAHA

Rank 45 WANI SHANKAR MAI

Rank 48 MOHD SUHAIL

Rank 49 PRACHI ACHARYA

Rank 54 GAURAV SINGH

Rank 55 RAKESH RANJAN

Rank 59 AGRIMA SHARMA

Rank 60 AKSHAY NARANG

Rank 64 KAMLESH KUMAR

Rank 68 ANCHAL DAHIYA

Rank 70 DIVANAND JHA

Rank 72 SANCHITA CHAUDHARY

Rank 73 SHALAKH SHARMA

Rank 75 ANUM SIDDIQUI

Rank 76 KIRAN KUMARI

Rank 79 SALONI KUMARI

Rank 82 PAPPU KUMAR

Rank 83 ALOK KUMAR

Rank 84 NISHANT RANJAN

Rank 86 AYONIJA

Rank 89 SHAIL KUMARI

Rank 92 ABHINAV KUMAR

Rank 93 DIVYESH KUMAR

Rank 99 SHUBHAM GOURI

Rank 107 NEHA

Rank 111 AADITYA ANAND

Rank 115 ANSHU KUMARI

Rank 117 HARI PRIYA

Rank 156 OM PRAKASH

Rank 163 MRINAL ARYAN

Rank 164 PALLAVI VERSHA

Rank 165 AKANSHA ANAND

Rank 179 PRIYA KUMARI

Rank 187 EVAN AISHWARYA KIRAN

Rank 189 NAVNEET NIVEDITA

Rank 218 PRADEEP KR. RAVI

Rank 223 KR. VIKRAM ADITYA

Rank 224 ANANYA

Rank 225 AJITABH

Rank 227 KUMARI SHAUMYA

Rank 228 ABHISHEK KUMAR

Rank 230 [illegible] PREETI

Rank 241 SAKSHI PRAKHAR

Rank 243 ASHISH KR. SINGH

Rank 244 ABHINAV RAJ

Rank 262 RAHUL KUMAR

Rank 272 DIKSHA

Rank 285 SALONA SABHA

Rank 297 KSHITI ANUPAM

Rank 311 SURYA SHEKHAR

Rank 328 PANKAJ KUMAR

Rank 330 VIKASH GAURAV

Rank 331 ANANT KUMAR

Rank 336 SUMIT KR. SUMAN

Rank 339 ANURAG

Rank 348 AJIT KR. SHARMA

Rank 350 NUPUR PRIYADARSHI

Rank 357 ANUSHA RAJ

Rank 364 DHARMENDRA KR. SHARMA

Rank 366 PRIYA STUTI

Rank 367 SAUMYA SUMAN

Rank 372 RATNA KUMARI

Rank 373 AMIT KR. ARYAN

Rank 382 DIWAKAR RAM

Rank 391 TULIKA SHANKAR

RAJASTHAN JUDICIAL SERVICES RESULTS, 2022

Rank 2 DEEPIKA GOLECHHA

Rank 7 DEEKSHA GUPTA

Rank 8 SANGEETA MOGA

Rank 14 SEEMA GOEL

Rank 16 MOHIT ANAND

Rank 22 SRISHTI JAIN

Rank 25 KUNAL SONI

Rank 26 SHIVANI

Rank 27 VARSHA SINGH

Rank 29 NANDINI SHARMA

Rank 37 RAVISHA SIDANA

Rank 39 AASTHA SHARMA

Rank 41 YATIN KHATANA

Rank 44 ANKIT SOLANKI

Rank 51 SHUBHAM GUPTA

Rank 60 PRIYANKA CHOUHAN

Rank 62 PALLAVI

Rank 67 KASHISH MITTA

Rank 68 AAKASH KUMAR

Rank 70 SUMJEET SINGH

Rank 75 TRILOCHANA RATHORE

Rank 85 MAYANK MEENA

Rank 87 ROHIT BENIWAL

Rank 96 KIRAN RATHEE

ANDHRA PRADESH JUDICIAL SERVICES RESULTS, 2022

Rank 4 NIKITA SENGAR

MADHYA PRADESH JUDICIAL SERVICES RESULTS, 2022

Rank 6 AKANKSHA GUPTA

Rank 8 SURABHI SETHI

Rank 9 KUNAL SONI

Rank 10 GOURI SAXENA

Rank 13 FARHAN SHAMSI

Rank 16 DEEPANNA GOLECHHA

Rank 17 MITALI VANI

Rank 18 DHRUV AGRAWAL

Rank 26 RASHMI OJHA

Rank 27 KASHISH MITTA

Rank 29 JAGYA AGRAWAL

Rank 30 PUJIT KAMAL

Rank 33 SHIVANGI SINGH

Rank 34 DEERGHA AIREN

Rank 35 TRAPTI JAIN

Rank 40 SANGEETA MOGA

Rank 50 GAVENDRA SISODIA

Rank 55 UTKARSH JAIN

Rank 57 AMBER SHRIVASTAVA

Rank 58 NISHANT BASOYA

Rank 62 RUHELA

Rank 70 KOMAL RAO

Rank 73 DEEPTI CHAUHAN

Rank 76 YASHU KHURANA

Rank 88 DIVYA SHARMA

Rank 90 NEHA SINGH

Rank 92 DHRUV JAKHAR

Rank 96 RISHAV DIXIT

NEHA BATHRI

ABHISARIKA MAHUNE

WEST BENGAL JUDICIAL SERVICES RESULTS, 2021

Rank 19 SUBRAJIT MAJUMDER

SIKKIM JUDICIAL SERVICES RESULTS, 2021

Rank 1 NAIRITYA SHARMA

ASSAM JUDICIAL SERVICES RESULTS, 2021

Rank 1 JUSMITA BORGOHAIN

GUJARAT JUDICIAL SERVICES RESULTS, 2021

Rank 8 SHAGUN DEEPAK RAJ

Rank 9 LALITA INDER SINGH

Rank 14 HARWA MEHUL DOSHI

Rank 15 ABHAY SANJAY KHANDELWAL

Rank 21 GAURAV BALDEV SIAG

Rank 23 PRASHANT ANIL SHARMA

Rank 24 PARUL RAJPAL DHANKHAR

Rank 30 KARAN PRASHANT YADAV

Rank 38 DEEPAK DUTTA

Rank 43 ASHISH KRISHNA MURARISOMAN

Rank 49 JAMEER SINGH RATHORE

Rank 52 DAMINI DIXIT

DELHI HIGHER JUDICIAL SERVICES RESULTS, 2021

Rank 1 DIVYANG THAKUR

Rank 2 SHIVALI BANSAL

Rank 4 AJAY GULATI

CHHATISGARH JUDICIAL SERVICES RESULTS, 2021

Rank 4 SHOAA MANSOOR

Rank 7 DEVENDRA KR. DIXIT

Rank 13 SOUMYA RAJ

HIMACHAL PRADESH JUDICIAL SERVICES RESULTS, 2021 [8 Selection out of 11 Total Selection]

Rank 1 NORMA JAIN

Rank 2 GEETIKA YADAV

Rank 3 SHUBHANGI JOSHI

Rank 4 MRIDULA SHARMA

Rank 6 VARUN

Rank 8 AKASH SAROHA

Rank 9 SONIA SHARMA

Rank 10 PRIYA DOGRA

TELANGANA JUDICIAL SERVICES RESULTS, 2021

CHIRAG

ANKIT SARWA

SHARDHA SEHGAL

BIHAR HIGHER JUDICIAL SERVICES RESULTS, 2021

SREESHA JADDIDI

PARMOD KUMAR

WEST BENGAL JUDICIAL SERVICES RESULTS 2021-APRIL

Rank 8 KAPIL MOHAN

DELHI JUDICIAL SERVICES RESULTS, 2020 - 41 SELECTIONS OUT OF 50 TOTAL SELECTIONS

Rank 1 YASHDEEP CHAHAL

Rank 2 KATYAYNI SHARMA

Rank 3 DEEKSHA MADAAN

Rank 4 SHAINA GOYAL

Rank 5 ANKIT GARG

Rank 6 ARCHITA GARG

Rank 7 DISHA SINGH

Rank 8 PRAVEEN KUMAR

Rank 9 RASHI RAHEJA

Rank 10 GARIMA

Rank 11 NIDHI CHITKARA

Rank 12 SHIVANGI

Rank 13 SWATI MALIK

Rank 14 ANMOL NOHRIA

Rank 16 HIMANSHI TYAGI

Rank 17 SHAZADI HALIMA

Rank 18 VAIBHAV PRATAP

Rank 19 RISHABH TANWAR

Rank 21 NEHA GOEL

Rank 22 VINEERJEET KAUR

Rank 24 HARJOT SINGH

Rank 25 TABASSUM KHAN

Rank 26 AKASH MOHAN SINGH

Rank 27 POOJA YADAV

Rank 28 SHAGUN

Rank 29 KARANBIR SINGH

Rank 30 PAYAL SINGAL

Rank 31 SHRUTI SHARMA

Rank 32 AZAD SEHRAWAT

Rank 33 AMAN SHARMA

Rank 35 MANYA

Rank 36 RAVI

Rank 37 MEENA CHAUHAN

Rank 38 VARUN CHANDRA

Rank 40 SIDDHANT KUMAR

Rank 42 KOMAL

Rank 44 MOKSHA BAINS

Rank 47 NISHAT BANGARH

Rank 48 SHEETAL RANI

Rank 49 SEEMA MEENA

Rank 50 DIVYA SINGH

CHHATISGARH JUDICIAL SERVICES RESULTS, 2020

Rank 4 SHAILESH KR. VASHISHTHA

Rank 13 AJAY SINGH MEENA

Rank 23 SIDDHARTH ANAND SONI

Rank 24 TANYA BRAHME

U.P. HIGHER JUDICIAL SERVICES RESULTS, 2020

Rank 15 DINESH KUMAR

Rank 20 SANDEEP CHAUHAN

UTTRAKHAND JUDICIAL SERVICES RESULTS, 2020

Rank 1 UDISHA SINGH

Rank 2 ADARSH TRIPATHI

Rank 5 NARANG

Rank 6 PRIYANSHI NAGARVCITI

Rank 11 NITIN SHAH

Rank 14 DEVANSH RATHORE

Rank 17 MANAL SINGH BISHT

HARYANA JUDICIAL SERVICES RESULTS, 2020

Rank 4 HARLEEN KAUR

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JHARKHAND JUDICIAL SERVICES RESULTS, 2020 - 43 SELECTIONS OUT OF 107 TOTAL SELECTIONS

PUNJAB JUDICIAL SERVICES RESULTS, 2020

DELHI HIGHER JUDICIAL SERVICES RESULTS, 2020

BIHAR JUDICIAL SERVICES RESULTS, 2019 - 113 SELECTIONS OUT OF 349 TOTAL SELECTIONS (ALMOST 1/3rd).

RAJASTHAN JUDICIAL SERVICES RESULTS, 2019 - 47 SELECTIONS OUT OF 197 TOTAL SELECTIONS (ALMOST 1/4th).

WEST BENGAL JUDICIAL SERVICES RESULTS, 2019

U.P.H. JUDICIAL SERVICES RESULTS, 2019 (DEC.)

ASSAM JUDICIAL SERVICES RESULTS, 2019 (SEPT.)

UTTARAKHAND JUDICIAL SERVICES RESULTS, 2019 - 17 SELECTIONS OUT OF 28 TOTAL SELECTIONS (60% APPROX.).

J & K JUDICIAL SERVICES RESULTS, 2019

TRIPURA JUDICIAL SERVICES RESULTS, 2019

TELANGANA JUDICIAL SERVICES RESULTS, 2019

BIHAR H. JUDICIAL SERVICES RESULTS, 2019

U.P. H. JUDICIAL SERVICES RESULTS, 2019 (JULY)

MADHYA PARADESH JUDICIAL SERVICES RESULTS, 2019 (AUG.) - 17 SELECTIONS

DELHI JUDICIAL SERVICES RESULTS, 2019 (MAY) - 95 SELECTIONS OUT OF TOTAL 126 SELECTIONS (75% APPROX).

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DELHI JUDICIAL SERVICES RESULTS, 2019 (JAN.) - 27 SELECTIONS OUT OF 32 TOTAL SELECTIONS (85% APPROX).

MADHYA PRADESH JUDICIAL SERVICES RESULTS, 2019 (JAN.) - 22 SELECTIONS.

UTTAR PRADESH JUDICIAL SERVICES RESULTS, 2019 - 227 SELECTIONS OUT OF 610 (MORE THAN 1/3rd).

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Mob. : 9811195920, 9811197581, 9811195024

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- A notice must be given before seeking consent. The notice should contain details about the personal data to be collected and the purpose of processing. Consent may be withdrawn at any point in time.

Legitimate Uses

- Consent will not be required for 'legitimate uses' including: (i) specified purpose for which data has been provided by an individual voluntarily, (ii) provision of benefit or service by the government, (iii) medical emergency, and (iv) employment.
- For individuals below 18 years of age, consent will be provided by the parent or the legal guardian.

Data Fiduciary

The Act identifies two types of data fiduciaries:

1. A **'data fiduciary'** signifies any person who, alone or in conjunction with other persons, determines the purpose and means of processing of personal data, and is similar in nature to the concept of a 'data controller' used in other legislation.
2. A **'significant data fiduciary'** is defined as any data fiduciary or class of data fiduciaries which can be selected by the Central Government based on an assessment of the factors listed under Clause 10(1) of the Act.

Data Protection Board of India

- The Central Government will establish the Data Protection Board of India.
- Key functions of the Board will include: (i) monitoring compliance and imposing penalties, (ii) directing data fiduciaries to take necessary measures in the event of a data breach, and (iii) hearing grievances made by affected persons. Board members will be appointed for two years and will be eligible for re-appointment.

Transfer of Personal Data Outside India

- It allows transfer of personal data outside India, except to countries restricted by the central government through notification.

Appeal

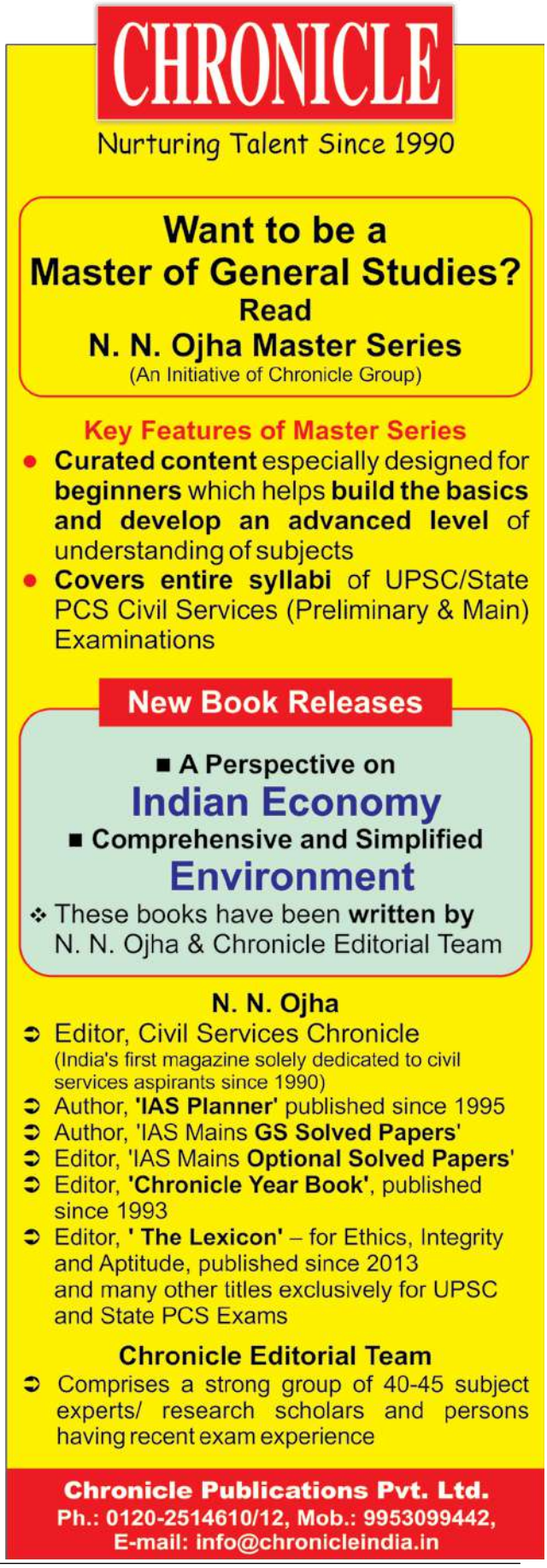
- The decisions of the board can be appealed to Telecom Dispute Settlement and Appellate Tribunal (TDSAT).

Exemptions

- Rights of the data principal and obligations of data fiduciaries (except data security) will not apply in specified cases. These include: (i) prevention and investigation of offences, and (ii) enforcement of legal rights or claims.
- The Central Government may, by notification, exempt certain activities from the application of the Act. These include: (i) processing by government entities in the interest of the security of the state and public order, and (ii) research, archiving, or statistical purposes.

Penalties

- It specifies penalties for various offences such as up to: (i) Rs 200 crore for non-fulfilment of obligations for children, and (ii) Rs 250 crore for failure to take security



measures to prevent data breaches.
- Penalties will be imposed by the Board after conducting an inquiry.

Significance

- The Act is an important step towards building a new legal architecture for digital businesses and the ushering in of India's techade.
- It is a positive step towards safeguarding data privacy, promoting transparency in data practices, and marks a milestone for India's Digital future,"

Conclusion

This legislation marks a watershed moment in data governance, as it seeks to strike a balance between individual rights to personal data protection and the legitimate need for data processing for lawful purposes and related matters. With the Act, India takes a significant step towards safeguarding personal data and empowering individuals in the digital age. By safeguarding personal information, companies will not just 'lock' away data but 'unlock' a world of trust and security.

The Act can be a game-changer in the regulation and management of digital personal data and protect its privacy and sanctity. It ushers in a new era of data protection, balancing the needs of individuals and businesses in the digital landscape.

CAG Report on AB-PMJAY

On 8th August, 2023, the Comptroller and Auditor General (CAG) of India presented the audit report on Ayushman Bharat-Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) in the Parliament.

Major Findings of the Audit

Targeted Households

- The report stated that 7.87 crore beneficiary households were registered, constituting 73% of the targeted households of 10.74 crore (as on November, 2022).
- Multiples Beneficiaries Linked to a Single Number
- Nearly 7.5 lakh beneficiaries were linked with a single cell phone number — 9999999999 in the Beneficiary Identification System (BIS) of the scheme.

Significance of Mobile Number

- Mobile numbers are significant for searching records related to any beneficiary in the database, who may approach the registration desk without the ID.
- In case of loss of e-card, identification of the beneficiary may also become difficult.
- This may result in denial of scheme benefits to eligible beneficiaries as well as denial of pre- and post-admission communication causing inconvenience to them.

Unrealistic Household Size

- Data analysis revealed that in 43,197 households, the size of the family was unrealistic, ranging from 11 to 201 members.
- Presence of such unrealistic members in a household in the BIS database indicates:
  - lack of essential validation controls in the beneficiary registration process, and
  - the possibility that beneficiaries are taking advantage of the lack of a clear definition of family in the guidelines.

Pensioners Possessing PMJAY Cards

- Many pensioners in Chandigarh, Haryana, Himachal Pradesh, Karnataka, Maharashtra and Tamil Nadu were found possessing PMJAY cards and availing treatment under the scheme.

Delayed Action in Weeding out Ineligible Beneficiaries

- Audit observed that delayed action in weeding out the ineligible beneficiaries resulted in ineligible persons availing benefits of the Scheme and excess payment of premium to the insurance companies.

Systemic Issues

- Private hospitals performing procedures reserved for public hospitals
- Hospitals with pending penalties amounting to multiple crores of rupees
- Fraudulent database errors and spending on ineligible beneficiaries
- More systemic issues such as shortages of infrastructure, equipment and doctors at empanelled hospitals, as well as cases of medical malpractice.

'Dead' Patients Treated

- The report also said that patients earlier shown as "dead" continued to avail treatment under the scheme.
- The maximum number of such cases was in Chhattisgarh, Haryana, Jharkhand, Kerala and Madhya Pradesh.
- The minimum numbers of such cases were observed in the Andaman & Nicobar Islands, Assam, Chandigarh, Manipur and Sikkim.

Central Government's Response

- While agreeing with the audit observation, National Health Authority (NHA) told CAG that the Central government has deployed BIS 2.0 in August 2022. With this issues would be resolved.

Ayushman Bharat-Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) Scheme

- Launched on 23 September, 2018, it aims to achieve Universal Health Coverage as recommended in the National Health Policy, 2017.
- The Scheme has been rolled out in rural and urban areas, based on the deprivation and occupational criteria of the Socio-Economic Caste Census, 2011 (SECC-2011) respectively, for over 10.741 crore families.
- It also aims in reduction in out-of-pocket expenditure of poor and vulnerable population.
- It is paperless and functions through an IT System. The IT system includes end-to-end information security and privacy of beneficiaries' data for beneficiaries' portability, grievance management and anti-fraud measures, etc.

Achievements

- As many as 21.9 crore beneficiaries have been verified under the Scheme including 3 crore beneficiaries verified using State IT systems as on 4th January, 2023.
- The scheme provides health cover of Rs. 5 lakh per family per year for secondary and tertiary care hospitalisation to over 10.7 crore poor and vulnerable families (approximately 50 crore beneficiaries) that form the bottom 40 per cent of the Indian population identified based on the deprivation and occupational criteria of the Socioeconomic Caste Census 2011 (SECC 2011) and other State schemes.
- Approximately 4.3 crore hospital admissions, amounting to Rs. 50,409 crore, have also been authorised under the scheme through a network of over 26,055 hospitals, highlights the Economic Survey 2022-23.
- The scheme has reduced the Out of Pocket Expenditure (OOPE) of the beneficiaries by 60 % and increased their access to tertiary care by 65 %.
- It has also improved the health-seeking behavior and satisfaction of the beneficiaries.

- Further, the BIS 2.0 system has been configured so that more than a certain number of families cannot use the same mobile number.
- This will arrest the prevalence of entering random numbers, which constitute overwhelming cases of mobile number inconsistency.
- Further, NHA is developing a Standard Operating Procedure (SOP) for adherence by the States to ensure that any SECC 2011 beneficiary family found ineligible as per AB-PMJAY criteria can be removed from the list of eligible individuals/families.

Recommendations

The audit report recommended the following measures to improve the implementation of the scheme:

Beneficiary Identification and Registration

- Ministry and States/UTs may put a suitable mechanism for identifying State-wise beneficiaries under the Scheme and to weed out ineligible beneficiaries in a time-bound manner.
- The registration process needs to be strengthened to avoid delay in registration beyond the prescribed time.
- Validation checks should be in place so as to avoid invalid entries and increase the accuracy and reliability of the data.
- NHA may ensure that State Health Agencies (SHAs) set up a designated IEC cell to promote awareness about the scheme and maximize reach, impact and awareness amongst targeted beneficiaries.

Hospital Empanelment and Management

- There is a strong need to invest in public hospitals to improve and upgrade the quality of the existing health facilities in accordance with prescribed criteria.
- National Health Authority, State Health Agency (SHA) and District Implementation Unit (DIU) may encourage more private hospitals to join under the Scheme in all the Districts in order to build an effective and accountable network of health service providers as per quality standard.

Claims Management

- Processing and payment of the claims must be done on time after ensuring necessary scrutiny by SHA.
- SHAs must ensure that claim amount is utilized by Public/Government Hospitals for improving the overall infrastructure, functioning of the hospital, quality of services and delivery of services and for incentives to staff.

Financial Management

- NHA may exercise due diligence while releasing the grant to SHAs to ensure fulfilment of corresponding State commitments, actual expenditure against past releases and also avoid idling of funds.
- Diversion of grant from one head to another should be discouraged and NHA/SHA should ensure that grant is utilized for the purpose it was released.
- Amount due from Insurance companies and interest from SHAs may be recovered at the earliest.
- NHA should ensure that every SHA in the State/UTs has opened designated escrow account into which their upfront share has been deposited in a timely manner.
- NHA must put in a mechanism to map and identify PM-JAY beneficiaries so that there is no overlap of PMJAY and state specific schemes.

Monitoring and Grievance Redressal

- SHAs should ensure that District Implementing Units are formed in every District with adequate manpower and infrastructure for smooth functioning of Scheme.

- Anti-fraud activities must be taken-up on urgent basis and defaulters should be penalized in a timely manner.
- All the required audits/checks must be conducted by concerned authorities in order to avoid mal-practices by EHCPs so that beneficiaries may get proper treatment without undue harassment.
- It must be ensured that grievances are effectively redressed and corrective measures taken for improving the working of the Scheme.

Amitabh Kant Committee Report

On 21st August, 2023, a committee headed by former NITI Aayog chief Amitabh Kant to address the issue of incomplete real estate projects, submitted its report to the Central government.

- The committee was set up in March, 2023 by the Union Housing and Urban Affairs Ministry, following a recommendation by the Central Advisory Council under the Real Estate (Regulation and Development) Act, 2016.

Issues Identified by the Committee

- According to the committee, the Indian Banks' Association has estimated that 4.12 lakh stressed dwelling units involving Rs. 4.08 lakh crore are impacted in the stalled real estate projects.
- It reported that 44% of stalled projects are in the National Capital Region and 21% in the Mumbai Metropolitan Region.
- The primary reason for stress in real estate projects is lack of financial viability which has resulted in cost overruns and delays.

Major Recommendations

- **Enforcing RERA Registration:** The committee reiterated that projects meeting specific criteria must be registered with the respective State Real Estate Regulatory Authority (RERA) for transparency.
- **De-linking Grant of Registration:** The committee suggested detaching registration or sub-lease grant from developers' dues recovery. Around 1 lakh homebuyers could benefit from this.
- **Expedited Certificate Grant:** In cases where projects are substantially complete, administrative hurdles often delay granting no-objection and completion certificates. The committee proposed streamlining this process by RERAs.
- **Rehabilitation Package:** States were advised to establish a rehabilitation package to revive stalled projects. Developers joining this package would commit to project completion within three years.
- **Model Package Example:** The committee provided a model package example for Noida and Greater Noida. It included a "Zero Period" during the pandemic, co-developer involvement, and a "partial surrender policy" for unused land.
- **Improving Internal Rate of Return:** It recommended improving the Internal Rate of Return of real estate projects which would attract more funding.
- **Judicial Interventions:** Judicial interventions such as Insolvency and Bankruptcy Code (IBC) should be used only as a last resort.
- **Subsidized Interest Rates:** There is need to formulate scheme offering subsidized interest rates for financial institutions to fund stalled projects.
- **Guarantee Fund:** It recommended the establishment of a guarantee fund similar to the MSME sector to support the finances of stalled real estate projects.
- **Suspending Interest and Penalties:** To alleviate financial stress caused by extraordinary circumstances like the COVID pandemic, the committee recommended suspending interest and penalties.
- **Alternate Options:** If a project has excess land, it recommended using it for purposes such as shopping centers to generate immediate resources for construction.
- **Central Government's Role:** The report recommended proactive financing of stalled projects through the Special Window for Affordable and Mid-Income Housing (SWAMIH) Fund.

Real Estate Sector in India

- In India, the real estate sector is the second-highest employment generator, after the agriculture sector. The sector is expected to reach US$ 1 trillion in market size by 2030, up from US$ 200 billion in 2021 and contribute 13% to the country's GDP by 2025.

Key Challenges in the Indian Real Estate Sector

- **Land Availability:** At present, there are several ongoing infrastructure projects in the country that are expected to change the dynamics of real estate in India. These include the Metro Rail in major cities and infrastructure projects such as road widening or expansion. However, acquiring land for such projects is a herculean task.
- **Affordability and Financial Volatility:** Urban housing presents exorbitant prices, making it a challenge for the

majority to afford homes in major cities due to rising construction costs driven by global commodity price increases.

- **Inefficient Project Management:** Multiple clearances from various government departments, delayed approvals from civic bodies, limited funding sources, and budget overruns due to substantial delays impede efficient project execution.
- **Lack of Transparency:** While real estate agents and projects are registered, not all are verified, highlighting gaps in authoritative action and transparency.
- **Corruption:** A nexus involving corrupt officials, builders, and local political figures undermines adherence to laws and regulations, such as land-use norms, FSI, and safety compliance.

Government Initiatives

- In the Union Budget 2023-24, the Finance Ministry has announced a commitment of Rs. 79,000 crore for **PM Awas Yojana,** which represents a 66% increase compared to the last year.
- Under Union Budget 2021-22, **tax deduction** up to Rs. 1.5 lakh on interest on housing loan, and tax holiday for affordable housing projects have been extended until the end of fiscal 2021-22.
- The **Atmanirbhar Bharat 3.0 package** announced by the Finance Minister in November 2020 included income tax relief measures for real estate developers and homebuyers for primary purchase/sale of residential units of value up to Rs. 2 crore.
- In order to revive around 1,600 stalled housing projects across top cities in the country, the Union Cabinet has approved the setting up of Rs. 25,000 crore **Alternative Investment Fund (AIF).**
- Government has created an **Affordable Housing Fund (AHF)** in the National Housing Bank (NHB) with an initial corpus of Rs. 10,000 crore using priority sector lending short fall of banks/financial institutions for micro-financing of the housing finance companies.

Way Forward

- At present, substantial land parcels are reserved by central and state government entities such as the railways, ports, and defence authorities. Unlocking land parcels is essential for affordable housing.
- The government should revise the Land Acquisition Resettlement and Rehabilitation Act 2013.
- It is equally important to make Real Estate Investment Trusts (REITs) attractive for investors by providing tax sops. It will open more channels for foreign funding in the real estate sector in India.
- The extension of Real Estate Regulatory Authority (RERA) deadlines for project completions will give the developer community a much-needed breather.
- The government should incorporate sustainable and green building practices to attract environmentally conscious buyers and investors. These designs not only resonate with modern preferences but also lead to long-term cost savings.

Conclusion

Despite government reforms, the Indian real estate market still faces challenges such as high inventory levels, sluggish demand, and liquidity issues. However, with the government's focus on affordable housing and infrastructure development, the sector is expected to continue to grow in the coming years.

It is important for developers to understand the needs and preferences of their target customers, with the increase in demand for homes in the Indian market. Offering flexible payment options like easy EMI's and low down payment options, offering quality construction, offering incentives for a better standard of living and leveraging digital technology to reach to the wider customers can further lead to an influx in demand for housing.

Preserving the Amazon Rainforest : A Call to Action

The gathering of the Amazon Cooperation Treaty Organization (ACTO), comprising eight nations, which occurred on 8th and 9th August, 2023, in Belem, Brazil, functioned as a preliminary run-through for the COP30 UN climate negotiations that the city is slated to host in 2025.

The ACTO meeting aimed to address climate change collectively and increase their influence in global climate negotiations.

At the Amazon Summit, leaders from the eight countries across the Amazon adopted the Belem Declaration.

Belem Declaration

The Belem Declaration contains 113 multidisciplinary goals and principles signed in the city of Belém, Brazil. It also:

- Acknowledges the significance of indigenous knowledge in preserving biodiversity and urges the inclusion of Indigenous Peoples in decision-making and the development of public policies to guarantee their full and meaningful participation.
- Expresses strong disapproval of the spread of protectionist trade barriers, which, as stated by the signatories, have adverse effects on impoverished farmers in developing countries and impede the promotion of Amazon products and sustainable development.
- Urges industrialized nations to fulfill their obligations to provide substantial financial support to developing countries.
- Advocates for the enhancement of law enforcement cooperation, with a commitment from authorities to exchange best practices and intelligence related to specific illicit activities.

Degradation of Amazon Rainforest: Ecological Significance

Alarming Deforestation Rates

- According to Brazil's National Institute for Space Research (INPE), deforestation of the Amazon rainforest between August 2019 and July 2021 reached 34,018 sq. km, a 52% increase compared to the previous three years.
- This sharp rise is attributed to policies during the Bolsanaro regime. Deforestation had previously decreased from 25,000 sq. km in 2004 to under 5,000 sq. km in 2012.

Amazon Rainforest's Extensive Biodiversity

- The Amazon rainforest covers approximately 6.7 million sq. km, making up 1.3% of the Earth's surface and 4.1% of its land.
- Despite its relative size, the Amazon hosts a remarkable diversity of life, including around 10% of the world's wildlife species.
- This region contains species not found anywhere else and is a critical hotspot for biodiversity.

Importance of the Amazon Ecosystem

- As the world's largest river by water volume, the Amazon River flows through several countries, primarily Brazil, Peru, Bolivia, Colombia, and others.
- The forest's role in generating rainfall and its diverse ecosystems contribute to the sustenance of Latin American agriculture and water resources.

Threats and Ecological Resilience

- When deforestation disrupts the water cycle to the extent that there's insufficient moisture for recycling and inducing rainfall, the Amazon rainforest reaches a tipping point. This leads to a scenario known as "dieback," where trees and the forest cannot sustain themselves.
- In this situation trees and the forest as a whole start to decline, with trees dying from the tips of their leaves or roots backward. This process can irreversibly shift the ecosystem and its ability to sustain itself.

Global Implications of Amazon Degradation

- The Amazon acts as a significant carbon sink, storing around 76 billion tonnes of carbon. It plays a critical role in stabilizing the world's climate by absorbing carbon dioxide and generating its own rainfall, which impacts regions beyond the Amazon itself.
- Rapid deforestation and loss of resilience not only jeopardize this ecosystem but also threaten global climate regulation and the intricate balance of Earth's ecosystems.

Conclusion

Approximately 17% of the entire Amazon rainforest and 20% of the Brazilian rainforest have been deforested. Further deforestation is unsustainable and advocate for the restoration of the rainforest's hydrological cycle. Amazon's role as a cornerstone of the global carbon cycle and climate regulation highlights the need for immediate action to prevent irreversible ecological and climatic consequences.

Polity & Governance

- Advisory Board on Banking and Financial Frauds
- National Consumer Disputes Redressal Commission
- Cauvery Water Dispute
- National Media Campaign of Department of Land Resources
- 9th CPA India Region Conference
- The Bhartiya Sakshya Bill, 2023
- The Bharatiya Nyaya Sanhita Bill, 2023
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- Supreme Court unveils Handbook to Eliminate Gender Stereotypes

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Polity & Governance

Advisory Board on Banking and Financial Frauds (ABBFF)

On 21st August, 2023, the Central Vigilance Commission (CVC) reconstituted the Advisory Board on Banking and Financial Frauds (ABBFF). The reconstituted APBFF will be chaired by Suresh N Patel, former Central Vigilance Commissioner.

- ABBFF **conducts the first level examination of bank frauds** before recommendations or references are made to investigate by agencies such as the Central Bureau of Investigation (CBI).
- It has been **empowered to examine the role of officials/ whole-time directors** (including ex-officials/ ex-whole-time directors) in public sector banks, public sector insurance companies; and public sector financial institutions in case of frauds amounting to Rs. 3 crore and above.
- It has also been empowered to **periodically carry out frauds analysis in the financial system** and give inputs, if any, for policy formulation related to the frauds, to RBI and CVC.
- The CVC or the Central Bureau of Investigation (CBI) can **also refer any case or technical matter** to the board for its advice.
- The board can also **give inputs for policy formulation** related to fraud to the Reserve Bank of India and the Central Vigilance Commission.

*Central Vigilance Commission was set up in **1964** on the recommendations of the Committee on Prevention of Corruption, headed by **K. Santhanam**. It is a **statutory body** governed by the Central Vigilance Commission Act 2003. The CVC is not controlled by any Ministry/Department. It is responsible to the Parliament.*

Its mandate is to inquire into offences alleged to have been committed under the Prevention of Corruption Act, 1988 by certain categories of public servants of the Central Government, Government Companies, societies and local authorities owned or controlled by Central Government.

National Consumer Disputes Redressal Commission

On 23rd August, 2023, the National Consumer Disputes Redressal Commission (NCDRC) dismissed an appeal filed by Cloudtail India Pvt. Ltd. challenging the order passed by the Central Consumer Protection Authority (CCPA) with regard to the violation of the rights of consumers by the company.

- NCDR is a **quasi-judicial commission** in India which was set up in 1988 under the Consumer Protection Act of 1986. Its head office is in New Delhi.
- The Commission is **headed by a sitting or a retired Judge of the Supreme Court of India** or a **sitting or a retired Chief Justice of High Court**.
- Section 21 of Consumer Protection Act, 1986 posits that the National Commission shall have **jurisdiction to entertain a complaint valued more than two crore** and also have Appellate and Revisional jurisdiction from the orders of State Commissions or the District fora as the case may be.
- **Section 23 of Consumer Protection Act, 1986,** provides that any person aggrieved by an order of NCDRC, may prefer an Appeal against such order to Supreme Court of India within a period of 30 days.

*Central Consumer Protection Authority (CCPA) is a regulatory authority set up under **Section 10(1) of the Consumer Protection Act, 2019.** It aims to protect the rights of the consumer by cracking down on unfair trade practices, and false and misleading advertisements that are detrimental to the interests of the public and consumers.*

*It has a **Chief Commissioner** as head, and **only two other commissioners as members** — one of whom will deal with matters relating to goods while the other will look into cases relating to services. The CCPA will have an **Investigation Wing** that will be headed by a Director General.*

Cauvery Water Dispute

On 14th August, 2023, the Tamil Nadu government sought the Supreme Court's intervention to make Karnataka immediately release 24,000 cubic feet per second (cusecs) from its reservoirs. Cauvery Water Dispute involves 3 States and one Union Territory:

1. Tamil Nadu
2. Kerala
3. Karnataka
4. Puducherry

- It entailed the principle that the upper riparian state must obtain consent of lower riparian state for any construction activity viz. reservoir on the river Cauvery.
- By Tamil Nadu's demand, the Union government formed the **Cauvery Water Disputes Tribunal (CWDT) in 1990** that adjudicated the dispute in 2007.
- The final verdict of the SC came in 2018 where it declared the **Cauvery a national asset**.
- The Central government notified the '**Cauvery Water Management Scheme'** in June 2018, constituting the '**Cauvery Water Management Authority'** and the '**Cauvery Water Regulation Committee'** to give effect to the decision.

HISTORY OF THE LEGAL DISPUTE

1892: Madras and Mysore states mutually entered into an agreement for equitable share of water. The 1924 agreement allowed construction of Krishnarajasagar dam by Mysore and the Mettur by Madras.

1958: Karnataka (Mysore) constructed Harangi, Kabini and Hemavathi dams in violation of 1892 and 1924 agreements. Several meetings between the governments failed.

1970: TN took up with the Centre about illegal construction of projects and sought the reference of the dispute to a tribunal under Inter-State Water Disputes Act, 1956. The following year, the state moved Supreme Court to set up a tribunal.

1973-1985: Several meetings took place between the states and the Centre, but the dispute could not be settled amicably.

1986-1990: 26 sittings took place among the states, and officers of the Centre, but no amicable settlement could be reached. The SC directs Centre to constitute Cauvery Water Disputes Tribunal in 1990.

1991: The tribunal passed interim order directing Karnataka to ensure release of 205tmcft to Mettur dam in TN.

2007: Final order given stipulating release of 192tmcft to TN during normal year, also holding the agreements of 1892 and 1984 valid and binding.

*River Cauvery is known as **'Ponni'** in Tamil. It originates from **Brahmagiri Hill** of the Western Ghats in southwestern Karnataka state, flows in a southeasterly direction through the states of Karnataka and Tamil Nadu, and descends the Eastern Ghats in a series of great falls and drains into Bay of Bengal through Pondicherry. Some of its tributaries are **Arkavathi, Hemavathi, Lakshmana Theertha, Shimsa, Kabini and Harangi.***

National Media Campaign of Department of Land Resources

On 11th August, 2023, Ministry of Rural Development launched the National Media Campaign of the Department of Land Resources (DoLR) in New Delhi. The campaign's objective is to inform the public about advancements in Land Governance and the Watershed Development Component (WDC) of **Pradhan Mantri Krishi Sinchayi Yojana (PMKSY).**

- The initial phase of the campaign will highlight the **National Generic Document Registration System (NGDRS), WDC-PMKSY, and the Cactus Project**.
- NGDRS offers a **unified software solution for land registration** across the nation, with provisions for state-specific customization.
- The national media campaign will intensify the awareness generation of the activities of the department to enhance the people's participation.

Digital India Land Record Modernisation Programme (DILRMP)** is a Central Sector scheme that has been extended to 2023-24, to complete its original targets as well as expand its ambit with a slew of new schemes. Under DILRMP, the Department is making efforts for saturation of computerization of land records and digitalization of cadastral maps for the benefit of Citizens. In terms of computerization of Record of Rights and computerization of Registration Offices, for instance, the achievement at the National level has been 94% as on 8th August 2023. Similarly, the **Digitization of maps in the country is 76%.

9th CPA India Region Conference

On 21st August, 2023, Lok Sabha Speaker inaugurated the ninth India Region Conference of the Commonwealth Parliamentary Association (CPA) in Rajasthan's Udaipur.

The CPA India Region comprises of the Lok Sabha and Rajya Sabha (the Federal Parliament of India), and the 31 State Legislative Assemblies of India.

- The theme of the Regional Conference was **'Strengthening democracy and good governance in the digital age'.**
- Hosted by the Rajasthan Legislative Assembly and the CPA Rajasthan State Branch on behalf of the CPA India Region, the Regional Conference brought together Commonwealth Parliamentarians to share their experiences of parliamentary democracy.
- In the first session, topics like digital empowerment, improving the skills of public representatives in the direction of good governance were discussed.
- The second session focused on the role of public representatives in strengthening the country through democratic institutions. Rajasthan has got the opportunity to host this conference for the first time.

*The CPA was founded as the **Empire Parliamentary Association in 1911,** with its first branches being Australia, Canada, Newfoundland, New Zealand, South Africa and the United Kingdom, the latter branch administering the Association as a whole. The aims of the CPA are to promote knowledge of the constitutional, legislative, economic, social and cultural aspects of parliamentary democracy, with particular reference to the countries of the Commonwealth of Nations.*

*It provides the means of regular consultation among Members of Commonwealth Parliaments; fosters co-operation and understanding among them; and promotes the study of and respect for Parliament. The CPA represents more than **180 Parliaments** and Legislatures in **53 Commonwealth countries.***

The Bhartiya Sakshya Bill, 2023

On 11th August, 2023, the Bhartiya Sakshya Bill, 2023 was introduced in Lok Sabha to repeal the Indian Evidence Act, 1872. The Lok Sabha passed the bill and referred it to the Parliamentary Standing Committee on Home Affairs.

- The Bill aims to consolidate and provide for general rules and principles of evidence for fair trial.
- It makes **electronic or digital records admissible as evidence**; thereby they will have the same legal effect as paper documents.
- It repeals **five existing provisions** of the Evidence Act, modifies 23 provisions, and adds one new provision.
- The bill proposes amendments to 23 Sections and contains 170 Sections in total.
- In the bill, the scope of expansion for secondary evidence to include copies made from the original by mechanical processes, counterparts of documents, and oral accounts of document contents has been done.
- It adds an explanation to provision of **joint trials**. It states that a trial of multiple persons, where an accused has absconded or has not responded to an arrest warrant, will be treated as a joint trial.

*The **Imperial Legislative Council** passed the Indian Evidence Act in 1872, which established the guidelines for admissible evidence in Indian courts. It aimed to bring together the **principles and procedures governing the admissibility of evidence** that a court might use to determine the facts of a case during trial.*

The Bharatiya Nyaya Sanhita Bill, 2023

On 11th August, 2023, the Bharatiya Nyaya Sanhita (BNS) Bill, 2023 was introduced in Lok Sabha. The Lok Sabha passed the bill and referred it to the Parliamentary Standing Committee on Home Affairs.

- The Bill aims to repeal the Indian Penal Code, 1860 (IPC).
- The bill **defines terrorism** and offences such as separatism, armed rebellion against the government, challenging the sovereignty of the country, which were earlier mentioned under different provisions of law.
- It repeals the **offense of sedition**, which was widely criticized as a colonial relic that curbed free speech and dissent.
- It proposes **10 years imprisonment** for sexual intercourse with women on false promise of marriage, which is a common form of deception and exploitation.
- Further, it introduces **community service** as a form of punishment for specific crimes, which can help in reforming offenders and reducing overcrowding in prisons.
- Notably, for the **first-time capital punishment** has been introduced for the offence of mob lynching apart from the offence being made punishable with 7 years of imprisonment or life imprisonment.
- The provision for the **offence of adultery** has also been omitted.
- The provision legalising **marital rape** has been retained.

*Indian Penal Code (IPC) was enacted aftermath the **Rebellion of 1857** which is the brainchild of **Thomas Babington Macaulay**. It was based on recommendations of the 1st Law Commission of India established in 1834 under the **Charter Act of 1833.***

The Bharatiya Nagarik Suraksha Sanhita Bill, 2023

On 11th August, 2023, the Bharatiya Nagarik Suraksha Sanhita Bill, 2023 was introduced in Lok Sabha. The Lok Sabha passed the bill and referred it to the Parliamentary Standing Committee on Home Affairs.

- The Bill aims to repeal the Code of Criminal Procedure, 1973.
- It provides that all trials, inquires, and proceedings may be held in **electronic mode.**
- **First-time offenders** will be released on bail if they have completed detention for one-third of the maximum imprisonment which can be imposed for the offence.
- **Section 41A of the CrPC will be renumbered as Section 35.** This change includes an added safeguard, stipulating that no arrest can be made without prior approval from an officer at least at the rank of Deputy Superintendent of Police (DSP), especially for offenses punishable by less than 3 years or for individuals above 60 years.
- It **empowers any police officer** to request for a medical examination of the accused in certain cases, such as cases of rape.
- The bill mandates **forensic investigation** for offences punishable with at least seven years of imprisonment.
- It **omits the provision that empowers the District Magistrate** to prohibit the carrying of arms in any procession, mass drills, or mass training with arms in public places. This provision was not notified under the Code.
- Further, the Bill provides for **conduct of trial and pronouncement of judgment** in the absence of a proclaimed offender.

*The Code of Criminal Procedure was **enacted in 1973** and **came into force on 1st April, 1974**. It provides the machinery for the investigation of crime, apprehension of suspected criminals, collection of evidence, determination of guilt or innocence of the accused person and the determination of punishment of the guilty.*

Centralized Public Grievance Redressal and Monitoring System Report

On 16th August, 2023, the Department of Administrative Reforms and Public Grievances (DARPG) released the Centralized Public Grievance Redressal and Monitoring System (CPGRAMS) 12th monthly report for States for July, 2023.

It provides a detailed analysis of types and categories of public grievances and the nature of disposal.

- The pendency of grievances of States/UTs received on CPGRAMS portal has reduced to 1,79,077 grievances across the States/UTs Governments.
- **Sikkim** tops the rankings in North East States followed by **Assam and Arunachal Pradesh.**
- Lakshadweep tops the rankings in Union Territories with followed by Andaman & Nicobar and Ladakh.
- **Uttar Pradesh** tops the ranking in states followed by **Jharkhand and Madhya Pradesh**
- DARPG has integrated the AI based language tool, **Bhashini with the CPGRAMS** portal.
- This integration would facilitate the **Grievance Redressal Officers (GROs)** to translate the regional language grievance texts into English and the complainants will have the option to view the final reply in both English and the translated native language for better communication.

*CPGRAMS is an **online platform** available to the citizens 24x7 to lodge their grievances to the public authorities on any subject related to **service delivery**. It is a **single portal** connected to all the Ministries/Departments of Government of India and States.*

*It is also **accessible to the citizens** through standalone mobile application **UMANG**. The status of the grievance filed in CPGRAMS can be tracked with the unique registration ID provided at the time of registration of the complainant.*

Motor Vehicles Rules, 1989

Recently, the Noida and Ghaziabad Police of Uttar Pradesh, issued challans to 2,300 people for putting 'caste and religious stickers' on their cars under the Motor Vehicles Rules, 1989.

- According to the Motor Vehicles Rules, "stickers and adhesive labels" in registration number plates are not permitted.
- The rules also state the specifications of the number plate. The number plate 'shall be a solid unit made of 1.0 mm aluminium' and 'should bear the letters "IND" in blue colour on the extreme left centre'.
- If the number plate is not as per the rules, which includes putting labels or stickers on it, **Section 192** of the Moto Vehicles Act (1988), has the provision of a fine of up to Rs. 5,000 for the first offence.
- In the case of stickers on the body of the vehicles, the police issue challans under **Section 179** of the MV Act 1988. The section has the provision for fines in case of 'disobedience of orders, obstruction and refusal of information.

*Motor Vehicles Amendment Act, 2019, is being implemented nationwide since **1st September 2019.** The Act increased penalties as a deterrent against traffic violations. It requires the central government to constitute a **Motor Vehicle Accident Fund**. To help road accident victims, **Good Samaritan** guidelines have been incorporated in the Act. **Taxi Aggregators** are defined under this law.*

Judiciary

Supreme Court unveils Handbook to Eliminate Gender Stereotypes

On 16th August, 2023, the Supreme Court of India took a significant stride towards promoting gender equality within its judicial proceedings through the release of a comprehensive "Handbook on Combating Gender Stereotypes."

The initiative, a **brainchild of Chief Justice of India (CJI) Dhananjaya Y Chandrachud**, lists some commonly used phrases used in the context of women and sexual crimes.

- The handbook confronts **gender biases** ingrained in legal language, fostering equitable judicial communication.
- It **equips judges and legal practitioners** to recognize and rectify gender biases pervasive in legal language.
- The handbook exposes words and phrases inadvertently propagating gender biases and advocates for their transformation.
- It **replaces terms like "career woman" with "woman"** redefines "eve teasing" as "street sexual harassment," and simplifies "forcible rape" to "rape."
- The handbook offers **alternative terms to rectify gender biases**, such as replacing 'concubine/keep' with 'woman with romantic/sexual relations outside marriage.'
- Further, the handbook **highlights the link between language**, law, and societal perceptions, emphasizing the need for unbiased legal discourse.
- This **initiative aligns with global efforts to counter gender biases** in judicial language, mirroring projects like Canada's "shadow judgments" and Indian Feminist Judgement Project.

*The Indian Feminist Judgement Project was inaugurated on the 14th May, 2018 at the Jindal Facility, New Delhi. It aims at **exploring and questioning the 'neutrality' of law's empire**. It imagines the possibilities of collaborative writing of alternate judgments for several Indian cases across a broad range of legal issues having a significant bearing on women. The project also aspires to be a blueprint for an alternate feminist future of juridical practices and critical lawyering.*

Plans/Policies

India Smart Cities Awards Contest (ISAC) 2022

On 25th August, 2023, the Ministry of Housing and Urban Affairs (MoHUA) announced the India Smart Cities Award Contest (ISAC) 2022 under the Smart Cities Mission (SCM).

The ISAC recognizes and rewards the cities, projects and innovative ideas that are promoting sustainable development across the 100 smart cities, as well as stimulating inclusive, equitable, safe, healthy and collaborative cities, thus enhancing quality of life for all.

- The ISAC has witnessed three editions in 2018, 2019 and 2020.
- **Indore** secured the prestigious national smart city award followed by **Surat** and **Agra**.
- **Madhya Pradesh** received the state award for its comprehensive approach to fostering smart city initiatives within its borders, followed by **Tamil Nadu** and **Rajasthan**.
- **Chandigarh** was honored with the UT award.
- **Coimbatore** took the top spot for built environment.
- **Amedabad** was awarded for the culture and Integrated Command and Control Centre (ICCC) category.
- **Hubbali Dharwad** was awarded for the innovative idea category and Surat for Covid innovation category.

*Smart Cities Mission launched on **25 June, 2015**, is aimed at **providing core infrastructure**, clean and sustainable environment and a decent quality of life to their citizens through the application of 'smart solutions'. Of the total proposed projects under SCM, 6,041(76%) projects worth Rs. 1,10,635 crore have been completed and the remaining 1,894 projects worth Rs. 60,095 crore will be completed by 30 June 2024. Most notable milestone achieved in the Mission has been, the **Integrated Command and Control Centers (ICCC)** which is operational in all 100 Smart Cities.*

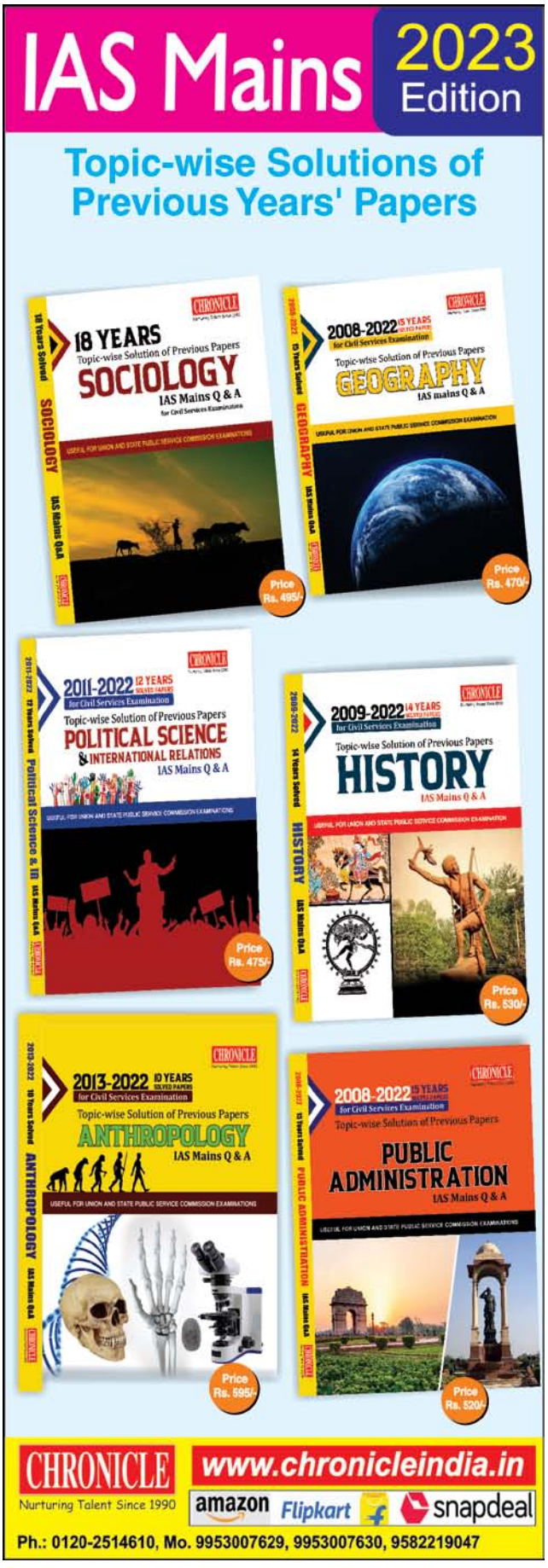
Reforms towards Digital Transformation & Customer Protection

On 17th August, 2023, the Department of Telecommunications (DoT) introduced two reforms towards digital transformation and enhancing customer protection.

The enforcement move follows the launch of the Sanchar Saathi portal in May, 2023, along with the wider roll-out of fraud detection mechanisms to identify individuals who have registered more than nine mobile connections, the maximum that is permitted.

1. KYC Reforms

- ✓ The demographic details will mandatorily be captured by scanning QR code of printed Aadhaar to prevent misuse of printed Aadhaar.



- ✓ In case of disconnection of a mobile number, it will not be allocated to any other new customer till expiry of 90 days.
- ✓ A subscriber has to undertake complete KYC for replacement of the SIM.
- ✓ Entities can take any number of mobile connections subject to complete KYC of all of its end-users.

2. Point-of-Sale (PoS) Registration Reforms

- ✓ This reform introduces the process for mandatory registration of franchisees, agents and distributors (PoS) by licensees.
- ✓ This will eliminate the rogue PoS who by fraudulent practices issue SIMs to anti-social/anti-national elements.
- ✓ The PoS registration process includes indisputable verification of PoS by licensee.
- ✓ The process mandates written agreement between the PoS and the licensees.
- ✓ If a PoS indulges in any illegal activity, it will be terminated and blacklisted for a period of 3 years.

*Sanchar Saathi portal has been developed by **C-DoT under the Department of Tele-communications (DoT)** to prevent frauds such as identity theft, forged KYC, banking frauds, etc. The portal allows mobile phone users to: check the connections registered on their names, report fraudulent or unrequired connections and block the mobile phones which are stolen / lost and check IMEI genuineness before buying a mobile phone.*

Annual Capacity Building Plan for Rural Development and Panchayati Raj Departments

On 22nd August, 2023, the Minister of Rural Development and Panchayati Raj inaugurated the Annual Capacity Building Plan (ACBP) for the Department of Rural Development, Department of Land Resources, and Ministry of Panchayati Raj in New Delhi.

- ACBP is a **strategic document** crafted to meet the competency enhancement requirements of officials within the Ministry/Department/Organization (MDO).
- It is set to play a pivotal role in the **delivery of services**, efficient program implementation, and effective governance functions within the concerned departments.
- By providing customized training to officials, the plan aims to **enhance their capabilities**, enabling better performance aligned with citizen-centric objectives.
- The Capacity Building Commission has designed the approach for developing the ACBP based on **three focal points**: 1. National Priorities, 2. Citizen Centricity, and 3. Emerging Technology.
- The plan is structured on **three pillars**—1. Individual, 2. Organizational, 3. Institutional—with the aim of contributing positively to the realization of Prime Minister's Vision for a New India by 2047.
- This process involves **Competency Need Analysis (CNA)** to identify key competencies and prioritize them based on their significance and alignment with the ministry's goals.
- Each of the three departments will establish a **Capacity Building Unit (CBU)** responsible for executing and sustaining the ACBP.
- The plan will be funded with a budgetary allocation of 2.5% of the department's salary head.

Reports

CAG's Audit Report on Regional Connectivity Scheme-UDAN

On 10th August, 2023, Comptroller and Auditor General of India (CAG) presented its report on the "Regional Connectivity Scheme UDAN (Ude Desh Ka Aam Naagrik)" in the Parliament.

- Upto UDAN-3, **52 per cent (403 out of 774 routes)** of the awarded routes could not commence operations and from the 371 commenced routes, only 112 routes (30 per cent) completed the full concession period of three years.
  - ✓ An **appropriate mechanism may be devised** to assess the feasibility of routes for achieving the sustainability of operations in the long run and for identification of unserved/underserved airports, considering the stage length, availability of alternate mode of transportation, terrain, socio economic scenario and tourism potential, etc., on the basis of experience gained so far.
- There was no exercise carried out by Ministry of Civil Aviation (MoCA) **to identify eligible heliports on the basis of its potential.** The majority of heliports identified for operations from the proposals submitted by helicopter operators, either remained un-utilised/under-utilised.
  - ✓ For identification of heliports under RCS, a **mechanism needs to be devised based on feasibility** of the operations and sustainability of the same in the long run.
- **MoCA did not frame any rules** to regulate the collection and remittance mechanism of Regional Air Connectivity Fund (RCF) levy.
  - ✓ Ministry should **devise a mechanism to monitor the RCF** levy collected by airlines.
- For **accounting of transactions of Regional Air Connectivity Fund**, Standard Operating Procedure as per laid down procedure of CAG of India was not formulated even after a lapse of more than five years.
  - ✓ Audit of Regional Air Connectivity Fund Trust accounts should be entrusted immediately to CAG of India and an **accounting methodology needs to be devised** to map the quantification of the concessions extended to airlines by various stakeholders under the scheme.

Specific Aspects of Election Process and their Reform

On 4th August, 2023, the Standing Committee on Personnel, Public Grievances, Law and Justice submitted its report on "Specific Aspects of Election Process and their Reform". It recommended changes to the **Representation of the People Act, 1951**.

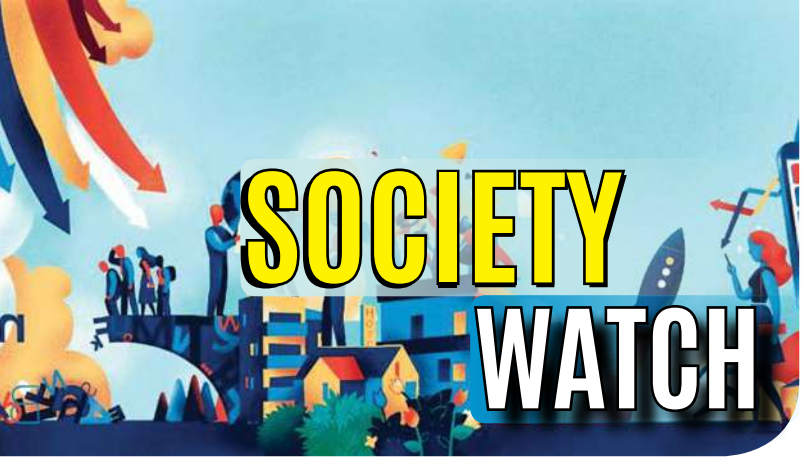
- The Committee identified three issues of the electoral process: (i) the status of Common Electoral Roll, (ii) false declarations during filing of nomination for elections, and (iii) the minimum age of voting and contesting elections.

1. **Common Electoral Roll** is intended to streamline resources, minimise efforts, and reduce expenses.
   - ✓ The Election Commission of India (ECI) should **consider the constitutional provisions** before preparing the Common Electoral Roll.
2. Central government should set up a **verification process** for affidavits to inform the ECI of any false data.
   - ✓ The punishment for a false declaration should be **increased to imprisonment** for up to two years and a fine.
3. **Reducing the minimum age** requirement for candidacy in elections would give young individuals equal opportunities to engage in democracy.
   - ✓ It emphasised that the linking of Aadhaar is voluntary and citizens should be made aware that they can **exercise their right to vote without Aadhaar linkage**.
   - ✓ ECI should establish a legal provision or an alternative mechanism to ensure that **non-citizens with Aadhaar** are not included in the Common Electoral Roll.
   - ✓ Both the ECI and the Central Government prioritise **comprehensive civic education** programs to equip the youth for political engagement.

News Snippets

Tele-Law 2.0	• Recently, the Tele-Law 2.0 initiative was launched by the Department of Justice, Ministry of Law & Justice. • This version entails the fusion of Tele-Law Services with Nyaya Bandhu pro bono legal services, a merger to further enhance citizen accessibility to legal aid. • The integration of legal guidance, support, and representation through a single registration process stands as a testament to the commitment to nurture a digitally literate and empowered populace. • Nyaya Bandhu (Pro Bono Legal Services) connects practising advocates, interested in volunteering their time and services with eligible marginalised beneficiaries.
Indian Council of Social Science Research (ICSSR)	• Recently, the ICSSR planned to develop "Indianised Research Methodology Tools" to study the country's social and economic changes. • ICSSR was established in the year of 1969 to promote research in social sciences in the country on the recommendation of Prof. V. K. R. V. Rao Committee. • It is an autonomous organisation funded by the Ministry of Education. • It provides grants for projects, fellowships, international collaboration, capacity building, surveys, publications etc., to promote research in social sciences in India.
Maritime State Development Council (MSDC)	• Recently, Ministry of Ports, Shipping and Waterways (MoPSW) embarked upon the 19th Maritime State Development Council (MSDC) at Kevadia, Gujarat. • MSDC is an apex advisory body for the development of the maritime sector and aims to ensure integrated development of Major and non-Major Ports. • It was constituted in May, 1997 to assess in consultation with State Governments, the future development of existing and new Minor Ports by the respective Maritime States either directly or through captive users and private participation.
Lokniti-CSDS	• Recently, Lokniti-CSDS has released a survey that offers insights into youth's career aspirations, job preferences, and expectations. • Lokniti is a research programme of the Centre for the Study of Developing Societies (CSDS) established in 1997. • Since its inception in 1963, the Centre for the Study of Developing Societies has been recognised as one of the leading intellectual institutions of the global south. • It houses a cluster of research initiatives that seeks to engage with national and global debates on democratic politics by initiating empirically grounded yet theoretically oriented studies.
National Space Day	• On 23rd August 2023, the Indian Space Research Organization (ISRO) reached a significant milestone by successfully landing Chandrayaan-3's lander and rover on the Moon. • Recognizing this achievement, Prime Minister proclaimed August 23rd as "National Space Day" in India. • The place where 'Vikram' lander touchdown on lunar surface is to be referred as "Shiv Shakti Point", while the crash site of Chandrayaan-2's lander in 2019 has been named as 'Tiranga'.

Central Board of Indirect Taxes and Customs (CBIC)	• Recently, the CBIC imposed a 40% customs duty on onions exported out of India as part of efforts to tame the local price of the commodity. • CBIC, formerly known as the Central Board of Excise and Customs (CBEC), is a one of the Boards constituted under the statute the Central Boards of Revenue Act, 1963 (54 of 1963) and is subordinate to the Department of Revenue under the Ministry of Finance. • It deals mainly with the tasks of formulation and implementation of policy concerning to the levy and collection of Customs duties, Central Excise duties and Goods & Services tax, prevention of smuggling and administration of matters relating to Customs, Central Excise, Central Goods and Service Tax (CGST) and Narcotics to the extent under CBIC's purview. • It is headed by a Chairman and has 6 members in addition to the Chairman.
National Judicial Data Grid (NJDG)	• Launched in 2015, it is a part of the e-Courts Integrated Mission Mode Project. • It aims to track judicial performance across different courts in the country. • It also serves as a decision support system to the management authorities like Supreme Court and respective High Courts, to monitor pendency on varied attributes for effective decision-making. • Through the eCourts services platform using elastic search technology, currently litigants can access case status information in respect of over 23.58 crore cases and more than 22.56 crore orders / judgments pertaining to these computerized courts as on date. • Case data is available on NJDG for both civil and criminal cases with the ability to perform drill-down analysis based on the age of the case as well as the State and District.
Central Board of Direct Taxes (CBDT)	• Recently, the CBDT has notified a reduction in the valuation of rent-free accommodation to staff provided by employers. • CBDT is a statutory authority functioning under the Central Board of Revenue Act, 1963. • It is a part of the Department of Revenue in the Ministry of Finance. • Its functions include formulation of policies, dealing with matters relating to levy and collection of direct taxes, and supervision of the functioning of the entire Income Tax Department. • It also proposes legislative changes in direct tax enactments and changes in rates and structure of taxation in tune with the policies of the Government. • It is headed by Chairman and also comprises of six members, all of whom are ex-officio Special Secretary to the Government of India.
PUShP Portal	• Recently, the National Power Committee (NPC) has asked States to provide suggestions for offering incentives to buyers and sellers on the surplus power portal PUShp. • PUShP portal is a High Price Day Ahead Market (HP-DAM) and Surplus Power Portal (PUShP) launched by the Ministry of Power. • It was launched to ensure greater availability of power during the peak demand season at a price higher than the ceiling of Rs 12 per unit by certain category of sellers. • The power distribution companies (DISCOMs) will be able to indicate their surplus power in block times / days / months on portal. • Those DISCOMs who need power will be able to requisition the surplus power.
Khelo India Centres	• Recently, Union Minister of Youth Affairs and Sports inaugurated 33 Khelo India centres in Rajasthan. • Khelo India is a programme that aims to improve India's sports culture at the grass-root level through talent identification, structured sporting competitions and infrastructure development. • The Ministry has established State level Khelo India Centres which conduct annual sports meet, and promote rural and tribal sports. • Each State level Khelo India Centres caters to three sporting disciplines. • The total number of KIC notified across India is 960, out of which 715 are operational.
Gun Jumping	• Recently, the Competition Commission of India (CCI) imposed a penalty on Platinum Trust for 'Gun Jumping'. • 'Gun Jumping' essentially means acting before the appropriate time and refers to situations where a party or parties to a combination (M&A deal) consummate a transaction before CCI approves the transaction, thereby violating standstill obligations. • 'Gun Jumping' in competition jurisprudence occurs when parties to mergers and acquisitions consummate the transaction without keeping the competition authorities informed. • The Competition Commission of India (CCI) has the power to penalise parties for 'Gun Jumping' under Section 43A of the Competition Act, 2002. • The penalty can be as high as 1 per cent of the total turnover or 1 per cent of the assets, whichever is higher, of the combination.



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Indian Society

Supreme Court Judgment on Inheritance

On 1st September, 2023, the Supreme Court (SC) held that a child born of a void or voidable marriage can inherit the parent's share in a joint Hindu family property governed by the Mitakshara law.

The verdict was passed on a **petition challenging the 2011 judgment** of a two-Judge Bench in Revanasiddappa vs. Mallikarjun case, which held that children born out of void/ voidable marriages were entitled to inherit their parents' properties, whether self-acquired or ancestral.

- The top court held that the children from such 'void or voidable' marriages **will not be able to inherit** the ancestral properties of the coparceners other than their parents under the Hindu law.
- **Section 16 of the Hindu Marriage Act, 1955** has statutorily conferred legitimacy to children born out of void or voidable marriages.
- In fact, Chief Justice of India pointed out that **Section 16(3)** stipulates that children from void and voidable marriages would have a right to their parents' property.
- The court also noted that after the enactment of the **Hindu Succession (Amendment) Act, 2005**, the share of a deceased person in a joint Hindu family governed by **Mitakashara law** can be devolved to his heirs by testamentary or intestate succession.
- Further, the SC made clear that a child born from a void or voidable marriage (under **section 11 and section 12 of the Hindu Marriage Act, 1955,** respectively) does not ispo facto become a coparcener (meaning joint heir in Hindu law) in the Hindu Mitakshara joint family.

*A **voidable marriage** is a marriage that is initially valid but has certain defects or conditions that can lead to its annulment if one of the parties chooses to do so. A **void marriage** is one that is considered invalid from the very beginning as if it never existed in the eyes of the law.*

*The **Mitakshara school of Hindu law** codified as the **Hindu Succession Act, 1956** governed succession and inheritance of property but only recognised males as legal heirs. The law applied to everyone who is not a Muslim, Christian, Parsi or Jew by religion. Mitakashara law of succession governing Hindu Undivided Families **applies to the whole of India except West Bengal and Assam.***

Self-respect Marriages

On 28th August, 2023, the Supreme Court (SC) observed that there is no blanket ban on advocates solemnising "self-respect" marriages under Section 7(A) of the Hindu Marriage Act, 1955.

The SC set aside a **2014 ruling of the Madras High Court** holding that marriages performed by the advocates are not valid and that self-respect marriages cannot be solemnised in secrecy.

- In 1968, the **Hindu Marriage (Tamil Nadu Amendment) Act, 1967**, received the President's approval and became the law.
- This amendment modified the Hindu Marriage Act by **inserting Section 7(A)** into it. However, it **extended only to the state of Tamil Nadu.**
- **Section 7(A) deals with the special provision on "self-respect and secular marriages"**.
- It legally recognised "any marriage between any two Hindus", which can be referred to as **"Suyamariyathai" or "Seerthiruththa marriage**" or by any other name.
- Such marriages are **solemnized in the presence of relatives**, friends, or other persons, with parties declaring

each other to be husband or wife, in a language understood by them. However, such marriages are also required to be registered as per the law.
- The rationale behind "self-respect" marriages was **to radically simplify weddings by shunning the need for mandatory Brahmin priests**, holy fire and saptapadi (seven steps).
- The top court relied on its 2001 ruling in "Nagalingam vs. Sivagami", which said that there is no blanket ban on advocates to solemnise marriages under Section 7(A) of the Hindu Marriage Act (Tamil Nadu State Amendment Act).

*In 1925, Tamil social reformer **Erode Venkatappa Ramasamy (Periyar)** spearheaded the self-respect movement — one that sought equal rights for people of all castes and encouraged people from marginalized castes to live with dignity and self-respect. Self-respect marriages were **conceptualized as part of the larger self-respect movement.** The **first self-respect marriage took place in 1928, and was officiated by Periyar himself.** These weddings rejected Brahminical scriptures and texts and also did away with having a Brahmin priest as the officiator.*

Social Justice

Justice Gita Mittal Committee

On 21st August, 2023, Supreme Court-appointed committee under Justice Gita Mittal submitted three reports to the Supreme Court. The Committee was constituted on 7th August, 2023 by the Supreme Court to oversee relief and rehabilitation of the victims of ethnic violence in Manipur.
- **The First report** highlights the loss of essential documentation of the residents of Manipur who have been dishoused.
  - The committee suggests the appointment of a nodal officer to take charge of the reconstruction of these documents.
- **The Second report** raised concerns on the Manipur Victim Compensation Scheme (MVCS).
  - The committee says the MVCS needs to be substantially improved.
  - The MVCS should be in the same league as the schemes framed by the National Legal Services Authority (NLSA).
- **The Third report** proposed for appointment of domain experts to facilitate its work.
- Supreme Court's Procedural Directions
- On 26th August, 2023, the Supreme Court transferred the Manipur violence cases being probed by the Central Bureau of Investigation (CBI) to Assam and asked the Gauhati High Court's Chief Justice to nominate judges for the trials.
- All applications for the production of the accused, remand, judicial custody, extension of custody, and other proceedings in connection with the investigations are allowed to be conducted on the online mode, bearing in mind both distance and security issues at the designated courts.
- While the cases will be tried in Assam, the SC said judicial custody of the accused, if and when granted, will be done in Manipur to obviate transit.
- Moreover, the statements of witnesses can be recorded in Manipur and the High Court Chief Justice would appoint magistrates for the purpose.

***Manipur Victim Compensation Scheme, 2019** aims at providing financial assistance to the victim, support services such as shelter, counselling, medical aid, legal assistance, education and vocational training depending upon the needs of the victims.*

Social Issues

Legal Provisions Related to Abortion in India

On 21st August, 2023, the Supreme Court allowed a rape survivor to undergo medical termination of her over 27-week pregnancy, citing that pregnancy outside marriage is injurious and a cause of stress.

Under the **Medical Termination of Pregnancy (MTP) Amendment Act, 2021**, the upper limit for termination of pregnancy is 24 weeks.
- The **Shantilal Shah Committee** was set up in the mid-1960s to investigate the need for abortion regulations.
- Based on its findings, the **Medical Termination of Pregnancy (MTP) Act, 1971** was enacted, allowing safe and legal abortions, safeguarding women's health, and reducing maternal mortality.
- The **MTP Act, 1971, allows abortion up to 20 weeks of gestation**, with the consent of the woman and on the advice of one registered medical practitioner (RMP).

The MTP Act 1971 and The MTP Act Amendments 2021

	MTP Act 1971	The MTP Amendment Act 2021
Indications (Contraceptive failure)	Only applies to married women	Unmarried women are also covered
Gestational Age Limit	20 weeks for all indications	24 weeks for rape survivors Beyond 24 weeks for substantial fetal abnormalities
Medical practitioner opinions required before termination	One RMP till 12 weeks Two RMPs till 20 weeks	One RMP till 20 weeks Two RMPs 20-24 weeks Medical Board approval after 24 weeks
Breach of the woman's confidentiality	Fine up to Rs 1000	Fine and/or Imprisonment of 1 year

- The **2021 amendment permits abortion from 20 to 24 weeks of gestation** for specific cases like rape survivors, with approval from two doctors.
- It sets up **state level Medical Boards** to decide if a pregnancy may be terminated after 24 weeks in cases of substantial fetal abnormalities.
- It **extends the failure of contraceptive clauses** to unmarried women (initially only married women), allowing them to seek abortion services on grounds of their choice, irrespective of their marital status.

*In **Justice K.S. Puttaswamy vs. the Union of India and Others (2017**), the Supreme Court recognized the **constitutional rights of women to make reproductive choices**, as a part of personal liberty **under Article 21** of the Indian Constitution, which, despite laying a robust jurisprudence on reproductive rights and the privacy of a woman, does not translate into a fundamental shift in power from the doctor to the woman seeking an abortion.*

Nikah Halala and Nikah Mut'ah

On 25th August, 2023, the Law Commission of India asked the All India Muslim Personal Law Board (AIMPLB) to unambiguously state its position on 'Nikah Halala' and 'Muta'.

The Commission has also sought **clarification on Islamic law** regarding the minimum age for marriage.

- The expression "**Nikah Halala**" literally means a marriage to make something halal or permissible.
- As per Muslim Law, a man cannot remarry his wife after he divorced her, unless the wife is married to another man and gets divorced from that man (second husband) or after the death of the second husband.
- Thus, the process of making the woman permissible for her first husband by giving her marriage to a third person with a pre-condition is known as 'Nikah Halala' also known as 'Tahleel' marriage.
- In this process, the third person consummates the marriage with the object to make the woman permissible for her first husband.
- The literal meaning of word 'Mutah' is 'enjoyment'.
- **'Nikah Mut'ah'** is a kind of marriage among the Muslims recognized only by Ithna Asharia Shias.
- In general sense, it can be defined as a temporary union of male and female for a specific time period after payment of certain consideration.
- Therefore, 'Mutah' marriage may also be regarded as marriage for the purpose of pleasure.

***Muslim Women (Protection of Rights on Marriage) Act, 2019** makes all declarations of instant triple talaq, including in written or electronic form, to be void (i.e. not enforceable in law) and illegal. The Act provides that the **Magistrate may grant bail** to the accused. The offence may be **compounded by the Magistrate** upon the request of the woman. A Muslim woman against whom talaq has been declared is **entitled to seek subsistence allowance** from her husband for herself and for her dependent children. The amount of the allowance will be determined by the Magistrate.*

Plans/Policies

PM Vishwakarma Scheme

On 16th August, 2023, the Cabinet Committee on Economic Affairs approved a new Central Sector Scheme "PM Vishwakarma" with a financial outlay of Rs.13,000 crore for a period of five years (FY 2023-24 to FY 2027-28).

The main objective of this scheme is to improve the status of the craftsmen in the country.

- The Scheme includes 18 traditional trades. The first category of 'PM Vishwakarma' workers includes carpenters, boat builders, blacksmiths, locksmiths, goldsmiths, potters, sculptors, cobblers, and masons.
- The artisans and craftspeople will be provided recognition through PM Vishwakarma **certificate and ID card**, Credit Support upto Rs.1 lakh (First Tranche) and Rs.2 lakh (Second Tranche) with a concessional interest rate of 5%.
- It will further provide **skill upgradation,** toolkit incentive, incentive for digital transactions and marketing support.
- There will be **two types of skilling programmes** — basic and advanced.
- A stipend of Rs.500 per day will also be provided to beneficiaries while undergoing skill training. They will also get a support of up to Rs.15,000 to buy modern tools.

- The scheme will help improving the quality, as well as the reach of products and services of artisans and craftspeople and to ensure that the 'Vishwakarmas' are integrated with the **domestic and global value chains**.
- Further, it will contribute to India's growth story.

Mizoram Becomes First State to Launch ABDM Microsite in India

On 23rd August, 2023, Mizoram became the first state in India to operationalize an ABDM Microsite in its capital city Aizawl.

The National Health Authority (NHA) had announced **100 Microsites** project for accelerated adoption of Ayushman Bharat Digital Mission (ABDM) across the country.

- The ABDM Microsites are **focused geographical** region comprising all small-medium private facilities like clinics, hospitals, labs, etc. in the region.
- The goal of these sites is **to include local health facilities in the ABDM ecosystem** and digitise the healthcare providers for clinical documentation.
- Under this, all healthcare facilities **including the private clinics, small hospitals and labs** in the region shall be made ABDM-enabled and will offer digital health services to the patients.
- **Patients will be able to link the health records** generated at these facilities with their Ayushman Bharat Health Accounts (ABHAs) and will be able to view and share these records using any ABDM-enabled Personal Health Record (PHR) application on their phones.
- These Microsites would be majorly implemented by **State Mission Directors** of ABDM while the financial resources and overall guidance would be provided by **NHA**.
- **Two Categories of a Microsite:**
  1. **Category A:** A microsite which consists of at least 1000 facilities, inclusive of all types of health facilities.
  2. **Category B**: A microsite that consists of at least 500 facilities but less than 1000 facilities.

*Launched in **2021**, Ayushman Bharat Digital Mission (ABDM) aims to develop the backbone necessary to **support the integrated digital health infrastructure** of the country. ABDM's broad vision is **universal health coverage**. Under ABDM, every citizen can get a **digital health ID** and the health records would be digitally protected. The National Health Authority (NHA) under the Ministry of Health and Family Welfare is the implementing agency of the mission*

Intensified Mission Indradhanush (IMI) 5.0

On 7th August, 2023, the Central Government decided for nationwide implementation of 'Intensified Mission Indradhanush (IMI) 5.0'. It aims to cover children aged between 0-5 who have missed vaccines in the national immunisation schedule.

- IMI 5.0 campaign will be conducted in **three phases** (August 7 to 12, September 11 to 16 and October 9 to 14, 2023) in the states.
- The main objective of this campaign is to **eliminate Measles and Rubella** by the end of this year.
- As per Health Management Information System (HMIS) 2022-23, 6 **States/UTs have achieved 100% full immunization Coverage (FIC)** whereas 17 States have achieved FIC of more than 90%.
- Previously, the government launched **IMI 4.0 in February 2022** to ensure that Routine Immunization (RI) services reach unvaccinated and partially vaccinated children and pregnant women.

*Launched in **October 2008**, Health Management Information System (HMIS) is a **Government to Government (G2G)** web-based Monitoring Information System to monitor the National Health Mission and other Health programmes and provide key inputs for policy formulation and appropriate programme interventions.*

*HMIS **captures facility-wise information** as follows: Service Delivery (Reproductive, Maternal and Child Health related, Immunisation, family planning, Vector borne disease, Tuberculosis, Morbidity and Mortality, OPD, IPD Services, Surgeries, etc.) data on a monthly basis.*

Project AMBER

Recently, the Ministry of Skill Development and Entrepreneurship (MSDE), in collaboration with Generation India Foundation (GIF) and Amazon Web Services India Private Limited (AWS India), is providing 'cloud' skills training to 1,500 under project AMBER.

- The Accelerated Mission for Better Employment and Retention (AMBER) project is a joint initiative of the **National Skill Development Corporation (NSDC)** – under the aegis of the **Ministry of Skill Development and Entrepreneurship (MSDE)** - and GIF to create the necessary avenues.
- The initiative has been undertaken under the **SANKALP programme of MSDE** with a focus on women to improve gender diversification in the tech industry and underprivileged groups.
- It **aims to train 30,000 youth**, 50% of whom will be women.
- As part of this collaboration, the learners take part in AWS (re/Start), a workforce development program for unemployed and underemployed individuals.
- It covers fundamental AWS cloud skills as well as practical career tips, including resume writing and interview preparation.
- It will bring **entry-level talent into the workforce** and help individuals to launch successful cloud careers, organisations to increase their competitive edge with in-demand talent, and communities.

*The Skills Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) programme was **launched in 2018**. It is a **World Bank loan-assisted project** and is aligned with the overall objectives of the National Skill Development Mission (NSDM).The project **focuses on transforming the overall skilling ecosystem of India**, covering both central and state-level agencies for improved outcomes.*

Interventions under SANKALP are categorized as follows:

National Curriculum Framework

On 23rd August, 2023, Ministry of Education released National Curriculum Framework for School Education (NCF-SE), marking an important and transformative step towards the implementation of National Education Policy.

- The NCF-SE has been drafted by the national steering committee headed by former Chairman of the Indian Space Research Organisation (ISRO) **K. Kasturirangan**.
- It follows the lead of the **National Education Policy (NEP) 2020**.
- It formulates **new textbooks from Grades 3 to 12** under the Central Board of Secondary Education (CBSE).
- Students in Classes 9 and 10 will need to learn three languages, of which at least two will be native to India.
- In Classes 11 and 12, students will learn two languages, including one of Indian origin.
- The students from Classes 9 to 12 study five mandatory subjects, with an option of adding one more subject.
- Now, students of 9th and 10th classes will have to take 7 mandatory subjects while students of class 11th and 12th will study 6 mandatory subjects.
- The textbooks for classes 3-12 are to be aligned with 21st-century requirements, making them rooted and futuristic.
- It is emphasised across all stages of schooling, culminating a separate area of study in the Secondary Stage.
- It will help in learning about the challenges of climate change, biodiversity loss, and pollution, and the criticality of environmental awareness and sustainability in today's world.

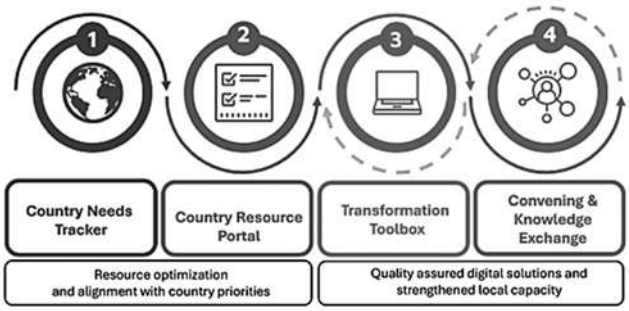
*Launched in July, 2020, the National Education Policy of India 2020 (NEP 2020) outlines the **vision of the new education system of India**. It replaces the previous National Policy on Education, 1986. The vision of the policy is **to build an education system rooted in Indian ethos** that contributes directly to transforming India by providing high-quality education to all, thereby making India a **global knowledge superpower**.*

Global Initiative on Digital Health (GIDH)

On 19th August, 2023, the World Health Organization (WHO) and the G20 India presidency announced a new Global Initiative on Digital Health (GIDH) at the Health Minister's Meeting of the G20 Summit.

The GIDH will be a **WHO Managed Network** ("Network of Networks") that will promote equitable access to digital health by addressing challenges such as duplication of efforts and "products-focused" digital health transformation.

- It **aims** to :
  - **ALIGN** efforts to support the Global Strategy on Digital Health 2020–2025;
  - **SUPPORT** quality assured technical assistance to develop and strengthen standards-based and interoperable systems aligned to global best practices, norms and standards;
  - **FACILITATE** the deliberate use of quality assured digital transformation tools that enable governments to manage their digital health transformation journey.
- **WHO serves as the Secretariat** for the strategy implementation to converge and convene global standards, best practices and resources to fast track digital health system transformation.
- **Strategies to be employed by GIDH:**
  - developing clear priority-driven investment plans for digital health transformation;
  - improving reporting and transparency of digital health resources;
  - facilitating knowledge exchange and collaboration across regions and countries to accelerate progress;
  - increasing technical and financial support to the implementation of the Global Strategy on Digital Health 2020–2025 and its next phase.
- The GIDH will **promote equitable access to digital health** by addressing challenges such as duplication of efforts and "products-focused" digital health transformation.



*Digital health is a proven accelerator to advance health outcomes towards achieving Universal Health Coverage and the health-related **Sustainable Development Goals by 2030 (Goal 3)**. Digital health interventions improve health care in many ways, from supporting individuals in managing their health and wellness journeys, to enabling care provid-*

ers to adhere to guidelines and provide high quality care, to strengthening health systems by improving supply chains and workforce management.

Nutritional Supplementation Reduces Tuberculosis Incidence

Recently, a ground-breaking trial conducted in India underscores the vital role of nutritional supplementation in significantly reducing tuberculosis (TB) incidence among household contacts of TB patients and improving mortality outcomes for those diagnosed with active pulmonary TB.

- The study, conducted over a three-year period in Jharkhand, offers promising insights into addressing the interplay between nutrition and TB, with potential implications for public health strategies.
- **Jharkhand** was selected due to its high TB burden and multidimensional poverty levels.
- The Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial showed that improved nutrition among contacts of **infectious lung TB patients** resulted in a 40% reduction in all forms of TB incidence and nearly 50% reduction in infectious TB.
- Early weight gain during the initial two months of TB treatment reduced the **risk of mortality** by 60% for underweight patients.
- A total of 5,621 participants received nutrient-dense food for a year, leading to a 39% reduction in TB incidence compared to the control group.
- Another study followed 2,800 TB patients over six months, revealing that weight gain during nutritional treatment was linked to a significant reduction in mortality risk, particularly in the initial two months.
- The **Ni-kshay Mitra program** allows volunteers to provide monthly nutrition kits to adopted TB patients.
- In 2021, **India recorded three million new TB cases** and 4,94,000 deaths, constituting a substantial portion of global TB incidence and mortality.
- The studies highlight under-nutrition as a leading global risk factor for TB, with simple dietary interventions proving effective in reducing TB incidence.

*India is striving to **eliminate TB by 2025**, and these findings hold implications for policy implementation. The national TB program provides Rs. 500 monthly nutritional support to diagnosed TB patients through direct benefit transfer.*

Reports

Mental Health Care and its Management in Contemporary Times

Recently, the Standing Committee on Health and Family Welfare submitted its report on 'Mental Health Care and its Management in Contemporary Times' in the Parliament.

- The Committee highlighted the **adverse impact of the COVID-19 pandemic** on the psycho-social wellbeing of all groups, especially children, adolescents, and caregivers.
- It noted the need for evidence-based intervention on developing infrastructure and other policies around mental health.
- It recommended that the **second round of the Survey on mental health be published expeditiously**, to assess and address increased mental health risks caused by the pandemic.
- It highlighted the prevalence of **mental health disorders amongst children and adolescents** in India, especially in urban metros.
- It noted the **impact of socio-economic inequalities**, violence and lack of access to essential services on mental illness amongst the youth.
- It recommended **imparting mental health education** and providing counselling to address this issue.
- Also, the second round of the Survey on mental health must **include provisions generating data on children, adolescents**, and caregivers to understand specific trends.
- India **currently has 0.75 psychiatrists per lakh people**, which is significantly low**.**
- The Committee observed that if India targets having three psychiatrists per lakh people, it will need 27,000 more psychiatrists.
- It suggested **increasing the seats for MD** Psychiatry courses.
- The Committee acknowledged existing efforts of the Ministry and the further need to **strengthen primary and secondary mental health services**.
- It recommended **allying community based care** with bio-medical care to address mental health concerns.
- The Committee observed that several states are **yet to fill crucial vacancies** in their Mental Health Authorities and constitute the Mental Health Review Boards (MHRBs).
- Appointment of officers and other staff, development of mechanisms for complaints redress and **establishment of State Mental Health Authority funds** need further push in most of the states.

Miscellaneous

Hmar Community

Recently, **Hmar Inpui**, the apex tribal body of the Hmar community, asked the Centre to expedite the processes of resolving the demands of the tribal communities in the form of separate administration for the Kuki/Hmar/Zomi.

- Hmar tribe, also called Mhar or Mar, are the dwellers of the North Eastern Part of India.
- They inhibit the northeastern states of **Manipur, Assam, Mizoram, Meghalaya** and **Tripura.**

- They belong to the **Chin-Kuki-Mizo group of tribes** and are recognised as Scheduled Tribe under the Constitution of India.
- Hmar Tribes claim their **origin from the Singlung**, which is located in central or south-west China.
- The Hmar society is based on **clan system**.
- Each clan had a dialect of its own, though nowadays a common dialect used by the Hmar People was developed by Christian missionaries.
- The **chief of the village council is called "Lal"**. Everybody follows his leadership and directive.
- The society is **patrilineal and patriarchal** in nature.

The Hmar tribes depend on **forest products**. Shifting cultivation is the main and traditional occupation and blacksmith, carpentry, poultry, basketry, priesthood, herbal medicine are subsidiary occupation.

News Snippets

Lakhpati Didi Scheme	• Recently, the Union government launched the 'Lakhpati Didi' scheme. • It aims to encourage women to start their own micro-enterprises. • Under this scheme, skill development training will be provided to two crore women. • Lakhpati Didi scheme has already been in place in some states. • 15,000 women's SHGs would be given loan and training under this scheme. • Women would be trained in skills like plumbing, LED bulb making and operating and repairing drones among others. • The government will provide drones to women Self-Help Groups (SHGs) and initiate making drone services available for the agricultural work.
Direct Incentive Disbursement	• Recently, Postal Life Insurance (PLI) introduced a pilot program for Direct Incentive Disbursement as an enhancement to its agent incentive program. • With this feature, agents can seamlessly transfer their hard-earned commissions from the previous month directly to their Post Office Savings Bank (POSB) Accounts. • The PLI aims to solidify its bond with the agents and inspire a culture of excellence by modernising the way incentives are distributed. • It will impact around two lakh sales force members across the nation, including Gramin Dak Sevaks, Direct Agents, Field Officers, and Departmental Employees. • This streamlined process eradicates delays and the need for physical checks with secure and instantaneous fund transfers.
Pradhan Mantri Uchchatar Shiksha Abhiyan	• Recently, 14 States and Union Territories which are yet to sign a crucial Memorandum of Understanding (MoU) with the Union Education Ministry, which mandates the implementation of the Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA) . • PM-USHA covers government and government-aided institutions of the States and UTs. • It focuses on the following: Equity, Access, and Inclusion, Developing Quality Teaching & Learning processes, Accreditation of Non-Accredited Institutions & Improving Accreditation, ICT-based Digital Infrastructure, Enhancing Employability through Multidisciplinarity.
Preeclampsia	• A recent study revealed that a liquid-biopsy approach that measures DNA-methylation levels in the blood may improve the detection of pregnancies at risk of developing preeclampsia at early stages. • It is a serious blood pressure condition that develops during pregnancy. • It typically develops after the 20th week of pregnancy. • It can also affect other organs in the body and be dangerous for both the mother and her developing fetus. • People with preeclampsia often have high blood pressure (hypertension) and high levels of protein in their urine (proteinuria). • The best clinical evidence for the prevention of preeclampsia is the use of low-dose aspirin.
Study In India (SII) Portal	• Recently, the Ministry of Education launched the 'Study In India (SII)' portal to offer a one-stop solution for student registrations and visa applications, in line with vision of establishing India as a global education hub. • This is a one-stop platform that will simplify international students' academic journey in India. • It is a dedicated website that will provide comprehensive information about the Indian Higher Education Institutions (HEIs). • The portal will provide comprehensive information about: Indian higher education institutions, academic facilities, research support, and related information. • The portal is guided by the National Education Policy (NEP) 2020.

Art & Culture

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Plans/Policies

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- Kashi Culture Pathway
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Personality

- President Hailed Women Freedom Fighters

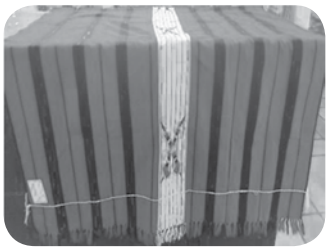
India's Cultural Gifts to BRICS Leaders

Recently, during the 15th BRICS summit hosted by South Africa in Johannesburg, Indian Prime Minister presented special gifts to the organization's leaders from different parts of India.

Bidari Surahi

- Indian PM gifted Bidri a pair of 'Surahi' to South African President Cyril Ramaphosa.
- Bidriware is a metal handicraft from the city of Bidar in Karnataka. It was developed in the 14th century C.E. during the rule of the **Bahmani Sultans**.
- The term "bidriware" originates from the township of Bidar, which is still the chief center of production.
- Cast from an alloy of **zinc, copper, and other non-ferrous metals**, they feature elegant patterns intricately engraved and inlaid with pure silver wire.
- The distinctive black hue, achieved by soaking the castings in a unique solution mixed with soil from Bidar Fort, contrasts strikingly with the silver inlay, creating a visually captivating effect.
- Bidri metal work, classified into four types – Teh nashin, Aftabi, Tarkashi, Zar buland – often draws inspiration from nature, folklore, and geometric patterns.
- This native art form has obtained Geographical Indications (GI) registry on 03/01/2006.

Nagaland Shawl



- It was gifted to Dr. Tshepo Motsepe, the First Lady of South Africa.
- Woven by **Naga tribes**, these shawls are renowned for their vibrant colours, intricate designs, and the use of traditional weaving techniques passed down through generations.
- Naga shawl are made with **narrow loin looms**. The shawls are woven with a rayon weft and weaving is done mostly with cotton.
- The shawl is beautified with figures woven on the centre such as elephants, tigers, cocks and circles, representing human heads.
- Naga Shawls are mostly made of **red and black wool.** These shawls are famous for their unique designs and motifs.
- They have distinctive patterns with traditional design motifs including simple clean lines, stripes, squares and bands.

Gond Painting

- It was gifted to the Brazilian President Lula da Silva.
- Gond Painting is a famous folk art of the **Gond tribal community** of Central India.
- It is done to preserve and communicate the culture of the Gond tribal community.
- Gond tribes are **highly interlinked with nature**, and this appears in their paintings too.
- They include animals, the mahua tree, mythological stories, Hindu gods, local deities and folktales, etc.
- The artist uses his distinctive pattern and style to fill the images. These style signatures are used in collages to make a complete picture, such as **dots, fine lines, curved lines, dashes, fish scales, etc.**

Chikri Wood Craft from J&K receives GI Tag

Recently, the Geographical Indication (GI) tag was bestowed upon Rajouri Chikri Wood Craft from Jammu & Kashmir.

- **Chikri** is a pale, honey coloured soft wood found in hill ranges of **Rajouri & Poonch** districts of Jammu province.
- **Thanamandi region** in district Rajouri is epicenter of this craft.
- Chikri is a type of wood that is smooth in texture, and it is directly linked with the craft making process with their unique and soft surface free of grainy surface.
- It is **very durable & light** therefore its products can withstand temperature fluctuations while being easily transported to other parts of world.

*Geographical indications (GIs) are a type of **intellectual property (IP).** The World Trade Organisation (WTO) recognises intellectual property rights under **TRIPS (Trade Related Aspects of Intellectual Property Rights) Agreement.** India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration & Protection) Act, **1999 which has come into force with effect from 15th September 2003**. **Darjeeling Tea** was the first Indian product to get the Geographical Indication tag.*

Shinon Meeras Museum

On 28th August, 2023, the Lieutenant Governor inaugurated the museum Shinon Meeras in Gurez Valley in Jammu & Kashmir. The first such cultural centre dedicated to the 38,000-strong Dard community of the region.

- India's first museum for Dardis traces the journey of Shina culture, language, and the **Gurezi way of life.**
- The centre is a unique tribute to preserve and promote the glorious artistic heritage of the **Dard-Shin tribal community.**
- A sand art display showcases the Indian Army's Operation Eraze to liberate Gurez from Pakistan Occupied Kashmir (PoK) in 1948.
- It is a special homage to protect and promote the illustrious creative history of the Dard-Shin tribal tribe and to share glimpses of its rich culture with the world.

*Dard Community is a **Buddhist group** inhabited in the villages of Dha, Hanu, Garkone and Darchik on both sides of the Indus River. They speak **Shina language.** They are culturally and linguistically different from other tribes in region. These tribals are mainly dependent on agriculture. Dard Community were once recorded in the **chronicles of ancient Greeks** and **Romans** for expanding their rule into Afghanistan and Tibet.*

*Gurez, or Gurais, is a valley located in the high Himalayas in northern region of the Kashmir. The **Kishanganga River** flows through the valley. The valley **lies near the Line of Control**, which separates it from the Astore and Neelum districts of Pakistan-administered Kashmir.*

UNESCO World Heritage Sites

Recently, heavy rain and floods in Himachal Pradesh have battered the 94-km-long Kalka-Shimla railway line, a UNESCO World Heritage Site.

- World Heritage Sites are various areas or objects inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List.
- The sites are designated as having "**outstanding universal value**" under the **Convention Concerning the Protection of the World Cultural and Natural Heritage**. This document was adopted by UNESCO in **1972** and formally took effect in 1975.
- It provides a **framework for international cooperation** in preserving and protecting cultural treasures and natural areas throughout the world.
- There are **three types of sites**:
  1. **Cultural heritage sites** include hundreds of historic buildings and town sites, important archaeological sites, and works of monumental sculpture or painting.
  2. **Natural heritage sites** are restricted to those natural areas that furnish outstanding examples of Earth's record of life or its geologic processes or provide excellent examples of ongoing ecological and biological evolutionary processes.
  3. **Mixed heritage sites** contain elements of both natural and cultural significance.

Four UNESCO World Heritage Sites of Indian Railways

1. Darjeeling Himalayan Railways (DHR) - inscribed by UNESCO in 1999
2. *Nilgiri Mountain Railways (NMR) inscribed in 2005*
3. *Kalka Shimla Railway (KSR) inscribed in 2008*
4. *Chhatrapati Shivaji Maharaj Terminus, Mumbai (CSMT) inscribed in 2004.*

UNESCO List of World Heritage in Danger

Recently, experts from the United Nations Educational, Scientific and Cultural Organization (UNESCO) have stated in a new report that the Italian city of Venice should be added to a list of world heritage sites in danger.

- The List of World Heritage in Danger is designed to inform the international community of conditions which threaten the very characteristics for which a property was inscribed on the World Heritage List, and to **encourage corrective action**.

- The List contains world heritage sites that are threatened by various conditions such as natural disasters, armed conflicts, wars, pollution, unchecked urbanisation, poaching, and uninhibited tourist development.
- The list of World Heritage Sites is maintained by the international **'World Heritage Programme'**, administered by the **UNESCO World Heritage Committee.**
- Inscribing a site on the List creates awareness of the site and the dangers it faces. It alerts the international community to join forces in helping save the site for posterity.
- It will also enhance the preservation techniques and make them more efficient.
- Adding a site on the List also enables the World Heritage Committee to **release finances from the World Heritage Fund** for the conservation of the endangered property.

*UNESCO World Heritage Committee is responsible for the **implementation of the World Heritage Convention**, defines the use of the World Heritage Fund and allocates financial assistance upon requests from States Parties. It has the final say on whether a property is inscribed on the World Heritage List. It examines reports on the state of conservation of inscribed properties and asks States Parties to take action when properties are not being properly managed. It **also decides on the inscription or deletion of properties** on the List of World Heritage in Danger.*

Yelagiri Hut Shelters

Over 200 years ago, the Malaiyali tribe settled on Yelagiri hill in Tamil Nadu, building clay huts for various purposes. Today, only one old hut remains as a symbol of their transition from foraging to a more modern lifestyle.

- The hut is formed of **red clay** on a teak wood structure.
- Made of dry bamboo leaves, the thatched roof is waxed with cow dung to prevent it from leaking during the monsoon season.
- This covering tends to make the house appear deceivingly small from the outside, but it has enough space to house eight people and a paran (attic) that was used to store pots and other household items.
- A unique feature of the **munn veedu (mud house)** or **andara kotai (storage facility)** is that it stands on a stilt-like structure also made of teak wood.

*The Malaiyali tribe – **malai meaning "hill" and yali meaning "people**" – is strewn across Tamil Nadu's hilly regions. The Malayalis have not any claim to be considered as an ancient hill tribe, but are Tamil speaking people who migrated from the plains to the hills in comparatively recent times, probably during the middle of eighteenth century.*

Mylara Cult

Recently, the discovery of two sculptures at Basrur in the Udupi district of Karnataka has proved that the ancient Mylara cult existed in the coastal region. The two sculptures resemble one belonging to the 15th century A.D. and another to the 17th century A.D.

- The Mylara cult was a religious tradition in the Deccan region during the **medieval period.**
- The cult is centered on the worship of a goddess named Mylara, believed to be a form of **Lord Shiva.**
- Mailara is often associated with other regional deities like **Mallanna in Andhra Pradesh** and **Khandoba in Maharashtra**. The cult has a diverse following that includes people from various castes and occupations, ranging from agricultural and pastoral communities to martial groups.

*Basrur was a historical trading city of the medieval period. It is a place where tangible evidence of Mylareshwar worship in the coastal region has emerged. There is a temple dedicated to **Mylareshwar in Kundapur**, the deity is worshipped in the form of Linga which is the first idol of Mylareshwara to be discovered in the region. It was a great centre of various cults because trading guilds like **Uhayadesi, Nanadesi** and others actively participated in the trade.*

Seethakali Folk Art

Recently, the Seethakali folk art was performed outside Kerala for the first time by Perinad Seethakali Sangham.

- The unique and flamboyant Seethakali is believed to have originated at **Perinad in Kollam district.**
- This art form was first performed some 150 years back by the people of **Vedar and Pulayar communities.**
- It is based on certain episodes taken from the **epic Ramayana**.It portrays the journey from **"vanayatra" (exile to the forest) to "andardhanam"** (descend into the earth) of Sita, featuring a blend of songs, storytelling, and fast movements.

- In the early times, Seethakali was performed as part of the harvest festival Onam.
- The props and instruments used during performances are all made of natural materials like bamboo and palm leaves.
- The costumes and the make-up are loud and eye-catching.
- The characters of **Rama and Laxmana appear in green** since the colour is used to represent gods and goddesses in Kathakali.

*The Pulayar also Pulaya, Pulayas, Cherumar, Cheramar, and Cheraman) is a caste group mostly found in the **southern part of India**, forming one of the main social groups in modern-day Kerala, Karnataka and historically in Tamil Nadu.*

*Pulayars are noted for their music, craftsmanship, and for certain dances which include **Kolam-thullal, a mask dance** which is part of their exorcism rituals, as well as the Mudi-attam or hair-dance which has its origins in a fertility ritual. The **folk dance Chozhikali** is performed by the Pulayar community of central Kerala.*

Megalithic Hat Stones Unearthed in Kerala

Recently, a large number of megalithic hat stones were discovered from a single site during an archaeological salvage excavation at Nagaparamba in Kuttippuram village, near Thirunavaya in Kerala.

- Hat stones, known as **"Thoppikkallu"** in Malayalam, are hemispherical laterite stones that were used as **lids for burial urns** during the megalithic period.
- The discovery of megalithic burial sites and unique artifacts sheds light on the **burial practices and rituals of the people** who lived in the region during the megalithic period.
- Megaliths were constructed either as **burial sites or commemorative (non-sepulchral) memorials.**
- The former are sites with actual burial remains, such as **dolmenoid cists** (box-shaped stone burial chambers), **cairn circles** (stone circles with defined peripheries) and **capstones** (distinctive mushroom-shaped burial chambers found mainly in Kerala).
- Non-sepulchral megaliths include memorial sites such as **menhirs.**
- In India, archaeologists trace the majority of the **megaliths to the Iron Age (1500 BC to 500 BC).**

***Salvage excavation** also known as **rescue archaeology or emergency archaeology**, refers to a type of archaeological excavation that is conducted in response to a situation where archaeological remains are threatened by construction, development, or other activities.*

Prime Ministers' Museum and Library Society

On 14th August, 2023, the Central government officially renamed the Nehru Memorial Museum and Library (NMML) as the Prime Ministers' Museum and Library Society.

- Prime Ministers' Museum and Library Society is an **autonomous institution** under the Ministry of Culture, Government of India.
- It is housed in the historic Teen Murti campus located south of Rashtrapati Bhavan in New Delhi.
- It is dedicated to the **objective of promoting advanced research on modern and contemporary India.**
- On Jawaharlal Nehru's 75th birth anniversary on November 14, 1964, Dr. Sarvepalli Radhakrishnan, President of India, formally dedicated the Teen Murti House to the nation and inaugurated the Nehru Memorial Museum.
- PMML has **four major constituents**, namely-
  1. Memorial Museum;
  2. Library on Modern India;
  3. Centre for Contemporary Studies;
  4. Nehru Planetarium.
- The General Council and the President and the Vice-President of the PMML Society are nominated by the Central Government.

Plans/Policies

Adopt a Heritage 2.0 Programme

On 4th September, 2023, the Archaeological Survey of India launched the 'Adopt a Heritage 2.0' programme seeking collaboration with corporate stakeholders in preservation of monuments. Besides, a user-friendly mobile app, named **'Indian Heritage'**, which will showcase the heritage monuments of India, was also unveiled.

- Adopt a Heritage 2.0 is a revamped version of the earlier scheme launched in 2017.
- It clearly **defines the amenities sought for different monuments** as per the Ancient Monuments and Archaeological Sites and Remains Act, **(AMASR Act) 1958.**
- It invites **corporate stakeholders to enhance amenities** at a monument by utilising their corporate social responsibility (CSR) funds.
- An e-permission portal, with URL **www.asipermissionportal.gov.in**, for obtaining permission for photography, filming and developmental projects on monuments was launched on the occasion.
- The portals will fast-track the process for obtaining various permissions and solve operational and logistical bottlenecks involved.
- The process for selection will be carried out after due-diligence and discussions with various stakeholders and assessing the economic and developmental opportunities at each monument.
- The 'Adopt a Heritage 2.0' programme will **help to foster collaboration** with corporate stakeholders through which they can contribute in preserving these monuments for our upcoming generations.

*Adopt a Heritage Scheme is an initiative of the Ministry of Tourism in collaboration with the Ministry of Culture, and the Archaeological Survey of India. It was launched in September 2017 on World Tourism Day. The project aims to encourage these entities to become '**Monument Mitras'** and take up the responsibility of developing and upgrading the basic and advanced tourist amenities at these sites.*

Kashi Culture Pathway

On 26th August, 2023, the 4th G20 Culture Ministers' meeting under the chairmanship of India was held in Varanasi (Uttar Pradesh). Building upon the success of the previous three Culture Working Group (CWG) meetings in Khajuraho, Bhubaneswar and Hampi, as well as the four Global Thematic Webinars, the 4th CWG was aimed at arriving at actionable outcomes while positioning culture at the heart of policy making.

The Outcome Document of India's Culture Ministers Meeting has been christened as the "Kashi Culture Pathway".

- Kashi Culture Pathway highlights the need to address -
  - The **destruction of cultural heritage** in situations of conflict,
  - The **curbing of illicit trafficking** of artifacts,
  - The **restitution of cultural property** and
  - The **need to protect living heritage**, especially of indigenous people.
- The document said the nations were *united against destruction* of cultural heritage whether intentional or collateral, notably in situations of conflict.
- They called for a **strengthened and effective global coalition** to bolster the fight against the illicit trafficking of cultural property.
- It sought **cooperation among nations** and strengthening of appropriate tools to increase the effectiveness of law enforcement collaboration through voluntary data and information exchange.
- It also sought preventive action and regulation of illicitly exported cultural property specially in online trade.
- Further, it mandates an **inclusive dialogue** on the return and restitution of cultural property by enabling alternate dispute resolution mechanisms.

*In 2020, the **first meeting of the Ministers of Culture in G20 history** was organized by the **Saudi Presidency** on the margins of the G20. In 2021, the Italian Presidency of the G20 incorporated Culture as a **Working Group in the G20 Agenda** and hosted the first G20 Culture Ministerial Meeting, leading to the **Rome Declaration** recognizing culture's transformative role in sustainable development.*

*In 2022, the second G20 Culture ministerial meeting was organized under the Indonesian Presidency and the **Bali Leaders' Declaration** further reaffirmed culture's agency in enabling sustainable development and sustaining livelihoods.*

One District One Product Wall

On 12th August, 2023, the One District One Product (ODOP) initiative has collaborated with the Deendayal Antyodaya Yojna - National Rural Livelihoods Mission (DAY-NRLM) to unveil the captivating 'ODOP Wall' in a bid to showcase India's diverse and exceptional craft heritage.

This strategic collaboration was unveiled with the inauguration of the ODOP Wall at **SARAS Aajeevika** Store in New Delhi. SARAS Aajeevika is an initiative by Deendayal Antyodaya (DAY-NRLM), Ministry of Rural Development.

- The partnership aims to **drive consumers towards emporia**, increasing sales and promoting SARAS products, thereby further uplifting indigenous crafts and rural Self Help Groups (SHGs) of women.
- Under this collaboration, **products with distinctive qualities** and cultural significance are being identified from various districts.
- These include **handicrafts, handloom items, and agricultural products** that hold a strong connection with their places of origin.
- This collaborative effort holds the potential to strengthen the position of indigenous crafts and artisans.

*ODOP program is an initiative under the **Department for Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce & Industry. Under this, **products are being identified from all districts** to be promoted for their unique qualities and cultural significance which include various handicrafts, handloom, and agricultural products that have been associated with the identity of their place of origin.*

*Deen Dayal Antyodaya Yojana – National Livelihoods Mission (NRLM) was launched in **June 2011** as a restructured version of Swarna Jayanti Gram Swarozgar Yojna (SGSY). It aims at creating efficient and **effective institutional platforms of the rural poor** enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services. In November 2015, the program was renamed as Deendayal Antayodaya Yojana (DAY-NRLM).*

Personality

President Hailed Women Freedom Fighters

On the eve of 77th Independence Day of India, President of India in her speech, hailed the contribution of women freedom fighters and remembered the contributions of Kanaklata Barua and Matangini Hazra among others.

Matangini Hazra

- Born in Hogla, West Bengal in 1869, she was a revolutionary leader who played a significant role in India's struggle for independence.
- Following her husband's death, she began devoting herself to social causes.
- She was influenced by Gandhiji's beliefs, that she earned the name "**Gandhi Buri" (the old Gandhian woman).**
- In 1905, she became actively involved in the Indian independence struggle and was arrested for taking part in the Civil Disobedience Movement in 1930.

- She participated in the Non-Cooperation movement in 1932 and was arrested for her role in the Salt Satyagraha movement.
- She was arrested again and imprisoned in Baharampur for six months for his persistence with the demand of Salt Tax be repealed.
- Matangini Hazra led a march during the Quit India movement of 1942, to take over the Tamluk police station from British authorities and fell to the British bullets at the age of 73.
- She was the **first woman revolutionary** to have her **statue erected in the Kolkata Maidan in 1977.**

Kanaklata Barua

- She was one of the **youngest martyrs of the Quit India Movement** and has an iconic status in Assam.
- She was born on December 22, 1924, at Barangabari of Sonitpur district of Assam.
- At the age of 17 she was motivated to join the freedom struggle of the country and tried to join the Azad Hind Fauz. But because of her being minor she could not succeed.
- She joined the **Mrityu Bahini** and was made the leader of the women cadres of the Bahini.
- Role in freedom struggle - Barua led the Mrityu Bahini, a procession of freedom fighters, to unfurl the Tricolour at Gohpur police station on September 20, 1942.
- In 2020, the **Coast Guard named a Fast Patrol Vessel (FPV)** after her, the ICGS Kanaklata Barua.

*Mrityu Bahini was formed by **Pushpalata Das along with her husband Omeo Kumar Das**. Born on 27 March 1915 in Lakhimpur (Assam), Pushpalata Das was an activist, an ardent Gandhian, and a freedom fighter who actively participated in India's freedom struggle ever since she was a child. At the age of 6, she joined the **Banar Sena (Monkey Brigade)**, a locally organised volunteer group of girls that worked to **promote swadeshi and popularise khadi** among people.*

News Snippets

Mangri Orang (Malati Mem)	• Recently, the North East Regional Centre (NERC) of the Indira Gandhi National Centre for the Arts (INGCA) staged Malati Mem, a multilingual play based on the life and the revolutionary zeal of Mangri Orang, an Adivasi with roots in Central India. The theatrical production was an initiative to showcase the life and contributions of the icons of the northeast on the national stage. • Mangri Orang (Malati Mem) is said to be the first female martyr of India's freedom movement. • She was a tea plantation worker and became one of the leading members of the anti-opium campaign in tea gardens. • In 1921, while participating in the non-cooperation movement, she was killed by government supporters for supporting Congress Volunteers in prohibition campaign against foreign liquor and opium.
Anduri Utsav	• Recently, Anduri Utsav was celebrated at Dayara Bugyal of Uttarkashi district, Uttarakhand. • The Anduri Utsav is a festival of Uttarakhand in which villagers of Dayara Bugyal play 'Holi' by applying milk and butter instead of Gulal on each other. • It is also known as 'Butter Festival'. • Earlier this festival was celebrated by throwing cow dung on each other but now milk, butter, and buttermilk are used. • The festival is a way of expressing gratitude to Lord Krishna, who is believed to have protected the cattle from evil forces while they were grazing in the bugyal. • Bugyal means a meadow or pasture in local Uttarakhandi dialect. Dayara Bugyal is situated at an altitude of 11,000 feet above sea level, is one of the pristine meadows in the state.
Abanindranath Tagore	• Recently, 152nd birth anniversary of Abanindranath Tagore (1871-1951) was celebrated. • Born in Jorasanko, Calcutta on 7 August 1871, he was a revolutionary artist who played an instrumental role in establishing the Bengal School of Art which aimed at reviving traditional Indian art forms. • It was Abanindranath who ushered in the modem art movement in Bengal. • He was a supporter of Swadeshi values in India. • He first created the 'Indian Society of Oriental Art' and later went on to establish the Bengal School of Art. • Some of his famous paintings - Passing of Shah Jahan, Bharat Mata, Radha Krishna, and Omar Khayyam. • Some of his books like 'Budo Angla', 'Khirer Putul' and 'Raj kahini' are best examples of Bengali children's literature.
Pulikkali (Tiger Dance)	• Recently, human tigers and leopards pranced about the streets in a rollicking show of Pulikkali to lend a carnivalesque finish to Onam celebrations. • Pulikkali (Tiger Dance) is one of the folk art forms of Kerala. • On the fourth day of the Onam festival, artists paint their bodies like tigers with stripes of yellow, red and black and dance to the rhythm of traditional percussion instruments such as thakil, udukku and chenda. • The main theme of this folk art is tiger hunting, with participants playing the role of tiger and hunter. • It was introduced by the erstwhile ruler of Cochin, Maharaja Rama Varma Sakthan Thampuran.

Agriculture

- 'A-HELP' Program
- Hydroponics

Banking & Finance

- Non-Deliverable Forwards (NDF)
- Compulsorily Convertible Debentures (CCDs)
- Incremental Cash Reserve Ratio (ICRR)
- Public Tech Platform for Frictionless Credit
- RBI Revises Guidelines for Infrastructure Debt Funds (IDF-NBFCs)
- Surety Insurance Bond
- RBI Launches UDGAM Portal
- Floating Interest Rate

Plans/Policies

- Mines and Minerals (Development and Regulation) Amendment Act, 2023
- Number of Jan Dhan Accounts Crosses 50 Crore
- Direct Incentive Disbursement Program
- Investment Attractiveness of Indian States
- North East Special Infrastructure Development Scheme
- Investor Education and Protection Fund

Infrastructure

- Bharat New Car Assessment Program

Reports/Surveys

- Forward Looking Surveys

Agriculture

'A-HELP' Program

On 14th August, 2023, the Department of Animal Husbandry and Dairying launched the 'A-HELP' (Accredited Agent for Health and Extension of Livestock Production) program in Gujarat.

The program aims to **empower women** by engaging them as trained agents who contribute significantly to disease control, artificial insemination under the Rashtriya Gokul Mission (RGM).

- The initiative is part of the **Pashudhan Jagriti Abhiyaan** which aims to **empower farmers and improve livestock** health, disease management, and animal infertility concerns.
- The Pashudhan Jagrati Abhiyaan includes **workshops, awareness camps, seminars, and practical training sessions** conducted by State Veterinary Universities in collaboration with State Animal Husbandry Departments.
- Collaborations with **experts from Indian Immunological Ltd.** enhance the initiative's efficacy by providing essential nutritional supplements, mineral mixtures, dewormers, and medicines to farmers.
- This holistic approach combines knowledge and tangible resources for the betterment of livestock.
- The 'A-HELP' program exemplifies the **integration of women's power** in the livestock sector. It aligns with the vision of the Prime Minister for socio-economic progress and empowers women while advancing the livestock sector.

Pashudhan Jagriti Abhiyan *is being led by the Department of Animal Husbandry and Dairying (DoAH&D). In this campaign, efforts are made to effectively transform the 112 most under-developed districts across the country by organising village-level camps to spread awareness on entrepreneurship.*

Rashtriya Gokul Mission (RGM) *is being implemented for the development and conservation of indigenous bovine breeds since December 2014. It is continued under the umbrella scheme Rashtriya Pashudhan Vikas Yojana from 2021 to 2026. Main objective is to* ***promote indigenous cattle & buffalo*** *rearing and conservation in a scientific and holistic manner.*

Hydroponics

Recently, ICAR-Indian Institute of Horticulture Research, Bengaluru (IIHR) has developed a variant of hydroponics - "Cocoponics".

Cocoponics refers to the **soilless production** of vegetables using cocopeat as a substrate.

- Hydroponics is a **type of horticulture** and a **subset of hydroculture** which involves growing plants, usually crops or medicinal plants, without soil, by using water-based mineral nutrient solutions.
- The nutrients used in hydroponic systems can come from many different **organic or inorganic sources**, including fish excrement, purchased chemical fertilizers, or artificial nutrient solutions.
- At present, this technology is mostly confined to **urban farming, rooftop gardening** and **commercial farming.**
- It significantly **reduces water usage** compared to traditional soil-based farming by delivering water directly to plant roots, minimizing wastage.
- Plants in hydroponic systems often **grow faster than those in soil** due to consistent access to nutrients and ideal growing conditions.
- It **enables year-round cultivation** regardless of external weather conditions, ensuring a continuous supply of crops.
- Adoption of hydroponics can help **achieve food security** and make nations self-reliant through sustainable practices.

*Established in **September 1967**, IIHR is an autonomous organization acting as a nodal agency for basic, strategic, anticipatory and applied research on various aspects of horticulture in India. Headquartered in Bengaluru (Karnataka), it is a **subsidiary of Indian Council of Agricultural Research (ICAR),** New Delhi. The institute also houses Project Coordinating Unit of All India Coordinated Research Project on Tropical Fruits at its campus.*

Banking & Finance

Non-Deliverable Forwards (NDF)

On 23rd August, 2023, the Reserve Bank of India (RBI) asked some banks to stop taking fresh arbitrage positions in the non-deliverable forwards (NDF) market.

- An NDF is a **short-term, cash-settled forwards** contract that investors use to trade in currencies in an offshore market.
- The two involved parties create a settlement between the contracted NDF rate and the leading spot price when both parties agree on a **notional amount**.
- NDFs in the non-deliverable forward market are **always settled in cash** and are non-deliverable, meaning the trader cannot take the delivery of the currencies.
- These contracts are **OTC (over-the-counter)** and are usually settled in the offshore currency market.
- For example, if a currency is restricted to be traded outside the country, it becomes impossible to settle trade with someone who is outside the country.
- In this case, the parties use NDFs within the non-deliverable forward market that converts all the **profits and losses to a freely traded currency** in both countries.
- The **largest NDF markets** are in the Chinese 'Yuan', Indian 'Rupee', South Korean 'Won', New Taiwan 'Dollar', Brazilian 'Real' and Russian 'Ruble'.
- The **largest segment of NDF trading** takes place in London, with active markets also in New York, Singapore, and Hong Kong.

*An **offshore market** refers to a location that is **outside a trader's home country**. In an offshore market, the **rules and regulations may be flexible** and can allow traders to **decrease their tax obligations.***

Compulsorily Convertible Debentures (CCDs)

Recently, the Delhi bench of the **Income Tax Appellate Tribunal (ITAT)** held that Compulsorily Convertible Debentures (CCDs) are in the nature of borrowed fund and continue to be in debt till conversion thereof into shares.

- **Under Section 2(30)** of the **Companies Act, 2013** a debenture is a debt instrument for the company. It includes debenture stock, bonds or any other instrument of a company evidencing a debt, whether constituting a charge on the assets of the company or not.
- Unlike most investment-grade corporate bonds, **it is not secured by collateral**.

A debenture comes in two forms:

1. **Non-convertible Debenture** cannot be converted into equity shares of the issuing company. Instead, debenture holders receive periodic interest payments and get back their principal at the maturity date, just like most bondholders.
2. **Convertible Debentures** may be converted into the company's equity after a set period of time. That convertibility is a perceived advantage, so investors are willing to accept a lower interest rate for purchasing convertible debentures.

- Debenture holders have **no rights to vote** as shareholders until their debentures are converted into shares.
- The CCD is one **form of the convertible debentures.**
- It is a type of bond which must be converted into stock by a specified date.
- It is classified as a **hybrid security**, as it is neither purely a bond nor purely a stock.

***ITAT** is a **quasi-judicial institution** set up in January, 1941, and specializes in dealing with appeals under the Direct Taxes Acts. The orders passed by the ITAT are final; an appeal lies to the High Court only if a substantial question of law arises for determination.*

Incremental Cash Reserve Ratio (ICRR)

On 10th August, 2023, the Reserve Bank of India (RBI) asked banks to maintain an incremental Cash Reserve Ratio (ICRR) of 10 per cent on the increase in net demand and time liabilities (NDTL) of banks between May 19 and July 28, 2023.

The move aims to **manage the higher surplus liquidity** sloshing about in the economy following the return of Rs. 2,000 notes to the banking system (after they were withdrawn from circulation).

- Banks are mandated to **maintain a certain proportion of their deposits** and specific liabilities as liquid cash with the RBI, which is called as **Cash Reserve Ratio (CRR).**
- This serves as a mechanism for the RBI to **regulate liquidity in the economy** and act as a buffer during periods of financial strain.
- ICRR is similar to the CRR, wherein banks need to set aside a certain portion of their money with the RBI. They **do not earn any interest** on this.
- RBI's main intention is to **contain inflation** through this tool.
- As liquidity is sucked out, banks will have lesser money to lend, thus bringing down demand for goods and services, thus **bringing down prices.**

- The introduction of an incremental CRR, though on a temporary basis, will impound resources of banks and have an **upward impact on market rates.**

Net Demand and Time Liabilities (NDTL) *refers to the total demand and time liabilities (deposits) of the public that are held by the banks with other banks. Demand deposits consist of all liabilities, which the bank needs to pay on demand. They include current deposits, demand drafts, balances in overdue fixed deposits, and demand liabilities portion of savings bank deposits. Time deposits consist of deposits that will be repaid on maturity, where the depositor will not be able to withdraw his/her deposits immediately.*

Public Tech Platform for Frictionless Credit

On 17th August, 2023, the Reserve Bank of India (RBI) launched a pilot project in the form of a "Public Tech Platform for Frictionless Credit". The move seeks to give digital information to lenders to **expedite access to credit or loans.**

- The platform has been developed by the Reserve Bank Innovation Hub.
- It has been designed to facilitate the **smooth provision of credit** by ensuring the effortless transmission of essential digital data to lenders.
- It is an **end-to-end digital platform** that will have an open architecture, open Application Programming Interfaces (APIs), and standards to which all banks can connect in a "plug and play" model.
- The platform provides for doorstep disbursement of loans in assisted or self-service mode without any paperwork.
- During the pilot project phase, the platform will focus on products such as **Kisan Credit Card loans** up to Rs 1.6 lakh per borrower, **dairy loans, MSME loans** (without collateral), **personal loans** and **home loans** through participating banks.
- The platform is expected to significantly enhance the efficiency of the lending process by reducing costs, enabling quicker disbursement, and ensuring scalability.

Reserve Bank Innovation Hub has been set up as a ***Section 8 company under the Companies Act, 2013*** *with an initial capital contribution of Rs. 100 crore. It is a wholly owned subsidiary of the RBI. It aims to create an ecosystem that focuses on* ***promoting access to financial services*** *and products for the low-income population in the country.*

Frictionless credit *is a borrowing approach that seeks to streamline the lending process for consumers. Unlike the traditional credit systems, where individuals need to go through extensive paperwork, credit checks and lengthy approval procedures, frictionless credit promises a smoother and faster experience.*

RBI Revises Guidelines for Infrastructure Debt Funds (IDF-NBFCs)

On 18th August, 2023, the Reserve Bank of India (RBI) introduced new requirements for Infrastructure Debt Fund-NBFCs (IDF-NBFCs).

An IDF is set up either as a trust or as a company. A trust based IDF is registered as an **IDF-Mutual Fund (IDF-MF)** and is regulated by the Securities and Exchange Board of India (SEBI) whereas a company based IDF is registered as an **IDF- Non-Banking Financial Company (IDF-NBFC)** and is regulated by the Reserve Bank of India (RBI).

- The **revised definition** of an IDF-NBFC specifies that it is a non-deposit-taking NBFC authorized to refinance infrastructure projects that have completed at least one year of satisfactory commercial operations.
- IDF-NBFCs are now required to maintain a **minimum Net Owned Fund of Rs. 300 crore** and a **CRAR of at least 15%,** with a minimum **Tier 1 capital of 10%.**
- They can directly **finance toll-operate-transfer (TOT) projects.**
- These entities are permitted to raise funds **through rupee or dollar-denominated bonds** with a minimum maturity of five years.
- They can also use **shorter tenor bonds** and **commercial papers (CPs)** up to 10% of their total outstanding borrowings for better asset-liability management (ALM).
- **External commercial borrowings (ECBs)** with a minimum tenure of five years, not sourced from foreign branches of Indian banks, can also be utilized.
- The requirement for **sponsorship of IDF-NBFCs by banks or NBFC-Infrastructure Finance Companies (NBFC-IFCs)** has been removed.
- The **need for a tripartite agreement** with concessionaires and project authorities for investments in Public-Private Partnership (PPP) infrastructure projects is **now optional**.

Commercial Paper (CP) *is an unsecured money market instrument issued in the form of a promissory note. CPs are short-term instruments and the maturity period varies from seven days to up to one year. The instrument was introduced in 1990 to enable highly rated corporate borrowers to diversify their sources of short-term borrowings, and also to provide an additional instrument to investors.*

CPs can be issued by corporates, primary dealers, and financial institutions. Banking companies, mutual funds, other corporate bodies, NRIs, individuals and foreign institutional investors (FIIs) can subscribe to CPs; they are also traded in the secondary market.

Surety Insurance Bond

Recently, the National Highways Authority of India (NHAI) organised a brainstorming session with stakeholders to expedite the adoption of Surety Insurance Bonds for its contracts.

- Surety Insurance Bonds can be defined in their simplest form as a **written agreement** to guarantee compliance, payment, or performance of an act.
- These are instruments where **insurance companies act as 'Surety**' and provide the financial guarantee that the contractor will fulfil its obligation as per the agreed terms.
- It involves a three-party agreement-
  1. **Principal:** The party that purchases the bond and undertakes an obligation to perform an act as promised.
  2. **Surety:** The insurance company or surety company that guarantees the obligation will be performed. If the principal fails to perform the act as promised, the surety is contractually liable for losses sustained.
  3. **Obligee:** The party who requires and often receives the benefit of the surety bond. For most surety bonds, the obligee is a local, state or federal government organisation.
- Unlike a bank guarantee, the Surety Bond Insurance does not require large collateral from the contractor, thus freeing up significant funds for the contractor, which they can utilise for the growth of the business.
- Security bonds act as damage control for the government if the infrastructure building company runs out of money or is not able to complete the project on time.
- It remains a legal document which assures that in the event of non-performance of the specified obligations, the insurer has to provide compensation for loss and damage.

Insurance Regulatory and Development Authority of India's (IRDAI's) Surety Insurance Contracts Guidelines, 2022 ***came into effect on April 1, 2022****. As per the guidelines, the* ***premium charged for all surety insurance policies underwritten*** *in a financial year, including all installments due in subsequent years for those policies, should* ***not exceed 10%*** *of the total gross written premium of that year, subject to a* ***maximum of Rs. 500 crore.***

RBI Launches UDGAM Portal

On 17th August, 2023, the Reserve Bank of India launched a centralised web portal-UDGAM (Unclaimed Deposits – Gateway to Access inforMation).

Unclaimed deposits have become a growing concern, prompting the RBI to develop strategies to raise public awareness about the importance of claiming these funds.

The portal aims to **help users identify their unclaimed deposits/accounts** and enable them to either claim the deposit amount or make their deposit accounts operative at their respective banks.

- The development of the portal is a collaborative effort involving the **Reserve Bank Information Technology Pvt Ltd (ReBIT)**, **Indian Financial Technology & Allied Services (IFTAS),** and participating banks.
- To begin with, users would be able to access the details of their unclaimed deposits in respect of **seven banks** - 1. State Bank of India, 2. Punjab National Bank, 3. Central Bank of India, 4. Dhanlaxmi Bank, 5. South Indian Bank, 6. DBS Bank India and 7. Citibank N.A.
- Individuals can use the portal to either **claim the amount of their unclaimed deposit** or reactivate their dormant deposit accounts.
- While the portal currently offers access to unclaimed deposit details from seven banks, the search facility for deposits from other banks will be gradually introduced by **October 15, 2023.**
- The portal **increases transparency** by keeping claimants aware with the latest, accurate data about their unclaimed deposits.
- It also **streamlines the resolution process** of unclaimed deposits by offering effortless access to relevant information and aiding in the deposit claims process.

Founded in 2016, *Reserve Bank Information Technology Pvt. Ltd. (ReBIT) is* ***RBI's subsidiary*** *for enterprise technology and allied services to take care of the IT requirements, including the cyber security needs of the Reserve Bank and its regulated entities.*

Indian Financial Technology & Allied Services (IFTAS) was established in ***February 2015*** *by the* ***Institute for Development and Research in Banking Technology (IDRBT),*** *an autonomous organization funded by the Reserve Bank of India, in pursuance of the recommendation of the* ***Rangarajan Committee (2009).*** *It designs, deploys & provides the essential IT-related services, required by the Reserve Bank of India, banks, and financial institutions.*

Floating Interest Rate

On 18th August, 2023, the Reserve Bank of India (RBI) asked all regulated entities (REs) to give personal loan borrowers an option to switch over from a **floating rate** to a fixed rate regime at the time of resetting interest rates.

RBI said that the borrowers will also be **given the choice to opt for enhancement in EMI** or elongation of the tenor.

- A floating interest rate is an interest rate that **changes periodically**.
- The rate of interest moves up and down, or "floats," reflecting economic or financial market conditions.
- The change in interest rate with a floating rate loan is **typically based on a reference** or "benchmark" rate that is outside of any control by the parties involved in the contract.
- A floating interest rate uses a reference rate as the base.
- Several factors tend to influence the calculation of floating interest rates like repo rate, government's monetary policies, inflation rate, fiscal deficit, etc.
- **It is primarily used in home loans.** These loans come with the option of choosing between fixed and floating interest rates. So, if the interest rate of the bank rises, the Equated Monthly Installment (EMI) will commensurately rise and vice versa.

- Thus, a floating rate should be chosen if the interest rate is **expected to drop in the future.** Floating rates are also commonplace in the banking industry when corporates borrow money.

*A fixed interest rate does **not change throughout the tenure** of the borrowed loan. So, a home loan borrowed at a fixed interest rate will demand a fixed EMI. It **does not impact the return** on the investment against the loan.*

Plans/Policies

Mines and Minerals (Development and Regulation) Amendment Act, 2023

On 9th August, 2023, the President gave assent to the Mines and Minerals (Development and Regulation) Amendment Bill, 2023.

The new Act aims to amend the Mines and Minerals (Development and Regulation) Act, 1957.

- It seeks to **bring exploration processes at par** with that of developed countries by getting private sector capacity into exploration.
- It puts **six minerals** used in electric vehicle batteries and other energy storage into a list of critical and strategic minerals. It includes lithium, beryllium, niobium, titanium, tantalum, and zirconium.
- It allows **prohibited activities** under the erstwhile Mines and Minerals (Development and Regulation) Act like pitting, trenching, drilling, and sub-surface excavation as part of reconnaissance including mapping and surveys.
- It proposes a new type of **Exploration License (EL).**
- EL will be issued for **29 minerals specified in the Seventh Schedule**. These include gold, silver, copper, cobalt, nickel, lead, potash, and rock phosphate.
- It empowers the **Central Government to exclusively auction mining lease** and composite license for certain critical minerals, minerals of "rare earth" group (not containing Uranium and Thorium); fertilizer minerals such as potash, glauconite and phosphate (without uranium) and minerals being removed from the list of atomic minerals.
- The Act will usher in transformative changes to India's mining sector. It will further fulfil the nation's goal of sustainable resource utilization and economic growth.

***Rare Earths (REs)** are a set of **seventeen metallic elements**. These include the fifteen lanthanides in the periodic table in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.*

*These minerals have **unique magnetic, luminescent, and electrochemical properties** and thus are used in many modern technologies. India has **6% of the world's REs** but it only produces **1% of global output**.*

Number of Jan Dhan Accounts Crosses 50 Crore

As per the latest reports submitted by banks, the total number of Jan Dhan accounts under the Pradhan Mantri Jan Dhan Yojana (PMJDY) has crossed 50 crore as on 9th August, 2023.

Out of these, **56% accounts belong to women** and **67% accounts have been opened in Rural / Semi-urban areas.** The average balance in PMJDY accounts is Rs. 4,076 and more than 5.5 crore PMJDY accounts are receiving DBT benefits.

- PMJDY **(National Mission for Financial Inclusion)** was launched in August 2014 to ensure access to financial services, namely, Banking/ Savings & Deposit Accounts, Remittance, Credit, Insurance and Pension, in an affordable manner.
- It envisages **universal access to banking facilities** with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension.
- The plan also **envisages channeling all Government benefits** (from Centre / State / Local Body) to the beneficiary's accounts and **pushing the Direct Benefits Transfer (DBT)** scheme of the Union Government.
- PMJDY has a **structured monitoring mechanism** from Central to District level. At the Centre, Finance Minister is the Mission Head along with a Steering Committee and a Mission Director.
- The program is monitored at State level by a **State Implementation Committee** and in the districts by a **District Implementation Committee.**
- PMJDY scheme has been successful in **changing the financial landscape** of the country and has brought near saturation in bank accounts for adults.

Direct Incentive Disbursement Program

On 7th August, 2023, the Postal Life Insurance (PLI) introduced the pilot program for "Direct Incentive Disbursement" in the Delhi and Uttarakhand Circles. The Program is aimed at **recognizing and rewarding the sales force** of the Postal Life Insurance (PLI) department for their contributions and achievements.

It also aims to **streamline the process of incentive disbursement** and provide various benefits to the sales force members across the nation.

- The program acknowledges the **crucial role played by PLI's** sales force in driving the department's success.
- Sales force members will **receive their incentives directly in their Post Office Savings Bank accounts**, ensuring quick and secure transactions.
- The direct disbursement of incentives allows the sales force to **conveniently manage their funds.** Immediate rewards are expected to enhance motivation and drive optimal performance.

- **Automated payout processes will reduce administrative costs,** enabling the department to focus more on delivering excellent client service.
- The program will **impact approximately two lakh sales force members** nationwide, including Gramin Dak Sevaks, Direct Agents, Field Officers, and Departmental Employees.

*Postal Life Insurance (PLI) is the **oldest life insurer in India**, introduced in **February 1884**. It initially started as a welfare scheme for the benefit of postal employees and later extended its coverage to employees of the Telegraph Department in 1888.*

*PLI extended **insurance cover to female employees** of the former P & T Department in 1894, at a time when most other insurance companies did not provide coverage for female lives.*

Investment Attractiveness of Indian States

Recently, according to a study by the Reserve Bank of India (RBI), 5 states accounted for more than half of the total bank-assisted investment proposals made during the year 2022-23.

- The five states are **1. UP (16.2%), 2. Gujarat, 3. Odisha, 4. Maharashtra and 5. Karnataka** together accounted for 57.2% share in total project cost during 2022-23, higher than 43.2% share during 2021-22.
- In bank-assisted projects, **Kerala, Goa and Assam** are at the bottom of the table in getting the lowest number of new investments.
- **Overall investment plans** shot up by 79.50% with a record capital outlay of Rs 352,624 crore - the highest since 2014-15.
- Overall, a **total capital investment** of Rs 2,19,649 crore through the various channels of funding was expected to be made by the private corporate sector in 2022-23 (6.7% higher than the previous year).
- **Investment in green field (new) projects** accounted for the largest share of 93.1% in the total cost of projects financed by banks and FIs during 2022-23, in line with the trend seen in the past.
- **Roads and bridges** held a significant share in the total project cost, supported by the government's push towards infrastructure projects through the "**Bharatmala" initiative.**

***Bharatmala Pariyojana** is an umbrella program for the highways sector envisaged by the Ministry of Road Transport and Highways that focuses on optimizing the efficiency of freight and passenger movement across the country. **Phase-II** of the project envisages around 48,000 km of road network across India by 2024.*

North East Special Infrastructure Development Scheme (NESIDS)

On 21st August, 2023, the Union Cabinet gave approval for the continuation of the North East Special Infrastructure Development Scheme (NESIDS) with an outlay of Rs. 8139.50 crore.

For the period from 2022-23 to 2025-26, two components, viz. **NESIDS-Road** and **NESIDS-Other Than Road Infrastructure (OTRI)** have been approved.

- Launched in **2017**, NESIDS is taken up to fill up gaps of infrastructure in certain identified sectors of the region.
- The broad objective of NESIDS is to **ensure focused development of North East Region** by providing financial assistance for projects of (a) physical infrastructure relating to water supply, power, connectivity and specially the projects promoting tourism and (b) social sector for creation of infrastructure in the areas of primary and secondary sectors of education and health.
- NESIDS **complements the existing schemes** of the Central and State governments in the North East. It provides additional funding to address specific infrastructure gaps and developmental challenges that might not be fully covered by other schemes.
- All eight North East Indian states – Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, and Sikkim – are direct beneficiaries of NESIDS.

By addressing existing infrastructural gaps, NESIDS **catalyzes fostering balanced growth and development** across different regions of the country. It ensures that the North Eastern states are not left behind in the nation's journey towards progress.

Investor Education and Protection Fund

On 11th August, 2023, Investor Education and Protection Fund Authority (IEPFA) launched two Investor Awareness Vans named "Niveshak Sarathi" as part of the Azadi ka Amrit Mahotsav celebrations.

This strategic initiative aims to **disseminate crucial financial education** and raise awareness against fraudulent schemes across the Delhi NCR region.

- **Investor Education and Protection Fund (IEPF)** has been established under **Section 205C of the Companies Act, 1956** by way of **Companies (Amendment) Act, 1999** for promotion of investors' awareness and protection of the interests of investors.
- The amounts such as dividends, applications money, matured deposits, etc. which have remained **unpaid or unclaimed for a period of 7 years** are required to be transferred to the IEPF.
- The Amounts credited to IEPF are maintained under the **Consolidated Fund of India (Article 266 of the Constitution).**

- IEPF is utilized for:
  - ✓ The refund in respect of unclaimed dividends, matured deposits, matured debentures, the application money due for refund and interest thereon,
  - ✓ Promotion of investors' education, awareness and protection,
  - ✓ Distribution of any disgorged amount among eligible and identifiable applicants for shares or debentures, shareholders, debenture-holders or depositors who have suffered losses ,
  - ✓ Reimbursement of legal expenses incurred in pursuing class action suits under sections 37 and 245 by members, debenture-holders or depositors as may be sanctioned by the Tribunal.
- There is a Committee (Commonly referred to as **Main Committee or Apex Committee**) to administer the IEPF. The Committee can appoint Sub-Committee to facilitate efficient and speedy discharge of its functions.
- *Investor Education and Protection Fund Authority (IEPFA) was established on 7th September, 2016 under the provisions of* ***section 125 of the Companies Act, 2013.*** *It comes under the Ministry of Corporate Affairs.*

The Authority is entrusted with the ***responsibility of administration*** *of the Investor Education Protection Fund (IEPF) make refunds of shares, unclaimed dividends, matured deposits/debentures etc. to investors and to promote awareness among investors.*

Infrastructure

Bharat New Car Assessment Program

On 22nd August, 2023, the Ministry of Road Transport & Highways launched Bharat New Car Assessment Program (Bharat NCAP) in New Delhi.

It aims to **enhance road safety** by elevating vehicle safety standards for up to 3.5-tonne vehicles in India. The Program has been developed in line with **Global NCAP norms**.

- This program will commence from **1st October 2023** and will be based on Automotive Industry Standard (AIS) 197.
- It will be anchored by **Central Institute of Road Transport (CIRT).**
- It is applicable to type approved motor vehicles of **M1 category less than 3.5T GVW**. This is a voluntary program in which the base variants of a given model shall be tested.
- These cars will be given star ratings for **Adult Occupant (AOP) and Child Occupant (COP),** which can be used by customers in making purchase decisions.
- To receive a 5-star rating, a vehicle needs at least **27 points in AOP** and requires **41 points in COP.**
- As per the Bharat NCAP rules, car manufacturers will have to submit an application in **Form 70-A** to the designated agency of the central government.
- The proposed program is expected to develop a **safety sensitive car market** in India.

The ***Global NCAP*** *is a project of the Towards Zero Foundation, a UK-registered charity. It aims to* ***promote the sale of safer cars*** *in developing markets by empowering consumers with objective information about the safety of vehicles. Global NCAP* ***supports the UN Sustainable Development Goals*** *and the target to halve road deaths and injuries by 2030 (50 by 30), and the full implementation of the Global Plan for the* ***UN's Decade (and Second Decade) of Action for Road Safety*** *especially the recommended activities for vehicles.*

Reports/Surveys

Forward Looking Surveys

On 10th August, 2023, the Reserve Bank of India released the result of seven surveys (collectively known as Forward Looking Surveys) on its website. A brief overview of the surveys is presented here.

1. Consumer Confidence Survey (CCS)

- ✓ The CCS asks people across 19 cities about their current perceptions and future expectations on a variety of economic variables.
- ✓ These variables include the general economic situation, employment scenario, overall price situation, own income and spending levels.
- ✓ Based on these specific responses, the RBI constructs two indices: the Current Situation Index (CSI) and the Future Expectations Index (FEI).
- ✓ The main variables of the survey are- Economic situation, Employment, Price Level, Income and Spending.

2. Inflation Expectations Survey of Households (IESH)

- ✓ The IESH survey is conducted at bi-monthly intervals by the Reserve Bank.
- ✓ It provides directional information on near-term inflationary pressures as expected by the respondents and may reflect their own consumption patterns.

3. Order Books, Inventories and Capacity Utilisation (OBICUS) Survey

- ✓ The RBI has been conducting the OBICUS survey on a quarterly basis since 2008.
- ✓ The survey provides an insight into the demands of the Indian manufacturing sector.
- ✓ It covers 2,500 companies both in the public and private sector.
- ✓ The survey represents the movements in actual data on order books, inventory levels of raw materials and finished goods and capacity utilization.

4. Industrial Outlook Survey (IOS)

- ✓ This survey tries to track the sentiments of the businessmen and businesswomen.
- ✓ The survey encapsulates qualitative assessment of the business climate by Indian manufacturing companies.

5. Services and Infrastructure Outlook Survey (SIOS)

- ✓ This survey does a qualitative assessment of how Indian companies in the services and infrastructure sectors view the current situation and the future prospects.
- ✓ The companies in the services space are far more optimistic than the companies in the infrastructure sector.

6. Bank Lending Survey (BLS)

- ✓ It captures the mood (qualitative assessment and expectations) of major scheduled commercial banks (SCBs) on credit parameters (loan demand and terms & conditions of loans) for major economic sectors.

7. Survey of Professional Forecasters (SPF)

- ✓ It is a survey of 42 professional forecasters (outside the RBI) on key macroeconomic indicators such as GDP growth rate and inflation rate in the current year and the next financial year.

News Snippets

Matti Banana	• Recently, the Matti banana variety, native to Kanniyakumari district was granted the Geographical Indication (GI) tag. • There are six known types of the Matti banana and they are indigenous to Kanniyakumari, where it thrives in the unique climate and soil. • They are also known as 'Baby Banana' which flourishes mainly in Kalkulam and Vilavancode taluks. • Unlike typical banana bunches that grow straight, the Matti's fingers exhibit a distinct wind-blown appearance. • Its low total soluble solids content (TSSC) recommends it as a baby food.
Mushkbudji Rice	• Recently, Mushkbudji Rice received the Geographical Indication (GI) tag. • It is short, bold aromatic rice grown in higher reaches of Kashmir valley. • The cooked rice is unique and possesses a harmonious blend of taste, aroma and rich organoleptic properties. • It is mainly grown in areas of Sagam, Panzgam and Soaf Shali of district Anantnag and Beerwah belt of district Budgam.
Government e-Marketplace (GeM)	• On 9th August, 2023, GeM marked its 7th Foundation Day as a landmark in India's procurement landscape. • Launched in 2016, GeM is the Public Procurement Portal for procurement of goods and services for all Central Government and State Government Ministries, Departments, Public Sector Units (PSUs) and affiliated. • A Special Purpose Vehicle (SPV) by the name of Government e- Marketplace (GeM SPV) was set up as the National Public Procurement Portal. • GeM's collaborations with more than 20 industry associations have been instrumental in fostering support for local Micro and Small Enterprises (MSEs) and small industries. • With nearly 6.5 million sellers and 70,000 government buyers registered on the platform as of July 2023, the cumulative GMV surpassed INR 4.5 lakh crore, showcasing the platform's enduring impact.
Foreign Exchange Reserves	• Recently, India's foreign exchange reserves have increased by $708 million to $602.161 billion. • India's foreign exchange reserves refer to assets held by the Reserve Bank of India (RBI) in foreign currencies. • It consists of foreign currency assets (FCA), gold, special drawing rights, and the International Monetary Fund (IMF) reserve position. • It acts as a cushion, provides liquidity and ensures to meet its external obligations. • It helps maintain stability of the nation's currency and economy. • It can fluctuate based on economic dynamics and financial conditions.
Rajmargyatra App	• Recently, the National Highways Authority of India (NHAI) launched the 'Rajmargyatra,' a citizen-centric unified mobile application. • It aims to create a seamless, user-friendly experience for highway users, fostering a safer and more enjoyable journey on Indian National Highways. • It serves as a one-stop repository of essential information for National Highway users. • The app comes equipped with an inbuilt complaint redressal and escalation mechanism. • It integrates its services with various bank portals, making it convenient for users to recharge their FASTags, avail monthly passes, and accesses other FASTag-related banking services – all within a single platform.

Space Science
- Aditya-L1 Mission Successfully Launched
- Perseid Meteor Shower Enchants Skywatchers
- ISRO Rocket Debris Found on Australian Shores
- Luna-25 Crashes on Moon

Defence Technology
- Defence Ministry Adopts OS "Maya" to Enhance Cybersecurity

New Technology & Innovations
- India's First Indigenously Developed MRI Scanner
- Acoustic Side Channel Attacks
- Muon's Peculiar Wobble Hints at Physics Mystery

Health & Disease
- PM2.5 Linked to Antibiotic Resistance
- Microplastics Detected in Human Hearts Raise Health Concerns

Government Policies/ Initiatives
- India Mandates Pharmaceutical Companies to Adopt Global Standards

Space Science

Aditya-L1 Mission Successfully Launched

On 2nd September, 2023, India celebrated a significant milestone as the Aditya-L1 solar mission was successfully launched from Sriharikota, marking the nation's first step toward achieving its solar mission goals.

- The mission aims to **explore the Sun and its corona.**
- The **major science objectives** of the mission are:
  - Understanding the Coronal Heating and Solar Wind Acceleration.
  - Understanding initiation of Coronal Mass Ejection (CME), flares and near-earth space weather.
  - To understand coupling and dynamics of the solar atmosphere.
  - To understand solar wind distribution and temperature anisotropy.
- In four months, the spacecraft will be **placed in its Halo orbit, L1**, which is considered closest to the Sun, where its seven payloads will study various aspects of the Sun.
- According to scientists, there are **five Lagrange points** (or parking areas) between the Earth and the Sun where a small object tends to stay if put there.
- These points in space can be used by spacecraft to remain there with **reduced fuel consumption.**
- The Sun emits a diverse range of radiations and particles, but Earth's protective atmosphere hinders ground-based observations.
- Solar storms have the potential to damage human technologies, including satellites and communication systems.
- Therefore, studying the Sun from space is essential for understanding solar phenomena and interplanetary dynamics **beyond Earth's protective shield.**
- The mission seeks to observe the Sun 24x7, a task not feasible from Earth's orbit due to frequent obstructions.
- Aditya L1 is equipped with two major instruments, **SUIT (Solar Ultraviolet Imaging Telescope) and VELC (Visible Emission Line Coronagraph),** along with five smaller instruments.
- SUIT captures **continuous ultraviolet images** of the Sun, crucial for studying the Sun's corona.
- VELC is a spectrograph focusing on the Sun's corona, extending beyond the visible disk.

Aditya L1's observations will aid in understanding the link between solar surface activities and high-energy particle emissions during solar storms.

Perseid Meteor Shower Enchants Skywatchers

The globally anticipated Perseid meteor shower illuminated the night skies in August, captivating stargazers eager to witness the spectacle of shooting stars.

- The Perseids are one of the **biggest meteor showers** and occur every year in the **late summer.**
- In 2023, the Earth entered the Perseids debris field on July 17. The shower continued through August 24 with a **peak on 12th and 13th August.**
- It is called a "Perseid" meteor shower because the meteors appear to originate from the **constellation of Perseus** - named after a figure from Greek mythology.
- Meteor showers happen when the **debris left behind by comets or asteroids** burns up in Earth's atmosphere.
- The phenomenon brings up to **100 meteors an hour**, as the Earth slams into the debris left behind from comet **109P/Swift-Tuttle.**
- As the debris hits the Earth's atmosphere, it burns up, resulting in the **bright flashes known as shooting stars**, which can be seen with the naked eye.

The Perseids can be observed from anywhere on Earth, but the best views are possible in the **Northern Hemisphere**, where the constellation Perseus is visible.

ISRO Rocket Debris Found on Australian Shores

Recently, the Australian Space Agency has confirmed that the object discovered on the western Australian shores is indeed debris from an Indian Space Research Organisation (ISRO) rocket.

- ISRO has concurred with the assessment, suggesting that the debris likely originates from one of its **Polar Satellite Launch Vehicle (PSLV)** rockets.
- The **Convention on International Liability for Damage Caused by Space Objects** (Liability Convention) is adhered to by most space-faring countries.
- This convention complements the **Outer Space Treaty**, a broader framework that governs countries' conduct in space.
- While the Liability Convention primarily addresses damage caused by space objects to other space assets, it also covers **damage inflicted by falling objects on Earth.**
- The launching country bears **"absolute liability" for compensating damage** resulting from its space object impacting Earth or an airborne flight.
- Compensation amount is determined according to international law and principles of justice and equity.
- **Canada sought damages from the Soviet Union** in 1978 when a satellite containing radioactive material fell into an uninhabited Canadian region.
- The Soviet Union reportedly paid 3 million Canadian dollars as compensation in this rare instance of claim.

If the debris had caused harm in Australia, India could have been held accountable for compensation, even if the object had fallen into the ocean before washing ashore.

Luna-25 Crashes on Moon

On 20th August, 2023, the Russian space agency, Roscosmos, issued a statement stating that the Luna-25 spacecraft had suffered a glitch and crashed on the moon's surface the previous day, ending the mission in a failure.

- Russia's Luna-25 developed problems during its attempt to enter a pre-landing orbit, leading to an emergency situation and loss of contact.
- Roscosmos reported that the deviation of impulse parameters caused Luna-25 to switch to an **off-design orbit** and collide with the lunar surface.
- Luna-25 was Russia's latest Moon mission, following the Soviet Union's last successful lunar landing in 1976 with Luna-24.
- China's **Chang'e-3, Chang'e-4, and Chang'e-5**, as well as India's Chandrayaan-3 represent significant contributions to lunar exploration since Luna-24's landing.

Luna-25's unfortunate crash underscores the challenges and importance of successful lunar landings.

Defence Technology

Defence Ministry Adopts OS "Maya" to Enhance Cybersecurity

Recently, India's Defence Ministry took a significant step towards bolstering its cybersecurity by replacing Microsoft Operating System (OS) with the locally developed Ubuntu-based OS named "Maya," aimed at preventing cyberattacks on critical infrastructure and government agencies.

- "Maya" is based on the **open-source Ubuntu platform** and boasts an interface and functionalities comparable to Windows, ensuring a seamless transition for users.
- Alongside the OS transition, a robust 'end point detection and protection system' named **"Chakravyuh"** is being deployed on these systems to further fortify their security.
- While "Maya" is presently being incorporated solely within the Defence Ministry's systems, it is anticipated to extend to the **networks of the three Services** in the near future.
- The **Indian Navy** has already approved the adoption of "Maya," while the Army and the Air Force are in the evaluation phase before its implementation on their respective networks.
- Developed by India, "Maya" was created within a short span of six months, showcasing rapid **indigenous technology development**.
- The primary objective of "Maya" is to **enhance cybersecurity defences** by mitigating the risks of malware attacks and cyber intrusions that have exhibited a significant surge recently.
- India has experienced various instances of malware and ransom attacks, including those targeting critical infrastructure assets.
- Previous efforts within the Defence Ministry aimed to replace the Windows OS with an indigenous alternative, aligning with the government's push for **self-reliance in technology**.

The adoption of "Maya" underscores the nation's commitment to strengthening its cyber resilience and safeguarding its vital defence and infrastructure assets.

New Technology & Innovations

India's First Indigenously Developed MRI Scanner

Recently, India's first indigenously developed magnetic resonance imaging (MRI) scanner was launched. It has been developed by a Bengaluru-based company with the

aim to alleviate helium shortage by avoiding reliance on liquid helium, offering cost-effective and more accessible imaging solutions.

- **Helium shortage** since 2006 has been impacting MRI scanners, affecting diagnostic facilities globally.
- The homegrown MRI scanner **utilizes liquid nitrogen for cooling**, reducing dependence on scarce helium.
- The scanner's magnets can be rapidly cooled with liquid nitrogen, ensuring functionality without helium constraints.
- Despite being a definitive imaging tool, MRI remains inaccessible to many Indians due to scarcity and high costs.
- This indigenous MRI scanner, equipped with **1.5T magnets,** will be **40% cheaper** than existing market options.
- Customized software design enabled the development of custom hardware, including specialized magnets.
- The scanner's software facilitates faster scans, potentially **reducing scan time for patients.**
- The scanner is lighter in weight, **allowing mobility and transport** to healthcare settings.

India has about 4,500 MRI scanners, a third of the required number for the population. The indigenous MRI scanner offers a solution to the helium shortage crisis ensuring widespread accessibility and affordability.

Acoustic Side Channel Attacks

Recently, a research paper, titled "A Practical Deep Learning-Based Acoustic Side Channel Attack on Keyboards," revealed that Artificial Intelligence (AI) can be used to decode passwords by analysing the sound produced by keystrokes.

- The study highlighted the accuracy of Acoustic Side Channel Attacks (ASCA) when **state-of-the-art deep learning models** were used to classify laptop keystrokes and their mitigation.
- In an ASCA, the sound of clicks generated by a keyboard is used to analyse keystrokes and interpret what is being typed to leak sensitive information.
- ASCA attacks are not new and have been around since 1950 when **acoustic emanations of encryption devices** were used to crack their security.
- Additionally, the United States National Security Agency (NSA) declassified documents listed acoustic emanations as a source of compromise in 1982.
- Modern technology has increased the number of microphones in proximity to keyboards, making it easier to collect and analyze acoustic data.

Using **touch-based typing** can make it harder for threat actors to recognize keystrokes. Changing typing styles and creating complex passwords with a mix of upper and lowercase letters can also thwart ASCAs.

Muon's Peculiar Wobble Hints at Physics Mystery

In a recent US laboratory experiment, the intriguing irregular movement of a subatomic particle known as a muon is prompting scientists to consider the possibility of an unknown particle or force that could challenge current understanding in physics.

- **Muons are akin to electrons** but significantly more massive, wobbling as they traverse magnetic fields due to their inherent tiny internal magnet.
- The experiment's focus was on studying the speed of **muon wobble**, technically termed **"precession,"** when subjected to magnetic fields.
- However, the experiment's observed wobble speed substantially differed from predictions based on the **Standard Model of particle physics**, raising questions about the theory's comprehensiveness.
- The latest findings, building on earlier data from 2021, continue to suggest an unexplained factor influencing muon behaviour and prompting researchers to search for novel explanations.
- The discrepancy between **theoretical predictions and experimental outcomes** points towards the possibility of uncharted particles or forces that interact with muons in unforeseen ways.
- The experiment was conducted at **extremely low temperatures** of minus 450 degrees Fahrenheit, with muons directed into a circular superconducting magnetic storage ring.
- The interaction of muons with other subatomic particles within the ring, resulting in altered wobble patterns, provided insights into their behaviour.
- The experiment's purpose was to measure the rotational speed of muons within a magnetic field, a process that demands meticulous data collection over several years.

While the experiment's outcome aligns with prior results, discrepancies between differing predictions spark curiosity and contemplation regarding fundamental aspects of physics.

Health & Disease

PM2.5 Linked to Antibiotic Resistance

A recently published study has established a connection between fine particulate matter (PM2.5) air pollution and antibiotic resistance, with potential significant impact on regions like Africa and Asia.

- **Africa and Asia** are projected to face the most significant increase in antibiotic resistance due to PM2.5 pollution.
- Air pollution causes approximately 7 million global deaths annually.
- A **10% PM2.5 increase could result in 1.1% aggregate antibiotic resistance** and 43,654 premature deaths worldwide.
- Countries like **Saudi Arabia, Niger, UAE, Pakistan, Nigeria, India, Cameroon, Bahrain, and China** could see antibiotic resistance rise.

- **China and India's** large populations make them particularly vulnerable to PM2.5-related antibiotic resistance.
- The study highlights new pathway for antimicrobial resistance (AMR) spread through air pollution.
- Achieving World Health Organization's (WHO) PM2.5 air quality guideline by 2050 could reduce antibiotic resistance by 16.8% and save $640 billion.

WHO's guidelines for lower air pollutant levels offer protection against health impacts and aid climate mitigation.

Microplastics Detected in Human Hearts Raise Health Concerns

Recently, a study by Chinese scientists revealed the presence of microplastics in human hearts for the first time.

- The research team examined **heart tissue samples** from 15 patients who had undergone cardiovascular surgery.
- The study uncovered individual microplastic pieces in the majority of tissue samples, with microplastic samples detected in all blood samples as well.
- The discovery raises questions about **how microplastics enter cardiac tissues** and their potential long-term effects on patients after heart surgery.
- The analysis identified various types of microplastics, including **Polyethylene terephthalate** used in clothing and food containers, as well as **polyvinyl chloride (PVC)** commonly found in window frames, drainage pipes, and paint.
- Microplastics, which can be **smaller than 5 millimeters**, can enter the human body through multiple pathways such as the mouth and nose.
- These tiny particles have been associated with health issues like **obesity, diabetes, and chronic liver disease** due to their effects on the gastrointestinal tract.

The presence of microplastics in human hearts is alarming and underscores the growing concern over the ubiquity of plastic pollution in the environment. The ability of these minuscule plastic particles to infiltrate vital organs poses potential risks to human health that warrant further investigation.

Government Policies/ Initiatives

India Mandates Pharmaceutical Companies to Adopt Global Standards

Recently, Government of India instructed all pharmaceutical firms to implement revised Good Manufacturing Practices (GMP), fostering India's role as a global hub for generic medicine production.

- The government issued the directive to bring the pharmaceutical manufacturing processes **in line with global standards.**
- Larger pharmaceutical companies with a turnover **exceeding Rs 250 crore** are required to implement the updated GMP within six months.
- **Medium and small-scale enterprises** with a turnover below Rs 250 crore have been given a timeframe of one year to make the necessary changes.
- This directive coincides with India's efforts to establish itself as a prominent global manufacturing centre for generic medicines.
- The process of pharmaceutical development involves **obtaining patents for new drugs**, preventing others from producing the same drug for a specific period.
- To recoup research and development costs, companies usually price branded drugs higher, but after patent expiration, **generic versions** can be produced.
- Generic drugs are more affordable as they skip extensive clinical trials, leading to reduced development costs.
- The molecular structure of generic drugs is the same as branded drugs, ensuring similar quality and effectiveness due to the shared **"active ingredient."**
- While the active ingredient remains consistent, inert ingredients—providing colour, shape, or taste—may differ between brand-name and generic versions.

The Indian government's directive to pharmaceutical companies to implement revised Good Manufacturing Practices reflects a commitment to global standards, bolstering India's standing as a major player in the production of cost-effective generic medicines.

Miscellaneous

Global Summit Unites Traditional Medicine and Modern Science

On 17th and 18th August, 2023, World Health Organisation's (WHO's) inaugural Global Summit for Traditional Medicine was held in Gandhinagar, Gujarat. The summit emphasized the fusion of ancient wisdom and contemporary science for holistic well-being.

- The theme **"Towards Health and Well-being for All"** set the tone for the two-day summit exploring traditional complementary and integrative medicine's role in global health challenges.
- The WHO's Global Centre for Traditional Medicine in Jamnagar was commended for merging ancient wisdom and modern science to enhance global health.
- **Gujarat Declaration**, the outcome of summit, will integrate use of traditional medicines in national health systems, and help unlock the power of traditional medicine through science.
- Gandhinagar's significance as a backdrop for the summit, given its association with **Mahatma Gandhi and Sardar Vallabhbhai Patel,** was noted.
- Traditional medicine encompasses knowledge, skills, and practices rooted in cultural theories, beliefs, and experiences, used for health maintenance, prevention, diagnosis, and treatment.

- Traditional and complementary medicine has been a historical resource for health in households and communities, forming an integral part of healthcare for centuries.
- **Herbal medicines, acupuncture, yoga, and indigenous therapies** are embraced in 170 out of WHO's 194 Member States, highlighting global recognition.
- Modern demand for traditional medicine is growing, driven by patients seeking personalized and compassionate healthcare, particularly in remote and rural areas.
- Traditional medicine is often the primary choice for health and well-being, providing culturally acceptable, accessible, and affordable care.
- WHO's work on traditional medicine responds to countries' requests for evidence, data, global standards, and regulations to ensure safety, quality, and equitable access.
- The **Declaration of Astana,** endorsed at the Global Conference on Primary Health Care in Astana (2018), emphasizes integrating traditional medicine into primary health care to achieve health for all.

Traditional, complementary, and integrative medicine (TCIM) practices vary across countries and contribute to health, well-being, people-centered care, and universal health coverage.

New Lotus Variety with 108 Petals

On 19th August, 2023, Union Science and Technology Minister revealed a novel lotus flower variety named "Namoh 108," characterized by its 108 petals, developed by the National Botanical Research Institute (NBRI), Lucknow.

- The lotus variety "NBRI Namoh 108" blooms **from March to December** and is the **first flower whose entire genome has been sequenced** to understand its unique characteristics.
- The lotus variety was **discovered several years ago in Manipur** and kept at the institute as part of its collection of flowers and plants, on which the institute conducts research.
- This development highlights the **intersection of science and tradition** in India's quest for unique and diverse plant species.
- The **National Botanical Research Institute (NBRI)** is a constituent institution of the Council of Scientific and Industrial Research (CSIR).
- Additionally, the Minister introduced **clothing crafted from lotus fiber** and a fragrance **called 'Frotus,' extracted from lotus flowers**. These innovations are part of the Lotus Research Program developed in collaboration with the Fragrance and Flavour Development Centre, Kannauj.
- Lotus fiber clothing and 'Frotus' fragrance represent innovative applications of lotus plants in various industries, showcasing the potential of indigenous flora in modern contexts.

CSIR-NBRI would be initiating a 'Lotus Mission' as part of a larger ongoing horticultural mission to have more of the 108 Namo flowers grow in other parts of India.

News Snippets

Fediverse	• The fediverse is a group of federated social networking services that work on decentralised networks operated using open-source standards. • Essentially, the fediverse is a network of servers run by third parties. • These servers are not controlled by any one entity and can be used by any member of social media platforms to facilitate communication between their users. • While Meta's Threads plans to join the fediverse, other platforms which currently make use of it include Pixelfed, a photo-sharing platform like Instagram; PeerTube, a decentralised video-sharing platform, Lemmy, Diaspora, Movim, Prismo WriteFreely, and others. • One of the main reasons for social media platforms to use the fediverse is to tap into its decentralised nature. • This allows users more control over the content they want to view, and the accounts they want to interact with along with the ability to enable cross-platform communications.
Cosmic Rays and Earth's Defence	• Recently, HAWC Observatory in Mexico that detects TeV-energy gamma rays from the sun recorded higher-than-expected high-energy gamma rays. • Existing models of the sun's magnetic field and atmosphere cannot explain the excess energy. • Energetic cosmic rays constantly bombard Earth from space. • Earth's atmosphere and magnetic field shield the planet from direct impact. • Cosmic rays originate from large galaxy centres and supernovae explosions. • LHAASO facility in China and Southern Wide-field Gamma-ray Observatory in South America will further study gamma rays.
World-Coin	• WorldCoin is a new cryptocurrency project created by Sam Altman, CEO of OpenAI. • The project witnessed over 2 million sign-ups globally within a week of its launch on July 24, 2023. • WorldCoin uses biometrics for sign-up, involving iris scanning. • It aims to establish the world's largest identity and financial public network. • World ID: It provides a verified digital identity. • Worldcoin Token (WLD): It is the cryptocurrency of the platform.

Ophidascaris robertsi	• A remarkable medical breakthrough has startled the medical community when it was discovered that an Australian woman had a live 8cm (3in) worm (Ophidascaris robertsi) in her brain, marking an unprecedented occurrence in human medicine. • This discovery came to light during diagnosis of the patient's deteriorating health, marked by symptoms such as stomach pain, cough, night sweats, and other concerning issues. • Typically, these parasites reside in the esophagus and stomach of pythons and release their eggs through the host's feces. They are known for their ability to thrive in diverse environments. • While these parasites usually affect small mammals and marsupials consumed by pythons, the Australian woman's case was a unique exception with the worm found in her brain. • The increasing overlap between human and animal habitats underscores the importance of raising awareness and taking proactive measures to prevent the spread of zoonotic diseases.
Agnibaan SOrTeD	• Chennai-based space-tech startup Agnikul Cosmos has announced a significant development in its rocket technology. • It marks a crucial step toward a proposed suborbital space flight. • 'Agnibaan SOrTeD' is a single-stage launch vehicle powered by Agnikul's patented Agnilet engine. • The Agnilet engine propelling 'Agnibaan SOrTeD' is a remarkable piece of technology, being entirely 3D-printed and a single-piece design, capable of delivering 6kN of thrust in a semi-cryogenic environment. • This rocket will initiate its flight with a vertical liftoff and then follow a pre-planned trajectory while executing precise maneuvers mid-flight. • Agnikul's innovative approach to rocket launch is exemplified by the vertical liftoff strategy, which is different from traditional rockets that typically use guide rails.
Genetic Puzzle of Y Chromosome	• Scientists have achieved a significant milestone in unraveling the human genome by completely decoding the elusive Y chromosome found in males. • Sequencing the Y chromosome will provide deeper insights into the genetic aspects linked to male infertility and other Y chromosome-related health conditions. • The improved Y reference sequence precision will make it easier to investigate disorders associated with this chromosome. • Ultimately, this could lead to more precise and efficient treatments and preventive strategies for diseases like cancer and cardiovascular disorders.
Code Llama	• Meta has launched "Code Llama," an AI-powered tool. • It aids coders and IT engineers in generating and debugging human-written code. • This tool directly competes with OpenAI's ChatGPT, which is widely used for similar purposes. • "Code Llama" works with popular programming languages like Python, Java, and C++. • It has the potential to streamline software development by automating code generation and assisting with debugging. • Integration into development workflows can boost coding efficiency and productivity.
Respiratory Syncytial Virus (RSV)	• The US Food and Drug Administration (FDA) granted approval for the first vaccine designed to safeguard newborns from Respiratory Syncytial Virus (RSV). • Respiratory Syncytial Virus (RSV) primarily affects the lungs and respiratory tract, posing a significant risk to children and the elderly. • Pfizer's newly approved vaccine is intended to safeguard newborns by administering it to mothers during the latter stages of pregnancy. • This approach ensures protection for infants during their critical first six months of life.
QakBot Malware Network	• Recently, a global malware network used for ransomware attacks was taken down by the FBI and European law enforcement agencies. • QakBot, a well-known Windows malware, managed to infiltrate and control over 700,000 computers on a global scale, where it conducted financial fraud and distributed ransomware. • Operation Duck Hunt represents a collaborative international endeavour that brought together law enforcement bodies from the United States, France, Germany, Latvia, Romania, the Netherlands, and the United Kingdom to fight the malware. • The operation successfully confiscated cryptocurrency profits exceeding $8.6 million, which had been illicitly acquired through various unlawful activities.
Maisie's Galaxy	• Last year, the James Webb Space Telescope identified a galaxy that has now been revealed as the most ancient ever observed. • This galaxy is among the earliest known, originating roughly 390 million years following the Big Bang. • Maisie's Galaxy, validated through spectroscopic analysis in the JWST's Cosmic Evolution Early Release Science Survey (CEERS), has acquired one of the earliest confirmed redshifts, affirming its age. • This breakthrough offers significant knowledge about the universe's initial phases and enhances our comprehension of the evolution of the cosmos.

Sustainable Development

- India's Greenhouse Emissions Drop 33%
- Yamuna River's Water Quality Shows Improvement
- Japan Releases Nuclear Wastewater into Pacific Ocean

Biodiversity

- India's Tiger Population Distribution Raises Conservation Concerns
- Italy Allocates Funds for Invasive Crab

Climate Change

- Antarctic Sea Ice Hits Record Low
- Hawaii Devastated by Large-Scale Wildfires
- Rising Waves Signal Climate Impact
- Great Barrier Reef: Serious Threat Remains
- Deterioration of Gulf of Eilat Coral Reefs

Disaster Management

- China's "Sponge Cities" and Flood Vulnerability
- CWC Launches 'Floodwatch' App for Advanced Flood Forecasting

Sustainable Development

India's Greenhouse Emissions Drop 33%

According to a latest assessment made for submission to the United Nations, India's greenhouse gas emissions have fallen by 33% in 14 years, surpassing expectations, due to increased renewable energy generation and expanded forest cover.

- The reduction in emissions intensity **aligns with India's commitment to the UN Convention on Climate Change** to decrease emissions intensity by 45% from the 2005 level by 2030.
- India's emissions intensity fell by 33% from 2005 to 2019, indicating progress in decoupling economic growth from greenhouse gas emissions.
- India's average rate of reduction in emissions increased to 3% annually in the period 2016-2019, from just about 1.5% in the period 2014-2016.
- The growth of **non-fossil power generation and initiatives targeting emissions** in industrial, automotive, and energy sectors contributed to the reduction.
- As of 2019, forests and trees covered 24.56% of India's geographical area. The expansion of forest cover and promotion of green hydrogen production further aided emissions reduction.
- Non-fossil fuel-based power, including hydro, nuclear, and renewables, constituted 25.3% of India's total power generation.

Developing countries, including India, emphasize the need for developed nations to curb their extensive fossil fuel consumption. The progress in emissions reduction should help India resist international pressure to abandon coal usage.

Yamuna River's Water Quality Shows Improvement

Recently, heavy rainfall in the catchment areas and increased water flow due to spate conditions led to improved water quality in the Yamuna River. However, water quality standards are still not met at several points.

- A **Delhi Pollution Control Committee (DPCC)** report reveals that despite improved conditions, the Yamuna River's water quality falls short of desired levels at eight testing points in Delhi.
- **Dissolved oxygen levels,** a critical indicator of water quality, have increased at all eight points, but remain below the required levels.
- The levels of dissolved oxygen downstream of Wazirabad are still below the required standards set by the Central Pollution Control Board (CPCB).
- Despite increased water flow, other water quality parameters such as **biochemical oxygen demand (BOD) and faecal coliform levels** do not meet standards.
- The BOD levels remain **above the standard of 3 mg/litre** at seven of the eight sampling points.
- The faecal coliform levels have decreased from previous months but still exceed the permissible limit.

Rejuvenation efforts could lead to the resurgence of biotic communities like phytoplankton, zooplankton, aquatic plants, fish, and molluscs in the river.

Japan Releases Nuclear Wastewater into Pacific Ocean

On 24th August, 2023, Japan initiated the release of treated radioactive wastewater from the damaged Fukushima power plant into the Pacific Ocean, sparking debates about safety and environmental impact.

- **International Atomic Energy Agency** (IAEA), UN's atomic energy regulator, said the water will have "negligible" radiological impact on people and the environment.
- Protests arose in Japan and South Korea due to the release.
- The water has been stored in over 1,000 tanks after the **2011 earthquake and tsunami** caused a nuclear meltdown.

- Japan cites the need to repurpose land occupied by tanks and concerns about tank collapse as reasons for the release.
- The **release has IAEA approval** and will occur gradually over several years.
- Experts suggest that the release is safe due to low tritium levels and adherence to international limits.
- **Tritium is a form of hydrogen** that occurs naturally in Earth's atmosphere. It is radioactive but far less dangerous than cesium-137 or strontium-90 — both of which are life-threatening.
- Some scientists argue for further studies on the potential impacts of the release of wastewater on marine life and humans.
- Concerns about the impact on ocean currents, seafood, are expressed.

The Pacific Islands Forum Chair believes the release meets international safety standards and calls for 'assessing the science'.

Biodiversity

India's Tiger Population Distribution Raises Conservation Concerns

The recent All-India Tiger Estimation (AITE) report has highlighted concerns about the uneven distribution of tigers across Indian reserves.

- Around **20% of India's tiger habitat**, spanning **16 reserves**, houses less than 1% of the nation's total tiger count.
- In the latest report, the Management Effectiveness Evaluation (MEE) — a "comprehensive, system-wide, peer-based" assessment on 33 parameters — scored nine of these 16 reserves as 'Very Good' (above 75%) or 'Good' (60-74%).
- While two were notified after the MEE exercise, the remaining five reserves were scored 'Fair' (50-59%).
- Despite a net gain of 715 tigers in the latest AITE report, the **skewed distribution raises caution against over-optimism.**
- This concentrated presence of tigers in certain reserves underscores the need for **targeted conservation efforts and preservation of genetic diversity.**
- The trends also reveal challenges in specific regions, including **Jharkhand, Odisha, Chhattisgarh, and parts of the Northeast.**
- Experts emphasize the necessity of **investing in habitat protection, ensuring prey availability,** and possibly considering reintroduction efforts to address these challenges.
- Furthermore, these disparities signify the importance of maintaining balanced tiger populations for long-term genetic health and ecological stability.

The dynamic parts of the tiger range, even with low-density populations, play a crucial role in maintaining gene flow and connectivity between source populations.

Italy Allocates Funds for Invasive Crab

Recently, Italy designated $3.2 million to address the proliferation of the aggressive "blue crab" species, which poses a threat to the country's clam production. The funding aims to support efforts to control the blue crab population.

- The **blue crab (Callinectes sapidus), originally from the western Atlantic**, has rapidly spread across several lagoon-like areas in Italy, harming local shellfish, fish roe, and aquatic ecosystems.
- The **blue crab has been preying on local shellfish** and disrupting aquatic ecosystems. It is unclear why these crabs are multiplying so quickly, and whether climate change is a contributing factor.
- The fund will be distributed to fishing cooperatives and aqua-farmers conducting large-scale crab removal efforts.
- Italy is **Europe's largest clam producer** and ranks third globally after China and South Korea, according to UN Food and Agriculture Organization data from 2021.
- Italy's clam production is vital for its culinary traditions and seafood industry. Italy is known for dishes like "spaghetti alle vongole" (spaghetti with clams), a staple of Italian cuisine.

The blue crab's invasion has **threatened the aquafarm industry** and aquatic ecosystems in affected areas. The Italian government's allocation of funds reflects the severity of the blue crab invasion.

Vaquita Porpoise Faces Crisis

Recently, the International Whaling Commission (IWC) issued an alarming alert regarding the critically endangered vaquita porpoise's perilous situation.

- The vaquita (Phocoena sinus), the **smallest porpoise native to Mexico's Gulf of California**, is on the brink of extinction due to illegal gill net fishing for the valuable totoaba fish bladder.
- They are the **world's smallest cetaceans**. They are only distant relatives of dolphins.
- IWC's scientific report reveals an 83% decline in the vaquita population from 2015 to 2018, leaving only 9 or 10 individuals.
- Replacing gillnets with alternative fishing methods is essential for both vaquita survival and fishermen's livelihoods.
- The alert highlights the need for a new mechanism to address extinction concerns for various cetacean species.

*The **International Whaling Commission (IWC)** was established in 1946 as the global body responsible for management of whaling and conservation of whales. Today the IWC has 88 member countries.*

India's Unique Birds: A Conservation Call

A recent Zoological Survey of India (ZSI) publication underscored the significance of endemic birds in India, where 5% of the bird species are exclusive to the country, prompting a plea for their conservation.

- ZSI publication titled **"75 Endemic Birds of India"** highlights the critical role of endemic species in the country's biodiversity.
- India is home to 1,353 bird species, with 78 (5%) being endemic. **25 endemic species** are classified as '**Threatened'** by the International Union for Conservation of Nature (IUCN).
- **Five of the endemic birds** in India are categorised as **'Endangered',** and **17 as 'Vulnerable',** while **11** are categorised as **'Near Threatened'** on the IUCN Red List of Threatened Species.
- Three of these species—**Manipur Bush Quail, Himalayan Quail, and Jerdon's Courser**—are critically endangered and face extinction.
- Endemic species are found across 11 orders, 31 families, and 55 genera, displaying diverse distribution patterns.
- The **Western Ghats** hold the highest number of endemic species, particularly unique bird varieties.
- **Andaman and Nicobar Islands** showcase 25 endemic species, a result of geographical isolation.

The publication offers insights into scientific names, historical context, traits, habitats, breeding habits, and more. It underscores the urgency of preserving India's endemic bird species, highlighting their unique contributions to the country's biodiversity.

New Salamander Species Discovered in Manipur

A recently published study has recorded a new species of salamander — the Tylototriton zaimeng — in the Zaimeng Lake within the Koubru Forest Division in Kangpokpi district of Manipur.

A scientific expedition to Manipur's Khongtheng mountain range in 2022 led to the revelation of the previously unknown amphibian species.

- The discovery is significant as it emerges from Kangpokpi district, which has been severely affected by ethnic violence since May.
- The name "zaimeng" originates from the Liangmai Naga dialect, translating to "**puzzle" or "mystery."**
- The discovery of T. zaimeng followed an **integrative taxonomic analysis** that combined molecular research and morphological examination.
- This approach enabled the differentiation of the new species from its close relatives, T. himalayanus and T. verrucosus.
- T. zaimeng exhibits distinctive characteristics, such as a **massive and wide head** with protruding bony ridges, along with a well-developed sagittal ridge.
- Its limbs are elegantly shaped, and a unique vertebral ridge runs along its back with rib nodules.
- The salamander displays a remarkable **brown colour** adorned with orange to yellowish-brown markings on various parts of its body.
- Its teeth, organized in a distinct curved bell-shaped pattern, add to its unique appearance.

The researchers recommend that T. zaimeng be included in the **International Union for Conservation of Nature (IUCN) Red List as a 'Vulnerable' species.** This emphasizes the importance of conservation initiatives to safeguard both the newly discovered species and its delicate habitat.

Climate Change

Antarctic Sea Ice Hits Record Low

According to a recent study, Antarctic sea ice has reached a record low due to rising global temperatures, with no quick solution to reverse the damage.

- The continent's minimum summer ice cover fell to a new low in February, following a drop below 2 million square kilometers in 2022.
- This year's sea ice minimum is **20% lower than the 40-year average**, equivalent to nearly 10 times the size of New Zealand.
- Global warming from fossil fuel consumption has made Antarctica more **susceptible to extreme events.**
- Climate change will lead to **increased heatwaves, ice shelf collapses, and sea ice declines.**
- An **"atmospheric river"** from Australia caused unprecedented temperatures up to 38.5°C above normal in Antarctica last year.
- If such an event occurred during the Antarctic summer, it could trigger **ice sheet melting.**
- Antarctica's environment is fragile, and extreme events test its resilience.
- Concerns are rising about the **increasing intensity and frequency of extreme events** in the region.
- The study highlights the virtually certain worsening impact of climate change on Antarctica.

Rising global temperatures are having significant consequences for the continent and surrounding ocean. However, the rapid decline in sea ice indicates the intensification of extreme events.

Hawaii Devastated by Large-Scale Wildfires

Recently, Hawaii, renowned for its natural beauty and tourist appeal, faced large-scale wildfires that began on August 9, 2023.

- The fires have led to the destruction of over 675 acres of land and significant damage to the town of Lahaina.
- **Lahaina,** once the capital of the Hawaiian kingdom, holds historical significance as a royal residence and the site of important events in Hawaiian history.
- The extent of the wildfires is attributed to **dry weather conditions and strong winds**, exacerbated by a passing hurricane.
- Hawaii has experienced long-term declines in average annual rainfall, thinner cloud cover, and drought conditions in recent years.
- **Invasive grass species**, originally introduced as livestock forage, now cover almost a quarter of Hawaii's landmass, posing a significant fire risk.
- **Non-native trees, such as mesquite and pines**, planted for erosion control and timber, add to wildfire risks.
- Authorities can mitigate these risks by building firebreaks, introducing fire-resistant vegetation, and employing livestock to manage grass levels.

Climate change and the increasing frequency and intensity of drought conditions could lead to more frequent wildfires in Hawaii in the future, as noted in a hazard mitigation plan. Additionally, language barriers among vulnerable populations could hinder timely responses to hazard events.

Rising Waves Signal Climate Impact

Currently, California's coast is witnessing increasing wave heights, with research revealing that surf reaching up to 13 feet is more frequent due to global warming.

- Innovative research using seismic records from 1931 onwards tracks rising wave heights in California.
- The method involves analyzing seismic impacts caused by waves **colliding off the shore and their ripple effects on seafloor.**
- Increased wave impacts lead to concerns about **coastal erosion, flooding, and infrastructure damage.**
- The findings indicate a connection between more **extreme storms, sea level rise, and increasing wave power.**
- Ongoing changes in waves are consistent with the **accelerating warming trend.**

Scientists predict rising sea levels and intensified storms will lead to more coastal damage and instability. The study suggests that even moderate waves may cause substantial damage due to sea level rise.

Great Barrier Reef: Serious Threat Remains

Recently, a UNESCO report cautioned that the iconic reef in Australia still faces significant risks from pollution and ocean warming.

- UNESCO heritage committee refrained from labelling the Great Barrier Reef as "in danger" but underscores it remains under "**serious threat."**
- Earlier, UNESCO had suggested listing the reef as "in danger" due to frequent coral bleaching incidents.
- Australia aims to keep the reef off the **endangered list** due to economic and tourism considerations.
- The reef contributes about **6 billion Australian dollars** to the economy and supports 64,000 jobs.
- The recent report acknowledges Australia's efforts to preserve the reef and cites **"significant progress"** in climate change, water quality, and sustainable fishing.
- World Wide Fund for Nature-Australia warns that the reef might be added to the endangered list if progress isn't demonstrated.

The Great Barrier Reef's status remains in a critical balance, with efforts required to mitigate pollution and ocean warming risks to ensure its long-term health and preservation.

Deterioration of Gulf of Eilat Coral Reefs

According to the recently published Israel National Monitoring Program report, the coral reefs in the Gulf of Eilat/Aqaba are experiencing ongoing deterioration, attributed to multiple factors including warming seas, pollution, storms, and diseases.

- **Red Sea warming, underwater pollutants, extreme storms, and disease outbreaks** are contributing to the ecosystem decline.
- Development at the **Red Sea resort, including artificial lighting,** impacts the marine ecosystem.
- **Expansion of Eilat's desalination plant** could increase nitrogen and brine discharge, raising environmental concerns.
- A severe **2020 winter storm damaged coral reefs**, causing a 6%-22% loss of living cover in surveyed sites.
- Coral cover decreased by 1.5% in 2021, with some recovery observed in 2022.
- Gulf of Eilat houses one of the **northernmost coral reefs,** facing accelerated warming since 1988 (2.5 times higher than global average).
- Rising seawater temperatures and acidity worsen the reef's vulnerability to pollution, oil spills, and irresponsible development.

The deterioration of Gulf of Eilat's coral reefs underscores the urgent need for preservation efforts and informed policy decisions.

Climate Change Threatens Sacred Shaligrams in the Himalayas

According to recent studies, the revered practice of collecting and worshipping Shaligrams, ancient fossils of ammonites, is under threat due to climate change and river course alterations in the Kali Gandaki River Valley of Mustang, Nepal.

- Shaligrams have been venerated in **Hinduism, Buddhism, and the Himalayan religion of Bon** for over 2,000 years.

- Shaligrams are considered **manifestations of the Hindu god Vishnu** and are believed to have intrinsic consciousness due to their natural formation.
- Pilgrims undertake a **ritualistic Shaligram pilgrimage**, collecting these fossils from the Kali Gandaki River, viewed as the embodiment of the goddess Tulsi and god Vishnu.
- Climate change and gravel mining are altering the **course of the Kali Gandaki River,** affecting the presence of Shaligrams.
- The Kali Gandaki's glacier meltwater is decreasing, leading to fewer ammonites and, consequently, fewer Shaligrams.

Climate change's impact on the Kali Gandaki riverbed endangers the Shaligram pilgrimage's future. Pilgrims continue to collect Shaligrams, but their scarcity raises concerns about the tradition's sustainability.

Europe Grapples with Escalating Heatwaves

Currently, Europe is grappling with scorching temperatures as wildfires rage from the Mediterranean to Spain.

The escalating intensity and frequency of these heatwaves are driven by climate change, according to the Intergovernmental Panel on Climate Change (IPCC).

- Climate change is driven by **increased greenhouse gas emissions** from human activities.
- The global temperature has risen by about **1.2 degrees Celsius** since pre-industrial times due to these emissions.
- This **warmer baseline** intensifies the frequency and severity of heatwaves.
- **"Attribution studies"** help scientists determine the role of climate change in specific heatwaves.
- For instance, a **2019 heatwave in Western Europe** was 100 times more likely due to human-induced climate change.
- Heatwaves are projected to worsen as global temperatures continue to rise.
- Climate change also exacerbates **wildfires** by creating hot and dry conditions.
- Over 90% of European wildfires result from human activities like arson and negligence.
- Drastic reductions in greenhouse gas emissions are crucial to mitigate heatwaves, wildfires, and other climate-related crises.

Experts warn that if greenhouse gas emissions are not significantly reduced, future heatwaves and wildfires may surpass the current crisis in severity.

Rising Sea Levels and Climate Hazards Threaten Pacific Islands

On 18th August, 2023, the World Meteorological Organization (WMO) released the 'State of Climate in the South-West Pacific, 2022' report which issued a stark warning, stating that sea levels around Pacific Islands are rising at a rate of about 4 mm per year, slightly above the global average.

- **Low-lying islands, including Tuvalu and the Solomon Islands**, are under severe threat due to these rising sea levels.
- The potential consequences include devastating floods and the destruction of agricultural lands and habitable areas.
- The report also highlights the occurrence of **marine heatwaves in a large area northeast of Australia and south of Papua New Guinea** over a period of more than six months.
- These heatwaves have had a significant **impact on marine life and the livelihoods** of local communities.
- **El Nino is associated with higher temperatures**, disruptive weather patterns, and more frequent marine heatwaves and coral bleaching.
- The report revealed that the region experienced 35 natural hazards in the previous year, including floods and storms.
- Despite a decrease in the number of reported weather events compared to the previous year, economic losses due to flooding and weather events have increased.

The findings of the WMO report underscore the urgent need for comprehensive climate action to mitigate these impacts and protect vulnerable island nations in the Pacific.

NOAA Warns of Heightened Atlantic Hurricane Season

Recently, the National Oceanic and Atmospheric Administration (NOAA) of the United States raised concerns about the upcoming Atlantic hurricane season, citing exceptionally warm ocean temperatures and delayed El Nino effects as potential drivers of increased storm activity.

- NOAA has increased its prediction for an **above-normal hurricane season** from 30% in May to 60% now.
- The chance for a normal hurricane season has decreased to 25%.
- Major hurricanes with winds exceeding 110 mph are expected to be between two to five, one more than earlier forecasts (normal: three).
- The **Accumulated Cyclone Energy measurement**, which assesses storm strength and duration, is projected to be double the normal level for the year.
- The North Atlantic's record warm temperatures, linked to climate change, play a significant role in these predictions.
- The main storm development region in the **Atlantic, between Africa and the Caribbean**, has water temperatures 2.2 degrees above normal.
- **Warm water serves as fuel for hurricanes**, making them more humid, moist, and powerful.

El Nino, known for reducing storm activity, has been slow to exert its influence in the Atlantic and Gulf of Mexico, contributing to the heightened hurricane season forecast.

Marine Heat Wave Threatens Florida's Coral Reefs

Currently, coral reefs in Florida (United States) are facing an unprecedented crisis as rising ocean temperatures threaten their survival, highlighting the need for extraordinary conservation efforts.

- Rising water temperatures in Florida Keys have triggered widespread coral bleaching, endangering these vital ecosystems.
- Coral bleaching has also been reported in the Bahamas, Cuba, Mexico, Belize, El Salvador, Costa Rica, Panama, Colombia, Puerto Rico, and the U.S. Virgin Islands.
- The southern Caribbean, home to some of the **healthiest coral reefs, faces the potential sixth mass bleaching event since 1995.**
- Long periods of high heat weaken corals, leaving them vulnerable to diseases that can be fatal.
- Ongoing efforts focus on **relocating corals to cooler waters, nurturing coral fragments in labs, and removing harmful algae and predators.**
- Massive restoration initiatives like the National Oceanic and Atmospheric Administration's **Mission: Iconic Reefs** aim to protect resilient coral species.
- Programs like **I.CARE** train volunteers to remove algae and coral predators, improving corals' chances of survival.
- Corals play a crucial role in supporting marine life, with nearly 25% of all marine species relying on them.

Climate change-induced global warming is causing longer and more frequent coral bleaching events, endangering reefs worldwide.

Hurricane Hilary Lands in US West Coast

The recent landfall of Hurricane Hilary in Southern California and Mexico is unusual due to the West Coast's infrequent encounters with hurricanes.

- The West Coast of the United States **rarely experiences hurricanes**, with the last hit recorded in 1858.
- Hurricane Hilary is unique as it is moved towards Southern California, **deviating from the typical path of offshore subsiding tropical storms.**
- California usually witnesses **tropical storms only** occasionally, with the last significant impact in 1997 by Hurricane Nora.
- **Pacific coast rarely experiences tropical storms** and hurricanes due to ocean conditions.
- Hurricanes require **ocean waters above 26 degrees Celsius** for formation; colder waters hinder formation or weaken existing hurricanes.
- **Warm equatorial waters** are transported north to the US east coast via Gulf Stream, while Pacific's cold currents steer colder water towards equator.
- **Vertical wind shear** is another crucial factor in hurricane formation, describing wind speed changes with altitude.
- **Strong upper-level winds** can disrupt hurricane structure, limiting their formation or growth.
- Eastern Pacific usually has stronger wind shear than the Gulf of Mexico, leading to fewer hurricanes along the west coast.
- Wind steering patterns play a role, as trade winds direct hurricanes towards the east coast but divert them from the west coast.
- Hurricanes originating in the eastern Pacific typically follow west-northwest trajectories, moving away from the coast.

Climate change has the potential to increase the frequency and intensity of hurricanes, driven by rising ocean temperatures.

Disaster Management

China's "Sponge Cities" and Flood Vulnerability

Recent devastating floods in China have raised questions about the effectiveness of the country's "sponge city" initiative, which was launched in 2015 to mitigate urban flood risks.

- China's "sponge city" initiative aimed to **enhance flood resilience in urban areas** by using nature-based solutions to manage water distribution, drainage, and storage.
- The initiative involved various measures such as **permeable asphalt, new canals, ponds, and wetland restoration** to improve drainage and reduce waterlogging.
- Despite the initiative, recent floods have caused significant damage and loss of life, prompting concerns about its effectiveness.
- In July, floods and geological disasters led to 142 deaths, destruction of 2,300 homes, and economic losses of $2.19 billion.
- The initiative **addresses China's vulnerability to extreme weather**, aiming to make highly populated cities more resilient to flooding and drought.
- **China's rapid urbanization** has led to concrete covering vast areas, reducing natural flood plains and causing waterlogging and flooding issues.
- Researchers have criticized the government for not giving enough attention to sponge city construction and called for national legislation.
- Despite sponge city measures, this year's floods exceeded their capacity to prevent disasters.
- Sponge city infrastructure can typically handle up to 200 millimeters of rain per day, while some rainfall events exceeded this limit.

Authorities also face challenges in adapting to climate change, especially in less-developed areas with less advanced sponge city development.

CWC Launches 'Floodwatch' App for Advanced Flood Forecasting

On 17th August, 2023, the Central Water Commission (CWC) launched the 'Floodwatch' app, providing flood forecasts a day in advance and seven-day advisories for flood risks at measurement gauges across India.

- It can be downloaded from Google's Play Store and features a map of India with coloured circles representing flood risk at different water stations.
- Green signifies **'normal' risk**, yellow indicates **'above normal**,' orange represents **'severe'** and red signifies **'extreme.'**
- Users can click on circles to view current water levels, historical highs, danger levels, and warnings, available in English and Hindi.
- Floodwatch utilizes advanced technologies like **satellite data analysis, mathematical modeling, and real-time monitoring** to deliver accurate forecasts.
- It aims to provide essential information about flood situations to users. The app is a crucial addition to India's flood forecasting and response infrastructure.
- Recent heavy rains, a combination of Western Disturbances and monsoon conditions, have triggered landslides in Himachal Pradesh and Uttarakhand. The app aims to enhance flood preparedness and response in such situations.

Accurate flood forecasts are essential for minimizing damage and ensuring the safety of communities. 'Floodwatch' will contribute to better flood management and disaster preparedness.

News Snippets

Indian Cheetah Project Management	• Experts from South Africa and Namibia, members of India's National Cheetah Project Steering Committee, have written to the Supreme Court, voicing their distress over being kept uninformed and raising concerns about the management of the cheetah translocation project. • They highlight that improved monitoring and timely veterinary care could have prevented some cheetah deaths, emphasizing that their expertise was ignored and they were treated as "window dressing" rather than being actively involved. • The initiative, launched last September, involved the translocation of 20 cheetahs from Namibia to India, with the goal of reintroducing the species to the wild. • Cheetahs were released into the Kuno National Park in Madhya Pradesh, but since the first release, nine cheetahs have died—raising concerns about the project's effectiveness and management.
July 2023 Marks Hottest Month Ever Recorded	• July 2023 has been confirmed as the hottest month ever recorded, with temperatures 1.5 degrees Celsius above pre-industrial levels. • This follows record-breaking heat in June, indicating a concerning trend of global temperature increase. • Global air and ocean temperatures set new all-time records in July, underscoring the need for greenhouse gas emissions reduction. • The sweltering heat has caused extreme weather events globally, including wildfires in Canada and southern Europe. • Over 2 billion individuals experienced climate change-boosted warmth daily throughout the month. • The escalating climate crisis demands decisive and cooperative efforts from nations worldwide.
Elephant Population in Karnataka Reaches Record High	• The elephant population in Karnataka has reached a new high, with an increase of 346 elephants, making it the highest elephant-populated state in India, according to the latest interim report on Asian Elephant population estimates. • Bandipur Tiger Reserve records the highest density of 0.96 elephants per sq km. • Nagarahole Tiger Reserve follows with a density of 0.93 elephants per sq km. • BRT Tiger Reserve and MM Hills Wildlife Sanctuary also contribute to elephant population density.
Plastic Overshoot Day	• The inaugural Plastic Overshoot Day, occurring on July 28, 2023, marked the moment when global plastic consumption surpassed the capacity for waste management, revealing the alarming scale of plastic pollution. • The 2023 Plastic Overshoot Day Report by Earth Action (EA) indicates that around 68,642,999 tonnes of additional plastic waste will enter the environment this year. • Twelve countries, including India, China, and the United States, are responsible for 52% of mismanaged plastic waste. • India's Plastic Overshoot Day was January 6, 2023, demonstrating a significant Mismanaged Waste Index (MWI). • The UN Plastic Treaty aims to combat plastic pollution globally, emphasizing extended producer responsibility (EPR) and phasing out non-circular plastics. • India's proposed ban on single-use plastics in 2019 evolved into a call for a global plastic pollution treaty by 2024.

International Relations

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- G20 Trade and Investment Ministers' Meeting
- India and China Agree to Resolve LAC Issues
- Trinidad and Tobago Join India Stack Collaboration
- India and Vietnam Discuss Bilateral Trade Challenges
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World Issues

- Russia Targets Ukrainian Grain Route along Danube
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- Ethiopia's Amhara Region Declares Emergency
- Disputed Gas Field in Middle East Raises Regional Tensions

International Relations

India and Greece Elevate Ties to Strategic Partnership

On 25th August, 2023, India's Prime Minister visited Greece. During this Prime Ministerial visit to Greece after four decades, India and Greece agreed to usher in a new era of collaboration.

- During bilateral talks in Athens, Indian Prime Minister emphasized the enduring warmth and depth of relations between the two countries despite the extended gap.
- Greece also conferred the **Grand Cross of the Order of Honour** on Prime Minister Narendra Modi.
- Both leaders agreed to elevate the India-Greece partnership to **'strategic' level.**
- Both countries are poised to **expand cooperation across sectors** including defence and security, infrastructure, agriculture, education, emerging technologies, and skill development.
- Both leaders expressed readiness to confront international challenges together, emphasizing adherence to the **UN Charter** amid global turmoil and conflicts, including the Ukraine crisis.
- The two leaders resolved to strengthen defence industrial collaboration, enhance maritime security, and foster compliance with the Convention on the Law of the Sea.

As a natural progression of ties, a Migration and Mobility Partnership Agreement is set to be inked, facilitating skilled workforce migration between India and Greece.

G20 Trade and Investment Ministers' Meeting

On 24-25 August, 2023, the G20 Trade and Investment Ministers' Meeting was held in in Jaipur, Rajasthan. The meeting concluded with the adoption of key principles and action-oriented measures to enhance global trade and investment.

- During the meeting, the **Jaipur Call for Action** was issued to enhance information access for MSMEs, addressing informational gaps.
- It will help **promote industry, MSME sector, upgrade the global trade help desk**, and bridge information gaps for MSMEs to help them expand their business and trade.
- There were five priorities before the Trade and Investment Working Group — trade for growth and prosperity, trade and resilient global value chains, integrating MSMEs in global trade, logistics for trade and WTO reforms.
- The G20 Ministers endorsed the **G20 Generic Mapping Framework for Global Value Chains** (GVCs), with a specific focus on aspects such as data, analysis, and the resilience of GVCs.
- India is seeking **re-establishment of the dysfunctional dispute resolution mechanism** under the World Trade Organisation (WTO) based on the principle of 'common but differentiated responsibility' along with a push towards consensus-based decision making G20 Trade and Investment Ministers' meeting under India's Presidency concludes in Jaipur.
- Under the WTO, **countries can appeal in the appellate body** to adjudicate disputes.
- The appellate body at the WTO stopped functioning from December 2019, but the panels are still working.
- Several countries including the US have been pushing for reforms in the WTO.

There was a consensus among the G20 participants to support the sharing of best practices related to Mutual Recognition Agreements (MRAs) for professional services, aiming to enhance international recognition of technical qualifications.

India and China Agree to Resolve LAC Issues

On August 13-14, 2023, the 19th round of India-China Corps Commander Level Meeting was held. During the meeting, India and China jointly announced their commitment to resolve outstanding matters along the Line of Actual Control

(LAC) in eastern Ladakh efficiently, while also emphasizing the importance of maintaining peace in the border regions.

- China's assertive territorial claims are aimed at **discouraging India's warming ties with the United States.**
- Experts suggest that China's tactical dialing down of tensions might be aimed at creating a favourable environment for high-level leaders' meetings, while still enhancing its border posture.
- Similar dynamics are observed in the **South China Sea**, where China used a water cannon against a Philippines vessel, possibly linked to the Philippines' warming relations with the United States.
- China's approach to India appears to be influenced by the growing rivalry between China and the US, causing China to view India's actions through the prism of its ties with Washington.
- India's External Affairs Minister emphasized that **current relations are "abnormal"** due to China's unilateral enforcement of claims and altering the **status quo along the LAC.**
- While both sides **disengaged from friction points**, subsequent talks have slowed down, with China making demands seen as unreasonable by Indian military officials.
- China's strategy to pressure India might backfire, **potentially pushing India closer to the US and undermining China's intentions.**
- Experts highlight two contrasting views in Beijing: one assumes pressure will dissuade India from aligning with the US, while the other recognizes the risk of pushing India toward deeper security partnerships with Washington.
- China's territorial actions could **deepen geopolitical rivalries.**

China's attempts to exert territorial influence to deter its neighbours from aligning with the US could lead to unintended consequences, potentially pushing these nations into closer security relationships with Washington.

Trinidad and Tobago Join India Stack Collaboration

Recently, India and Trinidad and Tobago have signed a Memorandum of Understanding (MoU) on sharing of India Stack - a collection of open APIs and digital public goods that aim to facilitate identity, data, and payment services on a large scale.

- The collaboration aims to **facilitate digital transformation** through activities like capacity building, training programs, knowledge exchange, and the development of pilot solutions.
- Minister of State for Electronics and IT highlighted that leveraging India Stack can **accelerate the digitalization** process and lead to economic and governance transformations in partner countries.
- This collaboration is expected to foster an ecosystem of startups, developers, and system integrators, driving innovation around India Stack.
- India has previously signed similar agreements with countries like **Armenia, Sierra Leone, Suriname, and Antigua and Barbuda** to share India Stack.
- **Mauritius and Saudi Arabia** are in advanced stages of finalizing cooperation on India Stack, while a similar pact was signed with Papua New Guinea recently.
- **India's Unified Payments Interface (UPI)**, a component of India Stack, has been accepted in various countries, including France, UAE, Singapore, and Sri Lanka.

Trinidad and Tobago's partnership with India to share India Stack underscores the collaborative efforts toward digital transformation and the global recognition of India's innovative digital ecosystem.

India and Vietnam Discuss Bilateral Trade Challenges

On 8th August, 2023, the 5th meeting of India-Vietnam Joint Trade Sub-Commission (JTSC) was held in New Delhi. The meeting was held after a gap of more than four years due to factors including the COVID-19 pandemic.

- The discussions revolved around **challenges in logistics that impact bilateral trade** between India and Vietnam.
- Both nations recognized the significance of tackling these challenges and expressed mutual interest in finding solutions.
- Proposed solutions include **exploring direct shipping services, collaborative freight movement, and enhancing air connectivity.**
- Potential sectors for expanded trade cooperation were identified, including agriculture, fisheries, textiles, pharmaceuticals, chemicals, machinery, and more.
- India raised **concerns about pending registration** of Indian fishery and meat establishments for export.
- Issues related to restricted market access for Indian pharmaceuticals and anti-dumping duties on Indian products were discussed.
- India highlighted the potential for cooperation in various sectors such as services, IT, finance, education, and tourism.
- Suggestions were made for **Mutual Recognition Agreements (MRAs) on professional services,** internationalization of RuPay card, QR-based payment systems, and domestic currency trade settlement.
- Vietnam is currently India's **twenty-third largest bilateral trade partner**, with bilateral trade totalling $14.7 billion in 2022-23.
- Vietnam ranks as the **fifth largest trade partner of India among ASEAN countries**, accounting for 11.2 percent of India's total trade with ASEAN.
- Vietnam is an important destination for India's iron and steel, agricultural, and animal products.

Both sides agreed to work together to address market access issues and technical barriers through regular discussions.

Cabinet Approves India-Suriname MoU on Medicines Cooperation

Recently, the Union Cabinet approved the Memorandum of Understanding (MoU) between India and Suriname, signed in June 2023, to strengthen cooperation in medicines regulation.

The MoU aims to promote **recognition of Indian Pharmacopoeia (IP) standards** in Suriname for quality medicines.

- Key understandings established under the MoU:
  - ✓ Suriname to acknowledge IP as a benchmark for medicine standards, accepting the **Certificate of Analysis from Indian manufacturers.**
  - ✓ Suriname gains access to **Indian Pharmacopoeia Reference Standards (IPRS)** and impurity standards at reasonable costs.
- Collaboration aims to enhance **development of generic medicines** and ensure affordable healthcare in Suriname.
- Both countries have committed to promoting understanding and implementation of pharmacopoeia standards.
- MoU enhances regulatory capacity for **quality healthcare and explores technical cooperation** for future developments.
- The MoU had **positive implications for India** as it boosts medical product exports, foreign exchange earnings, and pharmaceutical sector growth.
- It also eliminates **duplicate regulation, testing, and post-import** checks for Indian drug exporters.
- Indian Pharmacopoeia is already recognized by **Afghanistan, Ghana, Nepal and Mauritius.**

The MoU between India and Suriname underscores a collaborative effort to elevate healthcare standards through mutual recognition of Indian Pharmacopoeia standards, with a potential for increased medical exports and affordable healthcare access, thereby contributing to a more inclusive global pharmaceutical landscape.

World Issues

Russia Targets Ukrainian Grain Route along Danube

Recently, Russia conducted drone strikes targeting ports and grain storage facilities along the Danube River in Ukraine.

- The Danube delta serves as an **alternative grain passage for Ukraine after Russia's** exit from the Black Sea grain deal, facilitated by the UN and Turkey.
- The deal's significance lay in ensuring **secure passage for cargo ships** carrying grain from Ukrainian Black Sea ports.
- **The Sulina Channel**, a 63 km distributary of the Danube, holds crucial importance in this new trade route, connecting major Ukrainian ports to the Black Sea entirely within Romania's borders.
- Ukraine, recognized as the **"breadbasket of Europe,"** stands as one of the world's leading grain exporters, with its economic stability heavily reliant on agricultural exports.
- The Danube, Europe's second-longest river, has historically played a pivotal role in freight movement.
- The delta, situated around 80 km from the sea near Tulcea, Romania, divides into three major channels: **Chilia, Sulina, and St George.**
- Of these, the Sulina Channel, having undergone dredging and straightening, is the sole deep and wide enough channel for efficient freight transport.
- Ships carrying grain from Ukraine embark from Ukrainian ports such as Izmail and Reni, using the Chilia Channel, and head towards the port of Sulina.
- From there, the journey continues approximately 140 km south to Constanta, Romania's largest seaport, where cargo is transferred to larger vessels for transport to the Mediterranean via the Bosphorus straits, under NATO protection.
- While Russia refrains from targeting NATO-controlled territories, ongoing attacks on Ukrainian ports and grain facilities on the Danube pose severe challenges.
- Ukraine's **historical reliance on its rail network and Black Sea ports for grain exports** leads to limitations in port capacity to handle the sudden influx of grain volume.

The future implications of Russia's targeting of key grain transport infrastructure along the Danube remain uncertain, potentially impacting Ukraine's agricultural exports and economic stability.

Iran and Saudi Arabia Hold Diplomatic Talks

On 17th August, 2023, Iran's Foreign Minister embarked on a historic journey to Saudi Arabia, marking a significant step towards détente between the two rival nations with Chinese mediation.

The visit highlights improved relations between the two regional rivals since the resumption of diplomatic ties in March, 2023.

- The recent diplomatic progress **follows Chinese mediation** and efforts to ease hostilities between the two nations.
- Despite the diplomatic initiatives, challenges persist, including disagreements on Iran's nuclear program, the Yemen conflict, and regional security.
- This visit holds significance as it is the **first public trip by an Iranian Foreign Minister to Saudi Arabia** in years.
- The rivalry between Saudi Arabia and Iran is rooted in **Islamic sectarianism.** While Iran is the foremost **Shia** state in the world, Saudi Arabia is considered to be the religious home of **Sunni Islam.**
- In modern times, this sectarian rivalry has translated into a tussle for **regional hegemony.** This has played a role in both sides being involved in multiple proxy conflicts against each other in Iraq, Lebanon, Syria and most devastatingly, Yemen.

- Diplomatic relations between Saudi Arabia and Iran were severed in 2016 after Saudi diplomatic posts in Iran were attacked by protesters.
- Saudi Crown Prince Mohammed bin Salman's rise to power also influenced the deterioration of relations between Saudi Arabia and Iran.
- After the **U.S. withdrawal from Iran's nuclear deal in 2018**, tensions escalated, leading to attacks attributed to Iran, including a major strike on Saudi Arabia's oil industry.
- Geopolitical shifts, including the pandemic and the U.S. withdrawal from Afghanistan, prompted Gulf Arab nations to reconsider their relations with Iran.
- Saudi Arabia and Iran agreed to reopen embassies with Chinese mediation in March, 2023 indicating a thaw in diplomatic ties.

While Saudi-led strikes in Yemen have decreased, the war continues, with Iranian-backed Houthi rebels maintaining control over the capital, Sanaa.

African Union and European Union Respond to Niger's Military Coup

On July 29, 2023, the African Union called on Niger's military junta to "return to their barracks and restore constitutional authority" within 15 days, adding pressure on the coup leaders.

- Furthermore, the European Union announced the suspension of security and funding cooperation with Niger.
- Additionally, **Economic Community of West African States (ECOWAS), the regional bloc**, has imposed a deadline for the military junta to reinstate the ousted President.
- Niger, a vast, **arid West African country**, has faced political instability and multiple military coups since gaining independence from French colonial rule in 1960.
- The country, with a population of approximately 25 million, grapples with extreme poverty, food security threats due to climate change, and security challenges posed by Islamist extremist groups and local militias.
- In 2021, **Mohamed Bazoum** was elected as President in a democratic transfer of power, marking a positive step in the country's political evolution.
- The **recent coup** on July 26, 2023 led by General Abdourahamane Tchiani has created uncertainty, with the military detaining President Bazoum and citing "continued deterioration of the security situation" and "poor economic and social governance" as reasons for the takeover.
- In recent years, the **Sahel region** has witnessed rising terrorist influence, security challenges, and instability, which has led to military takeovers in some countries.
- France, a former colonial power in Niger, has cut off aid to the country following the coup, and the presence of foreign troops from France and the US has sparked local unrest.
- **Russia's influence in the Sahel** is also growing, potentially complicating the regional security landscape.
- Niger's coup follows **a pattern of political instability in the Sahel region**, with Mali, Burkina Faso, and Chad witnessing military takeovers since 2020.

The response to the Niger coup includes discussions on potential military interventions, but challenges remain, including the question of economic sanctions and concerns about regional stability.

Ethiopia's Amhara Region Declares Emergency

On 4th August, 2023, Ethiopia's government announced a six-month state of emergency in the Amhara region due to ongoing clashes between the military and local Fano militiamen, granting authorities sweeping powers to maintain order.

- Amhara's regional government seeks federal assistance to restore order as clashes continue.
- The state of emergency empowers the **government to enforce curfews, limit movement**, ban weapons, prohibit public gatherings, and make arrests without warrants.
- Media outlets in violation of emergency orders may face closures or movement restrictions, according to the Government Communication Service.
- While currently affecting Amhara, these orders could potentially extend to other regions if deemed necessary.
- Federal efforts to weaken regional paramilitary groups contribute to the soured relationship between Fano and Ethiopian National Defense Force (ENDF).
- Some activists argue that these developments render Amhara vulnerable to attacks from neighboring regions.

The declaration of a state of emergency in the Amhara region reflects the ongoing unrest, underscoring the challenges of maintaining stability in a country marked by historical grievances and ethnic tensions.

Disputed Gas Field in Middle East Raises Regional Tensions

Recently, the contested offshore Dorra gas field in the Gulf waters has ignited a long-standing dispute between Iran and Kuwait, who are competing for ownership rights.

- The **Dorra gas field, located on Kuwait's eastern maritime border** and discovered in 1967, is a point of contention between Kuwait and Iran.
- **Iran claims the gas field as "Arash**," arguing that it extends into its territorial waters.
- **Kuwait and Saudi Arabia**, who jointly share maritime gas and oil resources, signed an agreement to develop the Dorra field, sparking Iran's objection and labelling it "illegal."
- Despite rejecting Iran's ownership claims, Kuwait's Foreign Minister was invited to visit Iran, indicating ongoing diplomatic efforts.

- The dispute traces back to the 1960s when both Iran and Kuwait received offshore concessions in the same area, leading to overlapping claims in the northern part of the field.
- Recoverable reserves in the disputed field are estimated at around 220 billion cubic meters (7 trillion cubic feet).
- Kuwait and Saudi Arabia jointly assert their sovereign rights to the gas field, renewing calls for Iran to negotiate maritime borders to settle the issue.
- Despite ongoing talks, recent attempts to reach an agreement have failed, with Kuwait expressing intent to proceed with drilling and production in the Dorra gas field.
- Iran responds by asserting its willingness to pursue its rights and interests in the field's exploitation and exploration without a cooperative agreement.
- Saudi Arabia's involvement is linked to its shared border with Kuwait and the 1922 **Uqair Convention,** which divided a Neutral Zone containing various resources.
- The agreement stipulated **equal sharing of maritime resources** within the Neutral Zone between Saudi Arabia and Kuwait.

The contested Dorra gas field falls within this shared zone, affecting Saudi Arabia's interests and adding complexity to the resolution of the dispute.

Miscellaneous

India's Growing Role in Murmansk's Arctic Cargo Traffic

Recently, Murmansk, known as the Arctic capital and the starting point of the Northern Sea Route (NSR), is experiencing increased Indian engagement in cargo traffic, with India accounting for 35% of Murmansk port's eight million tonnes of cargo in the first seven months of 2023.

- The Arctic potentially holds **40% of global oil and gas reserves**, as well as coal, zinc, and silver.
- India's engagement with the Arctic dates back to the **1920 signing of the Svalbard Treaty** and involves diverse scientific studies and expeditions.
- **The Northern Sea Route (NSR)** is a shorter shipping route between Europe and Asia-Pacific countries, garnering attention due to its potential distance savings.
- Russia's nuclear-powered icebreaker fleet ensures safe navigation along the icebound Arctic seas.
- India's increasing imports of Russian crude oil and coal contribute to the growing cargo traffic along the NSR.
- India's **geographical location and reliance on sea transportation** make the NSR a strategic transit route.
- The **Chennai-Vladivostok Maritime Corridor (CVMC) Project** aims to reduce transport time via the NSR, benefiting cargo like coking coal, crude oil, LNG, and fertilizers.
- Russia's NSR development plan targets 80 million and 150 million tonnes of cargo traffic for 2024 and 2030, respectively.

In March 2023, a Russian delegation engaged with Indian businesses to promote year-round NSR operation and encourage Indian participation. A workshop on the Chennai-Vladivostok Maritime Corridor Project is scheduled for the second half of October, aiming to enhance trade connectivity.

News Snippets

India-Australia Mutual Recognition for Trusted Exporters	• The Indian Cabinet has given approval for a Mutual Recognition Arrangement (MRA) between India and Australia, facilitating accredited exporters from both countries in customs clearance. • MRA aims to benefit accredited exporters in customs clearance. • The agreement involves Central Board of Indirect taxes and Customs (CBIC) from India and the Australian Border Force. • The deal has reciprocal benefits for trusted exporters in both countries. • It aligns with World Customs Organisation's SAFE Framework for secure global trade. • The agreement enhances security of supply chains while easing trade facilitation and boosts trade relationship between India and Australia.
Arbitration Clause for Chabahar Port Dropped	• To expedite matters at the Chabahar port, Iran and India have chosen to bypass commercial arbitration in foreign courts. • Instead, they will engage in investment arbitration or other alternative modes of dispute resolution. • This approach prevents Iran from the need to modify its Constitution. • Both parties have opted for arbitration following the guidelines set forth by the UN Commission on International Trade Law (UNCITRAL), a preference India holds over alternative international trade arbitration mechanisms. • This joint decision not only advances the cooperation between India and Iran but also positively impacts broader regional dynamics.

"Duty to Consult" Security Pledge	• The United States, Japan, and South Korea have signed a new security pledge called the "duty to consult," committing the three countries to consult with each other in the event of a security crisis or threat in the Pacific. • The "duty to consult" pledge acknowledges that the security environments of the three countries are fundamentally interlinked, and a threat to one is considered a threat to all. It seeks to strengthen cooperation and coordination in response to security challenges. • Under the pledge, the three nations agree to consult, share information, and align their messaging in the face of a security threat or crisis. • The commitment to consult does not alter existing bilateral treaty commitments between the United States and Japan or the United States and South Korea. • It also respects each country's right to defend itself under international law.
Myanmar Junta Extends State of Emergency	• Myanmar's National Defence and Security Council (NDSC) agreed to extend the state of emergency by six months. • This extension could lead to the delay of elections, which the Junta had previously pledged to conduct by August, 2023. • The state of emergency was initially declared in February 2021, following the military's removal of the democratically elected government of Daw Aung San Suu Kyi. • Since then, Myanmar has experienced turmoil and unrest. • Myanmar's Constitution allows for an initial declaration of a state of emergency for one year. • It can be extended for a maximum of two half-year terms, as per the discretion of the military-dominated NDSC. • This extension marks the second instance of the Junta's violation of the constitutional provisions concerning the state of emergency.
Multinational Forces Practice Island Retake Drill	• Australian and Philippines forces, along with US Marines, conducted a large military drill aimed at reclaiming a seized island, near the South China Sea. • The joint military exercise involved mock beach landings, assaults, and helicopter insertions at a Philippine navy base. • Despite criticism of China's actions in the disputed waters, the drill did not specifically target Beijing, as per the Philippine military. • Recent clashes, including a Chinese coast guard ship blocking a Philippine supply run, underscored regional tensions. • The South China Sea disputes involve Vietnam, Malaysia, Brunei, and Taiwan alongside China and the Philippines, creating a delicate flashpoint in regional and global geopolitics.
Triton Island	• Reports indicate that China is currently in the process of building an airstrip on Triton Island, situated in the South China Sea, an area contested by Taiwan and Vietnam. • The airstrip, with an approximate length of 2,000 feet, has sparked concerns regarding China's intentions within this disputed region. • Triton Island is part of the Paracel group and is the subject of territorial disputes involving Taiwan, Vietnam, and China. • China's development activities on Triton Island are reminiscent of its actions on other man-made islands in the area, particularly within the Spratly group.
Sri Lanka Unique Digital Identity Project (SL-UDI)	• As a significant step in Sri Lanka's digitalization efforts, India has provided an upfront sum of Rs. 45 crore to support the island nation's unique digital identity project through grant assistance. • This financial contribution underscores India's unwavering commitment to advancing this pivotal initiative and underscores the depth of collaboration between the two countries. • The SL-UDI project's primary objective is to streamline digital identification processes within Sri Lanka. • This comprehensive effort involves the collection of biographic and biometric data, including facial, iris, and fingerprint information. • The resulting identification cards are expected to facilitate efficient government service delivery, reduce poverty, support welfare programs, and promote greater financial inclusion.
Pakistan Caretaker Government	• Pakistani Prime Minister Shehbaz Sharif's unexpected decision to dissolve the country's Parliament, just three days before the completion of its five-year term, has resulted in the appointment of Senator Anwaar-ul-Haq Kakar as the interim premier. • According to Pakistan's Constitution, a neutral caretaker government must be established to oversee national elections within 90 days following the dissolution of Parliament. • The primary responsibility of the caretaker government is to ensure a fair and trustworthy electoral process, which is vital for maintaining stability and economic certainty.

STATE WATCH

Meghalaya

CM Solar Mission

- It aims to bolster resilience, autonomy, and environmentally sustainable progress within the state.
- The mission, backed by an investment of Rs 500 crore from the government over the next five years, is set to transform the state's energy landscape and contribute to its sustainable development.
- The state government has allocated an annual investment of Rs 100 crore to kickstart the solar mission.
- Additionally, plans are underway to attract diverse funding partners, including contributions from corporate social responsibility, carbon credits, and international organizations sharing the vision of sustainable energy.
- The Mission will help to bridge this gap and create a more reliable and sustainable energy ecosystem.

Gujarat

'Sinh Suchna' App

- On the Occassion of World Lion Day (10th August 2023), Chief Minister of Gujarat launched the 'Sinh Suchna' web app which will provide exact information regarding the location and movement of the lions in real-time.
- The app empowers individuals to directly report lion sightings to the forest department.
- This innovative approach facilitates real-time tracking and swift conflict resolution.
- The event was also marked by the unveiling of a 'Lion Anthem' and the release of two books celebrating Gujarat's natural heritage. Titled "The King of the Jungle – The Asiatic Lions of Gir" and "Hu Gujarat no Sinh," these publications pay homage to the state's rich biodiversity.
- The lion population in Gujarat has now grown to 674, spanning an area of 30,000 square kilometers.

Kerala

Assembly Approves Resolution to Rename State as 'Keralam'

- Aimed at embracing its cultural and linguistic heritage, the Kerala Legislative Assembly has passed a resolution requesting the Central government to change the name of the state from 'Kerala' to 'Keralam'.
- In Malayalam, the state was denoted as 'Keralam', but in alternative languages, it is called as 'Kerala'.
- The term 'Keralam' traces its roots to the fusion of two Malayalam words – "Kera," symbolizing coconut, and "Alam" denoting land.
- Thus, 'Keralam' intricately encases the essence of the "Land of Coconut Trees" paying homage to the state's prolific coconut cultivation, a pivotal contributor amounting to about 45% of India's overall coconut harvest.
- The modern state of Kerala was established along linguistic lines in 1956, a significant juncture that witnessed the inclusion of the Malabar Coast and the Kasargod taluka (administrative subdivision) from South Kanara into the newly evolving Travancore-Cochin entity.

Athidhi Portal

- It is a user-friendly web portal to expedite the registration of migrant workers in Kerala.
- Contractors, who bring migrant workers to the state and employers, can register the workers in the portal. It also allows workers to register themselves individually as well.
- The enrolling officer will examine the details entered in the portal and issue a unique ID to each worker.
- The portal will also ensure that they have social security.

Karnataka

'Koosina Mane' Creches

- 'Koosina mane' means child homes or crèches.
- The scheme aims to provide healthcare, nutrition, and safety for children whose mothers are employed under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and other mothers living in the vicinity.
- The 'Koosina Mane' creches will be set up across 4,000-gram panchayats or 60% of gram panchayats for children of working mothers.
- This initiative aligns with the goals of both the MGNREGA and the Women and Children Development Department.
- The scheme will help redistribute the gendered burden of childcare.

Number of Elephants goes up by 346 from Last Count

- With an increase of 346 elephants since the previous census, Karnataka's elephant population has now reached 6,395, making it the highest elephant-populated region in the country.
- According to a report "Asian Elephant Population and Demography Estimates, 2023", the state of Karnataka has witnessed a remarkable increase in elephant population.
- The report was introduced ahead of the World Elephant Day (August 12), with the aim of raising awareness about the critical need to conserve and safeguard elephants.
- The report reveals that the state has an average elephant density of 0.34 per square kilometer.
- Notably, the Bandipur Tiger Reserve takes the lead in elephant density, housing 1,116 elephants with a density of 0.96 per square kilometer.
- The Nagarahole Tiger Reserve closely follows with 831 elephants and a density of 0.93.
- The Biligiri Rangaswamy Temple (BRT) Tiger Reserve, home to 619 elephants, maintains a density of 0.69, while the MM Hills Wildlife Sanctuary houses 706 elephants but has a lower density of 0.60.

Goa

India's First Village Atlas

- Towards preserving and celebrating India's rich socio-cultural heritage, Goa's Chief Minister recently unveiled a groundbreaking initiative – The Biodiversity Atlas of Mayem Village.
- This atlas offers a comprehensive socio-cultural history that traces back to the 12th century, making it a remarkable repository of historical and ecological knowledge.
- The Biodiversity Atlas of Mayem Village, heralded as India's inaugural village atlas, provides an illuminating insight into the captivating journey of Mayem village through time.
- From the village's humble origins to its transformational milestones, the atlas encapsulates the essence of Mayem's evolution.

Knowledge Partnership

- The Bharti Institute of Public Policy, a renowned think tank under the Indian School of Business (ISB), and the Government of Goa have entered into a Memorandum of Understanding (MoU) to establish a knowledge partnership.
- This strategic alliance is geared towards advancing evidence-based policy formulation and fostering impactful governance in the state of Goa.
- Under the terms of the MoU, the Bharti Institute of Public Policy will join forces with the Goa Institute of Public Administration and Rural Development to conduct specialized workshops.
- These workshops are aimed at enhancing the capabilities of state officials, empowering them with the tools to create and implement evidence-backed policies effectively.

Tamil Nadu

South-East Asia's Largest Desalination Plant

- Towards resolving the water crisis gripping Chennai city, Tamil Nadu's Chief Minister laid the foundation stone for what is set to become South East Asia's largest water desalination project.
- With an ambitious investment of Rs. 4,276.44 crore, this initiative holds the potential to alleviate Chennai's water scarcity concerns and elevate the city's status as a water-sustainable urban center.
- The goal of the project is to establish a Seawater Reverse Osmosis (SWRO) desalination facility with the capacity to generate an impressive 400 million liters per day (MLD) of clean, drinkable water.
- The financial backing for this project is being extended by the Japan International Cooperation Agency (JICA), exemplifying a collaborative endeavor aimed at tackling a critical regional concern.

CSE Prelims Special
GS Roundup-1

Dear Readers,

We are starting the CSE Prelims GS Roundup Series from this issue for the upcoming Prelims 2024 examination. The content published in this section will cater to the needs of the UPSC/State PCS Civil Services Prelims exams.

A careful analysis of the past 10-15 years Prelims questions reveals that the questions (especially in UPSC CSE) are never repeated but the topics are repeated. Questions are framed from different dimensions of the topics.

Accordingly, in this October issue, we have come up with the CSE Prelims GS Roundup-1. We have covered 36 most important topics from which questions are frequently asked in the Civil Services Preliminary Examination.

The GS Roundup Series will cover the entire syllabus of the Prelims exam, comprising Indian History, Art & Culture, Geography, Indian Polity & Governance, Economy, General Science & Science & Technology, and Ecology & Environment.

We hope you find the content helpful in your preparation for the Civil Services Examinations.

We encourage you to send us your feedback at cscenglish@chronicleindia.in

Happy reading!

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Indian History, Art and Culture

Sufi & Bhakti Movement: Personalities

Bhakti Movement: Personalities (North India)

Sant Gyaneshwar (1275–1296)

- Gyaneshwar's "Jnaneshwari" is a commentary on the Bhagavad Gita, providing insights into its philosophical and spiritual dimensions.
- He was a Marathi saint, philosopher, and poet who expressed profound spiritual concepts in accessible language.
- Gyaneshwar's teachings blended devotion (bhakti) with deep philosophical knowledge (jnana).

Kabir Das (1440–1518)

- "Bijak", a collection of verses and hymns attributed to Kabir, reflecting his spiritual insights is regarded as his most notable work.
- Kabir's couplets, called "Dohas," remain widely studied and translated due to their profound wisdom.
- His works were primarily composed in the vernacular language, making them accessible to a broader audience.

Ravidas (1450–1520)

- Ravidas' devotional compositions are found in the Guru Granth Sahib, representing his devotion to God.
- His poetry emphasized social equality and challenged the discriminatory caste system.

Guru Nanak Dev (1469–1539)

- "Japji Sahib" is Guru Nanak's composition at the beginning of the Guru Granth Sahib, encapsulating Sikh philosophy.
- His teachings, along with those of subsequent Gurus, were compiled in the Guru Granth Sahib, the holy scripture of Sikhism.
- Guru Nanak undertook four extensive journeys, collectively known as the "Udasis," spreading his message.
- He emphasized oneness, service, and devotion to God regardless of social or religious background.

Surdas (1478–1583)

- "Sur Sagar" and "Sur Saravali" are collections of his devotional compositions dedicated to Lord Krishna.
- Despite his visual impairment, Surdas composed heartfelt poetry expressing his profound love for Krishna.
- Legends suggest Krishna granted Surdas divine vision to see and compose his divine plays (leelas).

Meera Bai (1498–1547)

- Meera Bai's compositions, often in praise of Lord Krishna, are collected in the "Padavali" and "Bhajans."
- She was a Rajput princess who renounced worldly life to dedicate herself to devotion.

Tulsidas (1532–1623)

- "Ramcharitmanas" is an epic poem by Tulsidas and is a retelling of the Ramayana in Awadhi language, focusing on devotion to Lord Rama.
- His work played a significant role in popularizing devotion to Lord Rama and influencing Hindi literature.
- He composed numerous devotional hymns, emphasizing the greatness of Lord Rama.

Sant Eknath (1533–1599)

- Eknath composed numerous devotional abhangas, reflecting his devotion to Lord Vithoba.
- He was a prominent Marathi saint, poet, scholar, and religious reformer.
- Eknath's commentary on the Bhagavad Gita, called the "Eknathi Bhagwat," is highly regarded.

Dadu Dayal (1544–1603)

- Dadu Dayal's teachings emphasized inner spirituality, meditation, and love for God.
- He renounced material pursuits and advocated for a life centered on devotion and self-realization.
- Dadu Dayal's verses, collected in the "Bani" and "Satsai," focus on detachment and divine love.

Sant Tulsi Sahib (1763–1843)

- Tulsi Sahib was a spiritual master and poet, advocating Surat Shabd Yoga meditation for union with the divine.
- His poetry, collected in "Ghat Ramayan" and "Radhasoami Mat Prakash," emphasizes the inner journey.
- His teachings laid the foundation for the Radhasoami spiritual tradition, which emphasizes direct communion with the divine.

Bhakti Movement: Personalities (South India)

Ramanuja

- He gave philosophical justification for bhakti and tried to establish a careful balance between orthodox Brahmanism and popular bhakti which was open to all.
- Though he did not support the idea of the "lower" castes having access to the Vedas, he advocated bhakti as a mode of worship accessible to all including the Sudras and even the outcastes.

Nimbarka

- He was a Telugu Brahamana, who lived in Vrindavan near Mathura (North India).
- He believed in total devotion to Krishna and Radha.

Madhava

- Like Ramanuja, he did not dispute orthodox Brahmanical restriction of the Vedic study by the Sudras.

- He believed that bhakti provided alternate avenue of worship to the Sudras.
- His philosophical system was based on the Bhagvat Purana.

Vallabhcharya

- He hailed from a Telugu Brahamana family and was an intense follower of Shri Krishna.
- He advocated a system of pure non-dualism devoid of the concept of Maya.
- He advocated a universal religion which did not believe in distinctions of sex, caste, creed or nationality.

Sri Tyagaraja

- Tyagaraja was a highly acclaimed composer and musician, known for his significant contributions to Carnatic music. He composed numerous devotional songs (kritis) primarily in Telugu, praising Lord Rama.
- His compositions predominantly centered around his deep devotion to Lord Rama.
- He is credited with popularizing the practice of "Arangetram," the debut performance of a student after completing formal training in music.

Sufi Movement: Personalities

Moinuddin Chishti (Khwaja Gharib Nawaz)

- Born in 1142 CE in Sistan, Iran. Arrived in India around 1192 CE.
- He was the founder of the Chishti Order in India, known for promoting love, devotion, and service to humanity.
- His shrine is located in Ajmer, Rajasthan, and is a major pilgrimage site for people of various faiths.

Nizamuddin Auliya

- Born in 1238 CE in Badayun, India. Passed away in 1325 CE.
- A prominent Sufi saint of the Chishti Order, known for his teachings of love, compassion, and selfless service.
- His dargah is situated in Delhi and continues to be a center of spiritual and cultural activity.

Bulleh Shah

- Born in 1680 CE in Uch, Bahawalpur (present-day Pakistan). Passed away in 1757 CE.
- A Punjabi Sufi poet whose verses focused on themes of unity, love, and divine spirituality.
- His poetry is revered in both India and Pakistan, transcending religious boundaries.

Sultan Bahu

- Born in 1630 CE in Anga, Punjab (present-day Pakistan). Passed away in 1691 CE.
- A Sufi saint and poet known for his mystic poetry emphasizing the inner journey to connect with the Divine.
- His poetry is in Punjabi and addresses the deeper spiritual aspects of life.

Shah Abdul Latif Bhittai

- Born in 1689 CE in Sindh (present-day Pakistan). Passed away in 1752 CE.
- A Sufi saint and poet who composed in Sindhi, his verses celebrate love, unity, and devotion to God.
- His collection of poetry, "Shah Jo Risalo," is considered a masterpiece of Sindhi literature.

Khawaja Qutbuddin Bakhtiar Kaki

- Born in 1173 CE in Konya, Turkey. Passed away in 1235 CE.
- An important figure in the Chishti Order, his teachings focused on spiritual guidance and selfless service.
- His dargah is situated in Mehrauli, Delhi, and is a revered pilgrimage site.

Makhdoom Ali Mahimi

- Born in 1372 CE in Mahim, Mumbai. Passed away in 1431 CE.
- A Sufi saint and scholar from Maharashtra, known for his teachings promoting unity and devotion.
- His writings include "Majmu" and "Kitab ul Futuhat."

Sheikh Hamza Makhdum

- Born in 1315 CE in Zafarani, Yemen. Passed away in 1380 CE in Calicut, India.
- A Sufi saint known for his role in spreading Islam in Kerala and his spiritual teachings.
- His teachings continue to inspire spiritual seekers in the region.

Buddhism: Major Sites, Stupas, Texts & Scholars

Major Sites

Bodh Gaya

- Bodh Gaya is the revered site where Siddhartha Gautama attained enlightenment under the Bodhi tree, transforming into the Buddha.
- The Mahabodhi Temple, a UNESCO World Heritage site, is a splendid architectural structure that enshrines the Bodhi tree and marks the location of the Buddha's enlightenment.
- 'Vajrasana' is also known as the Diamond Throne, it's the spot where the Buddha is believed to have sat when he attained enlightenment.
- A massive bronze statue of the Buddha stands near the Mahabodhi Temple, symbolizing his enlightenment.

Sarnath

- Sarnath is where the Buddha delivered his first sermon after attaining enlightenment, known as the "Turning of the Wheel of Dharma."
- The Ashoka Pillar at Sarnath features the Lion Capital, which is now the national emblem of India. It's a historical artefact with Buddhist significance.

- Sarnath Museum houses an impressive collection of sculptures and artefacts related to the Buddhist era, including the famous Lion Capital.

Lumbini

- Lumbini in Nepal is believed to be the birthplace of Siddhartha Gautama, who later became the Buddha.
- Mayadevi Temple marks the exact spot where Queen Mayadevi is said to have given birth to Siddhartha Gautama, who would become the Buddha.
- The Lumbini Garden encompasses the birthplace, the Mayadevi Temple, and various monastic zones representing different Buddhist traditions.
- Ashoka Pillar is an ancient pillar erected by Emperor Ashoka in 249 BCE, bearing an inscription identifying Lumbini as the birthplace of the Buddha.
- A modern addition, the World Peace Pagoda, symbolizes global harmony and stands as a testament to the international reverence for Lumbini.

Kushinagar

- Kushinagar is where the Buddha achieved parinirvana, his final release from the cycle of birth and death.
- Mahaparinirvana Temple houses a reclining statue of the Buddha, depicting him at the moment of his passing into parinirvana.
- Matha Kuar Shrine is an ancient shrine with a carved statue of the Buddha in a meditative pose, showcasing exquisite artistry.

Ajanta Caves

- The Ajanta Caves comprise around 30 rock-cut Buddhist caves with intricate sculptures and exquisite paintings that depict the life and teachings of the Buddha.
- These caves were carved into a horseshoe-shaped cliff and include chaityas (prayer halls) and viharas (monastic cells).
- The art and sculptures in the Ajanta Caves reflect the Mahayana Buddhist tradition and its emphasis on compassion and bodhisattvas.
- The Ajanta Caves are famous for their representations of bodhisattvas, including Avalokiteshvara and Padmapani.
- The caves offer insights into the life of ancient Buddhist monks and provide valuable historical information about the development of Indian art and culture.

Ellora Caves

- Ellora Caves is a UNESCO World Heritage site and features Buddhist, Hindu, and Jain rock-cut monuments, showcasing the religious diversity of ancient India.
- The Buddhist caves at Ellora include monasteries, prayer halls, and chaityas, illustrating various aspects of Buddhist practice and art.
- Cave 10 (Vishwakarma Cave is a grand chaitya hall - is one of the largest rock-cut structures in the world and is known for its impressive architecture and sculptures.
- Cave 12 (Tin Thal) is a cave features a multi-story vihara with intricate carvings, demonstrating the architectural skill of the craftsmen.

Nalanda

- Nalanda was a renowned center of education and Buddhist scholarship, attracting scholars and students from across Asia.
- Nalanda played a crucial role in the development and spread of Mahayana Buddhist philosophy and thought.
- The site contains the ruins of monastic structures, temples, and stupas, offering insights into the daily life of monks and scholars.
- The Chinese traveller Xuanzang visited Nalanda in the 7th century and left detailed accounts of the institution's layout and activities.
- The archaeological remains of Nalanda provide valuable information about ancient Indian education, architecture, and the exchange of ideas.

Rajgir

- Rajgir was an important location in the life of the Buddha and served as a backdrop for several significant events and discourses.
- The Buddha delivered many teachings, including the Lotus Sutra, on the Vulture's Peak, a prominent hill overlooking Rajgir.
- Japanese Peace Pagoda is a white-stupa structure, built by Japanese Buddhists, symbolizes peace and commemorates the Buddha's teachings.
- Gridhakuta Hill is also known as Vulture's Peak, it is associated with the Buddha's teaching of the Prajnaparamita (Perfection of Wisdom) Sutra.
- Rajgir is known for its natural hot springs and the site of Saptaparni Caves, where the First Buddhist Council is believed to have been held.

Vaishali

- Vaishali was a vibrant city during the Buddha's time and was the site of several important events in Buddhist history.
- The Second Buddhist Council, which led to the division of the Sangha, is believed to have been held here.
- Vaishali is home to one of the Ashoka Pillars, which marks the location where the Buddha preached his last sermon.

Major Stupas

Mahabodhi Stupa, Bodh Gaya

- The Mahabodhi Stupa is situated at the very spot where Siddhartha Gautama attained enlightenment, becoming the Buddha.
- The stupa is adorned with intricate carvings and sculptures, showcasing a blend of Indian and Greco-Buddhist architectural styles.

- Vajrasana (Diamond Throne) is a sacred spot beneath the Bodhi tree, marked by the stupa is believed to be the meditation seat of the Buddha during his enlightenment.
- The Mahabodhi Stupa attracts pilgrims from all over the world, making it a significant center for Buddhist practice and study.

Sanchi Stupa, Sanchi

- The Great Stupa at Sanchi is one of the oldest stone structures in India, dating back to the 3rd century BCE, during the Mauryan period.
- The four intricately carved toranas are adorned with scenes from the life of the Buddha, illustrating important events and teachings.
- The toranas feature the Dharmachakra, the wheel of Dharma, symbolizing the Buddha's teachings and the Eightfold Path.
- The art on the stupa and its toranas reflects the universality of the Buddha's teachings and has influenced Buddhist art across Asia.

Dhamek Stupa, Sarnath

- The Dhamek Stupa is believed to mark the location where the Buddha delivered his first sermon on the Four Noble Truths and the Eightfold Path.
- This cylindrical stupa stands at a height of over 40 meters and has a diameter of 28 meters, making it an imposing monument.
- Emperor Ashoka is believed to have contributed to the construction of the stupa, indicating its historical significance.
- The Dhamek Stupa and Sarnath attract Buddhists and tourists, fostering a spiritual atmosphere and preserving the heritage of the area.

Nalanda Stupa, Nalanda

- Nalanda was a renowned center of learning and housed a massive stupa that symbolized the intellectual pursuits of its time.
- The stupa was part of a larger monastic complex that included temples, libraries, and residential quarters for monks and scholars.
- Nalanda attracted scholars from across Asia, contributing to the development and propagation of Buddhist philosophy and knowledge.
- The ruins of Nalanda provide valuable insights into the daily life, architecture, and educational system of ancient India.

Amravati Stupa, Andhra Pradesh

- The Amravati Stupa is renowned for its exquisite stone carvings that depict scenes from the life of the Buddha, Jataka tales, and various Buddhist deities.
- The stupa showcases the artistic prowess of ancient sculptors, capturing the essence of Buddhist teachings and iconography.
- The stupa's art is associated with the Amaravati School of Art, which flourished during the Satavahana period and contributed to Buddhist art development.

Sankissa Stupa, Sankissa

- Sankissa is believed to be the spot where the Buddha descended from the Tushita Heaven after giving teachings to his mother.
- The Sankissa Stupa commemorates this event and is a significant pilgrimage site for Buddhists.
- Emperor Ashoka is thought to have built a stupa here to commemorate the Buddha's visit to Sankissa.
- The stupa reflects the historical and cultural importance of Sankissa in Buddhist tradition and its association with key events in the Buddha's life.

Kesaria Stupa, Bihar

- The Kesaria Stupa is recognized for its massive dimensions, making it one of the tallest stupas in the world.
- Dating back to the Mauryan period, the stupa's existence highlights the patronage of Buddhism during ancient Indian dynasties.
- The stupa's grandeur represents the reverence and significance of the Buddha's teachings and relics in Indian history.
- Although largely in ruins, the Kesaria Stupa still stands as a testament to ancient architectural techniques and design.

Swayambhunath Stupa (Monkey Temple), Nepal

- Swayambhunath Stupa, perched atop a hill, is an iconic symbol of Kathmandu and Nepalese Buddhism.
- The stupa's all-seeing eyes gaze in four cardinal directions, symbolizing the Buddha's watchful presence and compassion.
- Swayambhunath's significance extends beyond Buddhism, as it's revered by both Buddhists and Hindus in Nepal.
- Climbing the stairs to the stupa offers pilgrims a spiritual journey and panoramic views of the Kathmandu Valley.

Bharhut Stupa, Madhya Pradesh

- The Bharhut Stupa is adorned with intricate bas-reliefs and sculptural panels illustrating scenes from the life of the Buddha.
- The stupa showcases art from the early Buddhist period, contributing to the understanding of iconography and stories of the Buddha.
- The carvings depict Jataka tales, highlighting moral lessons and illustrating the Buddha's previous lives.

Jethian Stupa, Bihar

- Jethian is home to a cluster of stupas and monastic remains, revealing insights into the historical Buddhist presence in the region.
- The Jethian Stupa, along with other stupas in the complex, showcases architectural styles and construction techniques of its time.

- The area around the stupa likely supported a monastic community, emphasizing its role as a center for Buddhist practice and learning.
- These points offer a comprehensive view of the historical, cultural, and spiritual importance of each of the mentioned Buddhist stupas, highlighting their roles in preserving Buddhism's teachings and shaping the cultural landscape of their respective regions.

Other Important Stupas

- **Chaukhandi Stupa:** Situated in Sarnath, it is a stupa built in a square tower-like shape, commemorating the place where the Buddha met his first five disciples.
- **Nirvana Stupa:** Situated in Buddhist temple of Kushinagar, it is also known as the Mukutbandhan Stupa, it is believed to mark the cremation site of the Buddha.
- **Ramabhar Stupa:** This stupa is said to mark the exact location of the Buddha's cremation and is an important pilgrimage site. It is situated in Anrudhwa, Uttar Pradesh.
- **Relic Stupa:** The Relic Stupa in Vaishali is said to house the ashes of the Buddha after his cremation.
- **Ananda Stupa:** This stupa is believed to contain the remains of Ananda, the Buddha's cousin and attendant. It is situated in Vaishali.

Major Texts and Scholars

Tripitaka (Pali Canon)

- The Tripitaka, also known as the Pali Canon, encompasses the core teachings of Theravada Buddhism.
- It includes the Vinaya Pitaka (monastic rules), Sutta Pitaka (discourses), and Abhidhamma Pitaka (philosophical analysis), forming the cornerstone of Buddhist doctrine.
- The texts cover a wide range of topics, including ethical conduct, mindfulness, meditation, and philosophical exploration.

Mahayana Sutras

- The Mahayana Sutras are renowned for their profound philosophical and metaphysical content.
- They elaborate on concepts like emptiness, the bodhisattva path, and the nature of reality beyond the Theravada teachings.
- These sutras emphasize the importance of compassion, altruism, and wisdom.
- They teach that enlightenment is attainable not only for oneself but for the benefit of all beings, reflecting the Mahayana ideal of "bodhisattva" – an enlightened being who remains to help others.

Vinaya Pitaka

- The Vinaya Pitaka outlines rules and guidelines for monastic conduct, providing a detailed framework for ethical behavior, communal living, and personal development within the sangha (monastic community).
- The Vinaya texts aim to maintain harmony and discipline within the monastic order, ensuring that the sangha operates smoothly, and practitioners can focus on their spiritual pursuits.

Dhammapada

- The Dhammapada is a collection of succinct verses attributed to the Buddha. These verses encapsulate key teachings on moral conduct, wisdom, and the path to liberation in a memorable and accessible format.
- The verses offer practical advice for daily life, addressing ethical dilemmas, the cultivation of mindfulness, and the development of inner peace, making them widely appreciated by both monastics and lay followers.

Anguttara Nikaya

- This text organizes the Buddha's teachings into numerical patterns, ranging from lists of virtues to stages of meditation.
- The systematic arrangement facilitates a comprehensive understanding of the path and teachings.
- The text highlights the gradual progression in spiritual development, guiding practitioners through incremental steps that lead to deeper insight, wisdom, and liberation.

Milindapanha (Questions of King Milinda)

- This text presents a series of philosophical dialogues between King Milinda and the monk Nagasena. Through these discussions, complex Buddhist concepts are explained and explored in a relatable manner.
- The dialogues skilfully convey deep philosophical ideas through engaging storytelling, making it a valuable resource for understanding the subtleties of Buddhist thought.

Vimalakirti Nirdesa Sutra

- This sutra emphasizes the significance of lay practitioners and their potential for attaining enlightenment.
- It features discussions between the lay bodhisattva Vimalakirti and advanced bodhisattvas, shedding light on the interplay of worldly life and spiritual practice.
- The sutra introduces the concept of "skilful means," illustrating how bodhisattvas adapt their teachings to the capacities and conditions of individuals, addressing their specific needs on the path.

Buddhacarita

- The Buddhacarita, written by Ashvaghosha, narrates the life of Siddhartha Gautama, from his birth as a prince to his attainment of enlightenment and his subsequent teachings.
- The text employs poetic language to convey the Buddha's journey, teachings, and the impact of his message, transforming his life story into an artistic and inspirational narrative.

Abhidharmakosa

- Written by Vasubandhu, this text provides an extensive analysis of Buddhist metaphysics, psychology, and philosophy, categorizing and systematizing complex topics to facilitate understanding.
- The text delves into the nature of reality, consciousness, and the constituents of existence, offering a structured framework for comprehending the intricacies of Buddhist thought.

Lankavatara Sutra

- The Lankavatara Sutra is a key text in the Yogacara and Zen traditions. It explores the concept of "mind-only" (cittamatra), asserting that all phenomena are manifestations of the mind.
- The sutra guides practitioners through meditative insights, helping them transcend dualistic perceptions and recognize the interdependence of mind and reality.

Sutralankara

- Attributed to Asanga, this text elaborates on Mahayana teachings and practices, emphasizing the bodhisattva path and the cultivation of compassion and wisdom.
- The Sutralankara systematically presents Mahayana concepts, guiding readers through progressive stages of the path, ethical conduct, and the practices of meditation and bodhicitta.

Bodhicharyavatara

- Written by Shantideva, this text outlines the bodhisattva path, focusing on the cultivation of compassion, ethical conduct, patience, and wisdom for the benefit of all sentient beings.
- Shantideva offers practical instructions for transforming challenges into opportunities for spiritual growth, exemplifying the bodhisattva's altruistic approach to life.

Yogacara-bhumi Shastra

- Attributed to Asanga, this text delineates the stages of mental development in Yogacara philosophy, guiding practitioners through a progression of meditative practices and insights.
- The text explores the nature of consciousness, perception, and the interplay between mind and reality, providing insights into the mind's role in shaping our experiences.

Avatamsaka Sutra

- The Avatamsaka Sutra presents a vast and interconnected vision of reality, describing the interpenetration of all phenomena and illustrating the qualities of a Buddha's enlightenment.
- Through its elaborate descriptions, the sutra emphasizes the interdependence of all existence and the potential for every being to achieve Buddhahood, reflecting Mahayana's universal compassion.

Early Medieval Dynasties

Gurjara-Pratihara Dynasty (6th - 11th century)

Nagabhata I (730 - 760)

- Successfully defended his kingdom against Arab invasions, preserving the integrity of north-western India.
- Consolidated his power and extended his influence over neighbouring territories.
- Initiated the process of revitalizing the Pratihara dynasty after the decline following Harsha Vardhana's death.

Mihira Bhoja (836 - 890)

- Known for his patronage of art, literature, and culture, fostering a creative renaissance during his rule.
- He himself was a talented poet and scholar, contributing significantly to Sanskrit literature.
- Promoted intellectual exchanges and provided support to scholars and artists.

Raja Bhoja (1010 - 1055)

- Revered as a polymath, he excelled in various fields like mathematics, astronomy, poetry, and music.
- Constructed the Bhojeshwar Temple in Bhopal, showcasing his architectural patronage.
- His reign marked a period of intellectual growth and cultural flourishing.

Rashtrakuta Dynasty (8th - 10th century)

Dantidurga (735 - 756)

- Established the Rashtrakuta dynasty after defeating local chieftains and asserting his rule.
- His victories marked the beginning of the Rashtrakuta ascendancy in the Deccan.
- Laid the foundation for a strong kingdom that would later expand significantly.

Krishna I (756 - 774)

- Achieved military successes, expanding the Rashtrakuta territory and quelling revolts.
- Patronized art and architecture, with the construction of the Kailasa Temple at Ellora being a testament to his grand vision.
- Contributed to the development of a distinct Rashtrakuta architectural style.

Indra III (914 - 929)

- Led the Rashtrakutas to their zenith with successful military campaigns and territorial expansion.
- Sponsored impressive temple construction projects that showcased intricate carvings and rock-cut architecture.
- His reign marked a phase of cultural and architectural brilliance in the Deccan.

Chola Dynasty (9th - 13th century)

Raja Raja Chola I (985 - 1014)

- Commissioned the construction of the Brihadeeswarar Temple, a masterpiece of Dravidian architecture.

- Expanded the Chola territories in South India and Sri Lanka through military conquests.
- Patronized the arts, leading to the growth of literature, sculpture, and music.

Rajendra Chola I (1012 - 1044)

- Undertook maritime expeditions that expanded Chola influence across Southeast Asia, enhancing trade and cultural ties.
- Established the Gangaikonda Cholapuram temple to commemorate his victories and achievements.
- Promoted Tamil literature, contributing to the development of Tamil poetry and literature.

Rajaraja Chola II (1146 - 1173)

- Revived the Chola dynasty after a period of decline and internal conflicts.
- Supported art, literature, and temple construction, fostering a cultural renaissance.
- His reign saw the continuation of Chola architectural excellence and cultural patronage.

Chalukya Dynasty (6th - 12th century)

Pulakeshin II (610 - 642)

- Successfully defended his kingdom against the invasion of Harsha Vardhana, asserting Chalukya power in the region.
- Expanded the Chalukya domain through military campaigns, enhancing the kingdom's territorial reach.
- Supported the construction of significant temples and architectural projects.

Vikramaditya II (733 - 746)

- Patronized arts and literature, contributing to the cultural enrichment of the Chalukya dynasty.
- Erected the Panchakuta Basadi in Badami, showcasing the intricate carving and architectural prowess of the dynasty.
- Consolidated the kingdom's position through diplomacy and strategic alliances.

Someshvara I (1042 - 1068)

- Implemented administrative reforms and effectively managed the kingdom's territories.
- Commissioned the Chennakesava Temple in Belur, an exemplar of Hoysala-Chalukya architecture.
- Maintained the Chalukya dynasty's cultural and architectural legacy, leaving behind a mark of significance.

Pala Dynasty (8th - 12th century)

Gopala (750 - 770)

- Founded the Pala dynasty and established a centralized administration, laying the groundwork for stable rule.
- His reign marked the beginning of the Pala era, characterized by cultural development and a focus on governance.
- Contributed to the promotion of Buddhism and patronage of Buddhist institutions.

Dharmapala (810 - 850)

- Revived Nalanda University and other Buddhist centers of learning, fostering intellectual growth.
- Sponsored the construction of numerous monasteries, contributing to the spread of Buddhism.
- Supported the study of philosophy, arts, and sciences, contributing to a vibrant scholarly environment.

Mahipala (988 - 1038)

- Expanded Pala territories through successful military campaigns, enhancing the dynasty's influence.
- Promoted art, literature, and architecture, adding to the cultural landscape of the Pala realm.
- Continued to support Buddhism and its institutions, contributing to the preservation and growth of Buddhist traditions.

Sena Dynasty (11th - 12th century)

Ballal Sena (1160 - 1179)

- Ballal Sena was a pivotal figure in the Sena dynasty, consolidating his power and stabilizing the administration.
- His rule was marked by a significant focus on art and culture, with the construction of several temples and monuments.
- Ballal Sena's patronage extended to literature, contributing to the development of Bengali literature.

Lakshman Sena (1179 - 1206)

- Lakshman Sens's reign witnessed external invasions and internal conflicts, leading to the decline of the Sena dynasty.
- He tried to hold his territories against the Turkic invasions of Muhammad bin Bakhtiyar Khilji, marking a period of significant challenges for the dynasty.
- Despite the challenges, he continued to support cultural and architectural endeavours.

Yadava Dynasty (9th - 14th century)

Bhillama V (1173 - 1192)

- Bhillama V was a prominent ruler of the Yadava dynasty, expanding his territories and consolidating his rule in the Deccan region.
- He successfully defended his kingdom against the forces of the Delhi Sultanate.
- Bhillama V's reign marked a phase of growth and political influence for the Yadava dynasty.

Krishna (1210 - 1247)

- Krishna's reign saw significant territorial expansion, and he established his capital at Devagiri (modern-day Daulatabad).
- He was known for his military victories and diplomatic prowess, navigating complex political scenarios.
- Krishna's patronage extended to literature, art, and architecture, contributing to the cultural landscape of the Yadava kingdom.

Ramachandra (1271 - 1309)

- Ramachandra was a prominent Yadava ruler, known for his administrative reforms and the development of Daulatabad as a cultural and political center.
- His patronage extended to art, literature, and architecture, fostering a period of cultural growth.
- Ramachandra's reign marked a relatively stable period for the Yadava dynasty, contributing to the region's development.

Khalji Dynasty (13th - 14th century)

Alauddin Khilji (1296 - 1316)

- Implemented economic reforms to stabilize prices and ensure the welfare of his subjects.
- Strengthened the military and defended the Delhi Sultanate against Mongol invasions.
- Introduced the "Dagh" system to mark horses and maintain an efficient cavalry.

Qutbuddin Mubarak Shah (1316 - 1320)

- Ruled during a relatively peaceful period, allowing for cultural and artistic endeavors.
- Contributed to the stability of the Delhi Sultanate after a tumultuous period of succession.
- Supported scholarship and poetry, fostering intellectual growth.

Khusro Khan (1320)

- Briefly ruled the Delhi Sultanate after Qutbuddin Mubarak Shah's assassination.
- His short reign contributed to the dynasty's instability and marked a transition phase.

Tughlaq Dynasty (14th century)

Ghiyasuddin Tughlaq (1321 - 1325)

- Founded the Tughlaq dynasty and introduced land reforms to ensure equitable distribution of resources.
- Focused on administrative efficiency by centralizing power and improving governance structures.
- Initiated measures to stabilize the economy and provide relief to farmers.

Muhammad bin Tughlaq (1325 - 1351)

- Known for his ambitious policies, attempted to shift the capital from Delhi to Daulatabad, showcasing his administrative vision.
- Introduced token currency and experimented with various economic reforms, though some were unsuccessful.
- His reign witnessed advancements in art, literature, and architecture.

Firuz Shah Tughlaq (1351 - 1388)

- Undertook restoration and construction projects, contributing to the architectural landscape of Delhi.
- Focused on welfare activities, including the establishment of hospitals, sarais (rest houses), and water reservoirs.
- Attempted to provide efficient governance by curbing corruption and promoting justice.

Ancient Indian Ports & Trade Centres

Ancient Indian Ports

- **Lothal:** Located in present-day Gujarat, Lothal was a major Indus Valley Civilization port city (c. 2400–1900 BCE). It had a well-planned dockyard and warehouse facilities, indicating a sophisticated maritime trade network.
- **Muziris:** Muziris, located in present-day Kerala, was a key port on the southwestern coast of India. It was a major center for trade between the Roman Empire, the Arabian Peninsula, and Southeast Asia during ancient times.
- **Barigaza (Bharuch):** Situated on the banks of the Narmada River in Gujarat, Barigaza was an important port for trade with the Roman Empire and other regions. It facilitated the movement of goods between India and the Western world.
- **Arikamedu:** Located near present-day Puducherry, Arikamedu was an ancient port that played a role in maritime trade between the Roman Empire and India. Archaeological evidence suggests that it was a bustling trade center.
- **Tamralipta:** Situated in present-day West Bengal, Tamralipta was an ancient port on the Bay of Bengal. It was an important trade hub for connections with Southeast Asia and other Indian Ocean regions.
- **Kaveripattinam:** Located in present-day Tamil Nadu, Kaveripattinam (also known as Puhar) was a significant port city during ancient times. It had trade connections with various regions, including Southeast Asia.
- **Barygaza (Broach):** Another major port in Gujarat, Barygaza (Broach) was a bustling trade center that facilitated commerce with the Roman Empire, the Arabian Peninsula, and other regions.
- **Sopara:** Situated near present-day Mumbai, Sopara was an ancient port city that served as a trade link between India and the Western world.
- **Korkai:** Located in present-day Tamil Nadu, Korkai was an important port during ancient times, connecting India with various regions in the Indian Ocean.
- **Pattanam:** Located in Kerala, Pattanam is an archaeological site believed to be the ancient port of Muziris. It has revealed valuable insights into the maritime trade network of ancient India.
- **Tamluk (West Bengal):** Located in present-day West Bengal, Tamluk was a prominent port on the Bay of Bengal that played a role in maritime trade with Southeast Asia and other regions.
- **Quilon (Kollam, Kerala):** Situated in present-day Kerala, Quilon (Kollam) was a bustling port that played a significant role in maritime trade with the Middle East and other Indian Ocean regions.

Ancient Trade Centres

- **Aihole:** Situated in present-day Karnataka, Aihole was a center of trade and cultural exchange during ancient times. It was known for its architecture, including rock-cut temples.
- **Dvaravati:** An ancient trade center situated in present-day Gujarat, Dvaravati was a hub for maritime trade, connecting India with the Persian Gulf and other regions.
- **Mathura:** Positioned in present-day Uttar Pradesh, Mathura was not only a trade center but also a cultural and religious hub, known for its connection to the life of Lord Krishna.
- **Kalyan:** Located in present-day Maharashtra, Kalyan was an important trade and cultural center that facilitated interactions between India and the Middle East.
- **Surat:** This ancient port in Gujarat became a major trade hub during the medieval period, connecting India with the Ottoman Empire, Europe, and other regions.
- **Mahabalipuram:** Located in Tamil Nadu, Mahabalipuram was known for its rock-cut temples and sculptures. It likely served as a maritime trade center due to its coastal location.
- **Pattadakal:** Another significant trade and cultural center in Karnataka, Pattadakal was known for its architectural achievements and cultural interactions.
- **Nalanda:** While not a port, Nalanda was a renowned center of learning and attracted scholars and students from across Asia. It contributed to cultural and intellectual exchanges.

Ancient Indian Archaeological Sites

Archaeological Sites and their Importance

- **Sanchi Stupa (Madhya Pradesh):** An ancient Buddhist complex, the Sanchi Stupa dates back to the Mauryan period (3rd century BCE). It showcases intricate carvings depicting Buddhist teachings and stories.
- **Harappa (Present day-Pakistan):** It showcases remarkable urban planning with a grid-like street layout, well-organized residential areas, and an advanced drainage system. The city's infrastructure included public baths, granaries, and multi-story houses, reflecting a sophisticated level of urban development.
- **Mohenjo-Daro (Larkana District, Sindh, Pakistan):** One of the iconic features of Mohenjo-daro is the Great Bath, a large and well-built public bathing area. This sophisticated structure with brickwork, steps, and a surrounding veranda suggests that it held ritual or ceremonial significance.
- **Ajanta and Ellora Caves (Maharashtra):** These cave complexes house exquisite rock-cut sculptures and frescoes, spanning from the 2nd century BCE to the 10th century CE. They reflect Buddhism, Hinduism, and Jainism.
- **Konark Sun Temple (Odisha):** Built in the 13th century, the Konark Sun Temple is a marvel of Odishan architecture, depicting the chariot of the Sun God Surya with intricately carved wheels and sculptures.
- **Mahabalipuram (Tamil Nadu):** Known for its shore temples and rock-cut sculptures, Mahabalipuram dates from the 7th and 8th centuries. It showcases Pallava art and narratives from Hindu mythology.
- **Nalanda (Bihar):** The ancient Nalanda University (5th-12th centuries CE) was a renowned center of learning, attracting scholars from across Asia. It housed monasteries, libraries, and lecture halls.
- **Fatehpur Sikri (Uttar Pradesh):** Built by Emperor Akbar in the late 16th century, Fatehpur Sikri was a Mughal capital known for its stunning architecture, including the Buland Darwaza and Jama Masjid.
- **Khajuraho (Madhya Pradesh):** The temples of Khajuraho (10th-11th centuries) are famous for their intricate erotic sculptures. They represent Nagara-style architecture and depict aspects of life in ancient India.
- **Hampi (Karnataka):** Hampi was the capital of the Vijayanagara Empire (14th-16th centuries). It features stunning ruins, including temples, markets, and royal buildings.
- **Sarnath (Uttar Pradesh):** Sarnath is where Gautama Buddha gave his first sermon. The site includes the Dhamek Stupa, where relics of the Buddha are believed to be enshrined.
- **Kalibangan (Indus Valley Civilization):** Located in Rajasthan, Kalibangan provides insights into the early Harappan culture. It features a well-planned citadel, a lower town, and evidence of craft activities.
- **Lothal (Indus Valley Civilization):** Situated in Gujarat, Lothal was an Indus Valley port city with a dockyard and planned urban layout, showcasing maritime trade and advanced urbanism.
- **Rakhigarhi (Indus Valley Civilization):** Located in Haryana, Rakhigarhi is one of the largest and most ancient Harappan sites. Excavations have revealed a well-organized urban settlement.
- **Dholavira (Indus Valley Civilization):** Situated in Gujarat, Dholavira is known for its impressive city planning, water management systems, and unique features like the Great Rann of Kutch.
- **Bhimbetka Rock Shelters (Madhya Pradesh):** These rock shelters showcase prehistoric art, dating back over 30,000 years. The paintings depict scenes of daily life, animals, and rituals.
- **Mandu (Madhya Pradesh):** Also known as Mandavgarh, this ancient city has well-preserved structures from the medieval period, including palaces, mosques, and tombs.
- **Aihole (Karnataka):** An archaeological site with rock-cut temples and inscriptions, Aihole displays a variety of architectural styles, reflecting the Chalukyan and other dynasties.

- **Pataliputra (Patna, Bihar):** The ancient capital of several empires, including the Mauryas and Guptas, Pataliputra featured grand palaces, administrative buildings, and a bustling urban life.
- **Warangal Fort (Telangana):** This fort, built during the Kakatiya dynasty (12th-14th centuries), is known for its massive stone gateways and intricate carvings.
- **Junagadh Rock Inscriptions (Gujarat):** These inscriptions, found on Girnar Hill, provide valuable information about the Mauryan dynasty and the region's history.
- **Rani Ki Vav (Gujarat):** An intricately designed stepwell in Patan, Rani Ki Vav features sculptures depicting Hindu deities, sages, and mythological stories.
- **Sanchi Caves (Madhya Pradesh):** Not to be confused with the Sanchi Stupa, the Sanchi Caves are a series of rock-cut chambers with inscriptions and sculptures.
- **Buddhist Caves of Maharashtra:** These caves, including Ajanta, Ellora, Kanheri, and Karla, contain elaborate sculptures, paintings, and monastic complexes related to Buddhism.
- **Bhaja Caves (Maharashtra):** These rock-cut caves are known for their ancient inscriptions, sculptures, and a fascinating "chaitya" (prayer hall).
- **Chittorgarh Fort (Rajasthan):** The largest fort in India, Chittorgarh Fort is known for its historical significance and architectural marvels.
- **Lepakshi Temple Complex (Andhra Pradesh):** Known for its intricate sculptures and the hanging pillar, Lepakshi is a 16th-century temple complex reflecting Vijayanagara architecture.
- **Udayagiri and Khandagiri Caves (Odisha):** These rock-cut caves house inscriptions, sculptures, and Jain religious symbols, providing insights into ancient Jainism.
- **Jageshwar Group of Temples (Uttarakhand):** This cluster of temples, built between the 7th and 13th centuries, is dedicated to Lord Shiva and exemplifies Kumaoni architecture.
- **Bidar Fort (Karnataka):** Built during the Bahmani Sultanate period, Bidar Fort has impressive structures, including mosques, palaces, and water reservoirs.
- **Nalanda (Bihar):** The ancient Nalanda University was a renowned center of learning, attracting scholars from across Asia and showcasing the intellectual heritage of ancient India.
- **Thanjavur Maratha Palace (Tamil Nadu):** The palace complex in Thanjavur reflects Maratha architecture and features the famous Saraswathi Mahal Library.
- **Amravati Stupa (Andhra Pradesh):** The Amravati Stupa was an important Buddhist monument, adorned with intricate carvings and reliefs depicting the life of the Buddha.
- **Qutub Minar Complex (Delhi):** This UNESCO World Heritage Site includes the iconic Qutub Minar, ancient inscriptions, and the Quwwat-ul-Islam Mosque.
- **Bhagwan Mahavir Wildlife Sanctuary (Goa):** This site contains ancient rock carvings and inscriptions, providing insights into the prehistoric cultures of the region.
- **Rohtas Fort (Bihar):** Constructed during the reign of Sher Shah Suri, Rohtas Fort is known for its strategic location and impressive architecture.
- **Kalibangan (Rajasthan):** A Harappan site, Kalibangan has revealed insights into the Indus Valley Civilization, with evidence of town planning and advanced features.
- **Sittanavasal (Tamil Nadu):** This site includes rock-cut cave temples adorned with frescoes, showcasing a unique blend of Jain and Dravidian art.
- **Sri Surya Pahar (Assam):** This archaeological site contains rock-cut sculptures and temples, representing a mix of Hindu, Buddhist, and Jain traditions.

British Education System in India

Macaulay's Minute on Education (1835)

- Thomas Babington Macaulay's Minute on Education proposed the promotion of English education in India, arguing that it would create a class of Indians who would be "Indian in blood and color, but English in taste, in opinions, in morals, and in intellect."
- He believed that English education would serve as a means to produce a group of Indians who could assist in the administration of the British Empire.
- Indian nationalists reacted strongly to Macaulay's proposal. They viewed it as a deliberate attempt to erase Indian culture and heritage, replacing it with Western values and norms.
- It became a point of contention between the British colonial authorities and Indian nationalists. It fuelled debates about the direction of education and the preservation of Indian languages, culture, and identity.

Wood's Despatch (1854)

- The Wood's Despatch, officially titled "Despatch on the Educational Dispatch of the East India Company," was a significant policy statement issued by Sir Charles Wood, the President of the Board of Control for India. It laid out a comprehensive framework for education in India.
- It advocated for the establishment of a systematic education system with clear divisions between primary, secondary, and higher education.
- It also recommended the creation of universities and colleges, promotion of vernacular languages, teacher training, and the incorporation of Western knowledge.

- Indian nationalists recognized the potential benefits of modern education but were cautious about the British intent behind promoting English education. They saw it as a means to create a class of loyal British-educated Indians rather than fostering true empowerment.

Indian Education Commission (1882 - Hunter Commission)

- The Hunter Commission, chaired by Sir William Hunter, was appointed to assess the state of education in India and make recommendations for reforms.
- It emphasized the importance of primary education, proposed clear divisions between different levels of education, advocated for teacher training, and recommended measures for improving the quality of education.
- The commission's recommendations led to reforms in primary and secondary education, and the establishment of new norms for teacher training and curriculum development.
- Indian nationalists appreciated the emphasis on primary education and indigenous languages but criticized the commission for not fully addressing the demand for educational autonomy and self-governance.

Indian Universities Commission (1902 - Curzon Commission)

- This commission, under Lord Curzon's viceroyalty, aimed to review and improve the state of Indian universities.
- The commission recommended changes in university governance, the introduction of a system of affiliation, improvements in examination systems, and the need to focus on research and postgraduate education.
- The commission's recommendations led to reforms in university administration, examination practices, and the strengthening of postgraduate education.
- Indian nationalists were critical of the Curzon Commission's recommendations, as they perceived it as an attempt to centralize control over universities. They called for greater representation of Indians in decision-making processes.

Sadler Commission (1917-1919)

- Led by Sir Michael Sadler, the commission assessed the state of education in India and proposed measures for its improvement.
- The commission highlighted the importance of vocational and technical education, advocated for the expansion of primary education, and emphasized the preservation of Indian languages and culture.
- The Sadler Commission's recommendations led to reforms that focused on vocational training, primary education, and cultural preservation. It also prompted discussions about the role of education in shaping national identity.
- The Sadler Commission's recommendations were generally well-received by Indian nationalists. They saw it as an opportunity to enhance Indian culture and languages while improving the quality of education.

Hartog Committee (1929)

- Chaired by Sir John S. Hartog, this committee examined university education in India.
- The committee recommended reforms in curriculum, examination systems, and the promotion of research. It stressed the importance of adapting universities to societal needs.
- The Hartog Committee's recommendations influenced changes in university education, encouraging a focus on research, and adapting curriculum and examination systems.
- Nationalists appreciated the focus on improving university education, but they also stressed the need for more representation of Indians in academic governance and decision-making.

Wardha Scheme of Basic Education (1937)

- Led by Mahatma Gandhi and his associates, the Wardha Scheme proposed a holistic approach to education.
- The scheme emphasized self-reliance, vocational training, integration with rural life, and character development. It aimed to create well-rounded individuals capable of contributing to the nation's development.
- The Wardha Scheme offered an alternative vision for education, aligning with Mahatma Gandhi's principles of self-sufficiency and community engagement.
- The Wardha Scheme resonated with Indian nationalists and aligned with Mahatma Gandhi's vision of holistic education that integrated character development and self-sufficiency. Nationalists embraced the scheme's emphasis on rural empowerment and national identity.

Sargent Plan (1944)

- Proposed by Sir John Sargent, the plan aimed at post-war reconstruction and development.
- The plan suggested reforms in primary and secondary education, vocational training, and the expansion of technical and adult education.
- Although the Sargent Plan was not fully implemented due to the changing political climate, it contributed to discussions about education and development in the post-war era.
- As World War II intensified, nationalist movements gained momentum. While the Sargent Plan's focus on education was acknowledged, the broader political context led many nationalists to prioritize larger goals of freedom and self-governance.

Geography

Drainage System of India

Major Rivers in India

Ganges (Ganga) River

- **States:** Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal
- **Origin:** Gangotri Glacier in the Himalayas
- **Course:** Flows through the Gangetic plains, passing through cities like Haridwar, Varanasi, and Kolkata
- **Confluence:** Joins the Bay of Bengal through the Sundarbans Delta in West Bengal
- **Significance:** Sacred river in Hinduism, central to religious rituals, bathing, and cultural practices.
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Yamuna, Gandak, Ghaghara (Sarayu), Kosi, Son

Brahmaputra River

- **States:** Arunachal Pradesh, Assam
- **Origin:** Tibet (known as Yarlung Tsangpo)
- **Course:** Flows through Arunachal Pradesh, Assam, and enters Bangladesh
- **Confluence:** Joins the Ganges to form the world's largest delta in the Bay of Bengal
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Subansiri, Lohit, Dibang, Kameng

Indus River

- **States/UTs:** Jammu and Kashmir, Punjab
- **Origin:** Tibet (Sengge Zangbo) and Mansarovar Lake
- **Course:** Flows through Ladakh region of Jammu and Kashmir and into Pakistan
- **Confluence:** Joins the Arabian Sea near Karachi in Pakistan
- **Historical Significance:** The Indus Valley Civilization emerged along its banks, contributing to ancient Indian history
- **Drainage Pattern:** Radial
- **Notable Tributaries:** Sutlej, Chenab, Jhelum

Godavari River

- **States:** Maharashtra, Telangana, Andhra Pradesh
- **Origin:** Trimbak in Maharashtra
- **Course:** Flows through Maharashtra, Telangana, Andhra Pradesh, and enters the Bay of Bengal
- **Confluence:** Joins the Bay of Bengal near Rajahmundry, forming a large delta
- **Length:** Second longest river in India
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Pranhita, Manjira, Penganga, Wardha

Krishna River

- **States:** Maharashtra, Karnataka, Telangana, Andhra Pradesh
- **Origin:** Mahabaleshwar in Maharashtra
- **Course:** Flows through Maharashtra, Karnataka, Telangana, and Andhra Pradesh
- **Confluence:** Joins the Bay of Bengal near Hamsaladeevi in Andhra Pradesh
- **Water Resource:** Provides water for irrigation and power generation
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Tungabhadra, Bhima, Koyna, Musi

Narmada River

- **States:** Madhya Pradesh, Gujarat
- **Origin:** Amarkantak Plateau in Madhya Pradesh
- **Course:** Flows through Madhya Pradesh and Gujarat
- **Confluence:** Flows into the Gulf of Khambhat (Arabian Sea)
- **Notable:** Narmada Valley is home to the Sardar Sarovar Dam, a major irrigation and hydropower project
- **Drainage Pattern:** Trellis
- **Notable Tributaries:** Hiran, Tawa, Denwa, Sher

Tapti River

- **States:** Madhya Pradesh, Maharashtra, Gujarat
- **Origin:** Betul district of Madhya Pradesh
- **Course:** Flows through Madhya Pradesh, Maharashtra, and Gujarat
- **Confluence:** Joins the Gulf of Khambhat (Arabian Sea)
- **Hydroelectricity:** Contributes to power generation
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Purna, Girna, Panzara, Aner

Mahanadi River

- **States:** Chhattisgarh, Odisha
- **Origin:** Chhattisgarh (Hasdeo River and Seonath River)
- **Course:** Flows through Chhattisgarh and Odisha
- **Confluence:** Empties into the Bay of Bengal near Paradip, Odisha
- **Water Source:** Vital for irrigation and water supply
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Tel, Ib, Ong, Jonk

Yamuna River

- **States:** Uttarakhand, Himachal Pradesh, Uttar Pradesh, Haryana, Delhi

- **Origin:** Yamunotri Glacier in Uttarakhand
- **Course:** Flows through Uttarakhand, Himachal Pradesh, Uttar Pradesh, Haryana, and Delhi
- **Confluence:** Joins the Ganges at Allahabad (Prayagraj)
- **Significance:** Sacred river in Hinduism, associated with several historical and cultural sites
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Chambal, Sindh, Betwa, Ken

Sabarmati River

- **State:** Gujarat
- **Origin:** Aravalli Range near Udaipur, Rajasthan
- **Course:** Flows through Gujarat
- **Confluence:** Joins the Gulf of Khambhat (Arabian Sea)
- **Notable:** Sabarmati Ashram, associated with Mahatma Gandhi, is situated on its banks
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Hathmati, Wakal

Luni River

- **State:** Rajasthan
- **Origin:** Aravalli Range in Rajasthan
- **Course:** Flows through Rajasthan and parts of Gujarat
- **Confluence:** Disappears in the Rann of Kutch (Thar Desert)
- **Characteristic:** Often referred to as a "river of salt" due to its saline nature
- **Drainage Pattern:** Exotic (Often ends in a dry area)
- **Notable Tributaries:** Joins the Rann of Kutch, no significant tributaries

Cauvery (Kaveri) River

- **States:** Karnataka, Tamil Nadu
- **Origin:** Talakaveri in the Western Ghats, Karnataka
- **Course:** Flows through Karnataka and Tamil Nadu
- **Confluence:** Empties into the Bay of Bengal at Poompuhar, Tamil Nadu
- **Water Dispute:** The Cauvery water dispute between Karnataka and Tamil Nadu is a longstanding issue.
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Kabini, Hemavati, Bhavani, Amaravathi

Sutlej River

- **States:** Himachal Pradesh, Punjab, Haryana
- **Origin:** Tibet (Mansarovar Lake)
- **Course:** Flows through Himachal Pradesh, Punjab, and Haryana
- **Confluence:** Joins the Chenab River in Pakistan
- **Historical:** The Indus Valley Civilization had settlements along the Sutlej's banks.
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Beas, Ravi, Ghaggar-Hakra (Seasonal)

Chenab River

- **States/UTs:** Jammu and Kashmir
- **Origin:** Himachal Pradesh (Confluence of Chandra and Bhaga Rivers)
- **Course:** Flows through Jammu and Kashmir
- **Confluence:** Joins the Sutlej in Pakistan, forming the Panjnad River
- **Tributaries:** Indus River's major tributary in the region
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Jhelum, Ravi

Ghaggar-Hakra River

- **States:** Haryana, Punjab, Rajasthan
- **Origin:** Himalayas and Aravalli Range
- **Course:** Flows through Haryana, Punjab, and Rajasthan
- **Disappears:** Generally dries up in the Thar Desert, with a significant historical connection to the ancient Sarasvati River.
- **Drainage Pattern:** Irradiant (Often dries up before reaching the sea)
- **Notable Tributaries:** Tangri, Markanda

Gandak River

- **States:** Uttar Pradesh, Bihar
- **Origin:** Tibet (Mount Kailash region)
- **Course:** Flows through Uttar Pradesh and Bihar
- **Confluence:** Joins the Ganges near Patna, Bihar
- **Transboundary:** Flows through Nepal before entering India
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Burhi Gandak, Trishuli, Saptakoshi

Lohit River

- **States:** Arunachal Pradesh
- **Origin:** Tibet (Zayul Chu River)
- **Course:** Flows through Arunachal Pradesh
- **Confluence:** Joins the Brahmaputra in Assam
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Dibang, Siang (Brahmaputra's main tributary)

Subansiri River

- **States:** Arunachal Pradesh, Assam
- **Origin:** Tibet (Chemayungdung Glacier)
- **Course:** Flows through Arunachal Pradesh and Assam
- **Confluence:** Joins the Brahmaputra in Assam
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Kamla, Ranganadi

Damodar River

- **States:** Jharkhand, West Bengal
- **Origin:** Chota Nagpur Plateau in Jharkhand
- **Course:** Flows through Jharkhand and West Bengal
- **Confluence:** Joins the Haldia-Kolkata port on the Bay of Bengal

- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Barakar, Konar, Bokaro

Betwa River

- **States:** Madhya Pradesh, Uttar Pradesh
- **Origin:** Vindhya Range in Madhya Pradesh
- **Course:** Flows through Madhya Pradesh and Uttar Pradesh
- **Confluence:** Joins the Yamuna River in Uttar Pradesh
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Dhasan, Bina

Brahmani River

- **States:** Odisha
- **Origin:** Kendujhar district in Odisha
- **Course:** Flows through Odisha
- **Confluence:** Joins the Bay of Bengal near Dhamra Port
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Sankh, Kelo

Tungabhadra River

- **States:** Karnataka, Andhra Pradesh
- **Origin:** Tungabhadra River and Krishna River
- **Course:** Flows through Karnataka and Andhra Pradesh
- **Confluence:** Joins the Krishna River in Andhra Pradesh
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Bhadra, Hagari

Ghaghara (Saryu) River

- **States:** Uttarakhand, Uttar Pradesh, Bihar
- **Origin:** Tibet (Mapchachungo Glacier)
- **Course:** Flows through Uttarakhand, Uttar Pradesh, and Bihar
- **Confluence:** Joins the Ganges near Chapra, Bihar
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Rapti, Kuwana

Son River

- **States:** Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Bihar
- **Origin:** Amarkantak Plateau in Madhya Pradesh
- **Course:** Flows through Chhattisgarh, Madhya Pradesh, Uttar Pradesh, and Bihar
- **Confluence:** Joins the Ganges near Patna, Bihar
- **Drainage Pattern:** Dendritic
- **Notable Tributaries:** Rapti, Kuwana

Drainage Pattern in India

Dendritic Drainage Pattern

- This is the most common drainage pattern in India and resembles the branches of a tree.
- It occurs in regions where the underlying rock and soil are relatively uniform, allowing water to flow in multiple directions.
- Examples include the Ganges, Godavari, Krishna, and Yamuna rivers.

Radial Drainage Pattern

- In this pattern, rivers flow outward from a central high point.
- It's typically observed in volcanic regions where streams radiate outwards from a central volcano.
- While not as widespread in India, some rivers in the Himalayas exhibit radial patterns.
- Rivers like Narmada, Son and Mahanadi form radial drainage pattern.

Trellis Drainage Pattern

- In a trellis pattern, main rivers are joined by smaller tributaries at right angles.
- This pattern often forms in regions with alternating layers of resistant and easily eroded rock.
- The Narmada and Tapti rivers follow a trellis pattern as they flow through the Vindhya Range.

Rectangular Drainage Pattern

- Rectangular patterns form where streams follow fault lines or fractures in the landscape.
- These fractures create right-angle bends in rivers.
- This pattern is less common in India but can be found in certain regions with significant tectonic activity.
- The Chambal River and its tributaries in northern and central India exhibit a rectangular pattern due to the underlying fault lines and fractures.

Annular Drainage Pattern

- Annular patterns appear as a series of concentric circles and are found in domed landscapes, often associated with anticlines and synclines.
- While not as prominent in India, some circular depressions and basins exhibit this pattern.
- Lonar Lake in Maharashtra showcases an annular pattern due to its formation within a circular crater, created by a meteor impact.

Parallel Drainage Pattern

- Parallel patterns occur when rivers and streams flow parallel to each other, typically on steep slopes.
- This can be seen in regions with strong slope gradients, such as the Western Ghats in parts of Karnataka.
- The numerous parallel streams and rivers that flow down the Western Ghats in states like Kerala and Karnataka demonstrate a parallel pattern.

Barbed Drainage Pattern

- In this pattern, tributaries join the main river at acute angles.
- This can occur when there is a change in rock types or slopes, causing streams to shift direction abruptly.
- The Ghaggar-Hakra River and its tributaries, especially the seasonal ones, display a barbed pattern due to the varying slopes and sediment deposition.

Centripetal Drainage Pattern

- Centripetal patterns involve rivers converging towards a central low point.
- This can be found in structural basins or circular depressions.
- Sambhar Lake in Rajasthan, a closed basin, displays a centripetal pattern as the streams and rivers converge towards its central lowest point.

Factors Affecting Indian Monsoon

Major Factors that Affect Indian Monsoon

Himalayan Barrier

- The Himalayas block the cold and dry air masses coming from Central Asia during the summer monsoon season.
- This barrier forces the warm and moist air from the Indian Ocean to ascend, cool, and release heavy rainfall over the subcontinent.
- The Himalayas create an orographic effect, causing increased rainfall on the windward side (northern slopes) and a rain shadow region on the leeward side.
- This uplift of moist air contributes to the formation of the South Asian monsoon trough, a low-pressure region responsible for the onset and intensity of the monsoon.

Pressure Gradient

- The pressure gradient between the landmass of Central Asia (high pressure) and the Indian Ocean (low pressure) drives the Indian monsoon winds.
- The low pressure over the Indian Ocean during summer draws in moist air from the ocean to fill the void created by the high-pressure region over land.
- This pressure difference is responsible for the seasonal reversal of winds, characterized by the shift from northeast winds (winter) to southwest winds (summer).
- The establishment of the low-pressure system over India sets the stage for the moist air to be carried by the southwest monsoon winds.

Jet Streams

- The subtropical westerly jet stream, located at around 27,000 to 35,000 feet in the atmosphere, plays a role in the Indian monsoon.
- During the monsoon season, if the jet stream is positioned to the north, it helps in steering and intensifying the moist air towards the Indian subcontinent.
- The jet stream's movement and strength can influence the position of the monsoon trough and the distribution of rainfall.
- A stronger jet stream tends to pull the monsoon winds northward, leading to more widespread and intense rainfall.

I.T.C.Z. (Intertropical Convergence Zone)

- The I.T.C.Z. is a region where trade winds from the northern and southern hemispheres meet.
- It follows the Sun's movement, shifting northward during the northern hemisphere's summer.
- As the I.T.C.Z. moves north, it draws in moist air from the Indian Ocean, leading to the onset and intensification of the monsoon.
- The I.T.C.Z.'s position affects the distribution of rainfall, and its interaction with other factors can influence the monsoon's behaviour.

El Nino and La Nina

- El Niño is a warming of the central and eastern Pacific Ocean that disrupts global weather patterns.
- During El Niño, the warming reduces the temperature gradient between the western and central Pacific, affecting the monsoon's normal dynamics.
- El Niño tends to weaken the Indian monsoon, leading to decreased rainfall, droughts, and adverse impacts on agriculture and water resources.
- Conversely, La Niña, the cooling phase of the Pacific Ocean, can enhance the Indian monsoon by creating conditions that favour the influx of moisture and increased rainfall.

Indian Ocean Dipole (IOD)

- The IOD is a sea surface temperature anomaly in the Indian Ocean, impacting the monsoon's behaviour.
- A positive IOD, with warmer waters in the western Indian Ocean, can lead to increased evaporation and moisture content, intensifying the monsoon.
- A negative IOD, characterized by cooler waters in the western Indian Ocean, can weaken the monsoon by reducing moisture availability.
- The IOD's influence on the monsoon can result in fluctuations in rainfall patterns and agricultural productivity.

Land and Sea Temperature Contrast

- During summer, the landmass heats up more quickly than the surrounding oceans.
- This creates a low-pressure area over the land, drawing in moist air from the high-pressure Indian Ocean to fill the void.
- The temperature contrast between land and sea is essential for creating the pressure gradient that drives the monsoon winds.
- This temperature difference causes the southwest monsoon winds to bring in moisture-laden air, resulting in the onset of the monsoon rains.

Topography and Orographic Effect

- The Western Ghats and Eastern Himalayas influence monsoon rainfall due to their elevation and orientation.

- The Western Ghats force moist air from the Arabian Sea to rise, cool, and release heavy rainfall on the windward side (western coast).
- The Eastern Himalayas deflect the monsoon winds, causing them to ascend and release rainfall on the north-eastern states.
- The orographic effect contributes to regional variations in monsoon intensity and distribution across the sub-continent.

Indian Ocean Heat Content

- The heat accumulated in the Indian Ocean during the preceding months influences the temperature and moisture content of incoming air masses.
- Warm ocean waters increase evaporation rates, enhancing the moisture content of the monsoon winds.
- This heat content contributes to the intensity and moisture availability of the monsoon rains.
- The Indian Ocean's heat reservoir plays a crucial role in shaping the monsoon's behaviour and its impact on India's climate.

Oceanic Currents

- Warm ocean currents, such as the Somali Current, transport warm water towards the Arabian Sea, increasing moisture levels in the monsoon winds.
- Cold ocean currents, like the Agulhas Current, can influence the temperature and moisture content of the air masses interacting with the monsoon.
- Ocean currents contribute to the overall moisture supply available to the monsoon system.
- The interaction between oceanic currents and monsoon winds influences the monsoon's behaviour and the distribution of rainfall.

Vegetation and Land Use

- Dense vegetation, like forests, can enhance local rainfall by releasing moisture through transpiration.
- Urbanization and deforestation can alter the land's ability to retain moisture, potentially affecting the local and regional monsoon patterns.
- Changes in land use can influence temperature gradients and impact the overall monsoon circulation.
- The degradation of forests and natural ecosystems can disrupt the delicate balance of moisture exchange, potentially leading to changes in monsoon behaviour.

Snow Cover in the Himalayas

- The extent of snow cover in the Himalayas during winter affects the monsoon's behaviour.
- A higher snow cover leads to increased melting during the summer, contributing to river flows and potentially enhancing the monsoon's intensity.
- Reduced snow cover can lead to decreased water availability during the monsoon season, impacting agriculture and water resources.
- Changes in snow cover patterns due to climate variability can influence the monsoon's hydrological cycle.

Atmospheric Circulation and Weather Systems

- Large-scale weather systems like the Indian Ocean High and the Tibetan High play a role in shaping the monsoon's progression.
- These systems influence wind patterns and pressure gradients that steer moisture-laden air towards India.
- The formation and movement of tropical cyclones can interact with the monsoon, leading to enhanced rainfall or disruptive weather conditions.
- The interaction between these atmospheric features and the monsoon dynamics affects its onset, progression, and withdrawal.

Global Climate Change and Anthropogenic Factors

- Climate change and human activities can impact the monsoon through altered greenhouse gas concentrations and land use changes.
- Rising temperatures can lead to changes in ocean temperatures, affecting the Indian Ocean Dipole and El Niño/La Niña patterns.
- Urbanization, deforestation, and pollution can modify local temperature and moisture gradients, influencing monsoon circulation.
- Understanding and mitigating these anthropogenic influences is critical for managing the potential impacts of climate change on the monsoon.

Regional and Local Factors

- Geographic features like valleys, plateaus, and coastal areas can influence local wind patterns and rainfall distribution.
- Coastal areas experience a modified monsoon due to the influence of sea breezes and interactions with the ocean.
- Landlocked regions might experience delayed and less intense monsoons due to reduced moisture availability.
- Microclimates within different regions contribute to the overall complexity of the monsoon's behaviour.

Monsoon Interannual Variability

- The Indian monsoon exhibits interannual variability, leading to wet and dry phases over consecutive years.
- Factors like El Niño, La Niña, and the Indian Ocean Dipole contribute to this variability.
- Understanding these cycles is crucial for predicting monsoon behaviour and managing its impacts on agriculture and water resources.
- Long-term records and monitoring help in identifying trends and patterns in monsoon variability.

Major Wetlands of India

Ramsar Sites in India

State-wise Distribution		
State/UT	**No. of Sites**	**Names of Sites**
Andhra Pradesh	1	Kolleru Lake
Assam	1	Deepor Beel
Bihar	1	Kanwar Lake
Goa	1	Nanda Lake
Gujarat	4	Khijadiya, Nalsarovar, Thol Lake, Wadhvana Wetland
Haryana	2	Sultanpur National Park, Bhindawas Wildlife Sanctuary
Himachal Pradesh	3	Chandra Taal, Pong Dam Lake, Renuka Lake
Jammu and Kashmir	5	Hokersar Wetland, Hygam Wetland Conservation Reserve, Shallbugh Wetland Conservation Reserve, Surinsar-Mansar Lakes,Wular Lake
Karnataka	1	Ranganathittu Bird Sanctuary
Kerala	3	Ashtamudi Wetland, Sasthamkotta Lake, Vembanad-Kol Wetland
Ladakh	2	Tso Kar, Tsomoriri Lake
Madhya Pradesh	4	Bhoj Wetland, Sakhya Sagar, Sirpur Lake, Yashwant Sagar
Maharashtra	3	Lonar Lake, Nandur Madhameshwar, Thane Creek
Manipur	1	Loktak Lake
Mizoram	1	Pala Wetland
Odisha	6	Ansupa Lake, Bhitarkanika Mangroves, Chilika Lake, Hirakud Reservoir, Satkosia Gorge, Tampara Lake
Punjab	6	Beas Conservation Reserve, Harike Wetland, Kanjli Wetland, Keshopur-Miani Community Reserve, Nangal Wildlife Sanctuary, Ropar Wetland
Rajasthan	2	Keoladeo National Park, Sambhar Lake
Tamil Nadu	14	Chitrangudi Bird Sanctuary, Gulf of Mannar Marine Biosphere Reserve, Kanjirankulam Bird Sanctuary, Karikili Bird Sanctuary, Koonthankulam Bird Sanctuary, Pallikarnai Marsh Reserve Forest, Pichavaram Mangrove, Point Calimere Wildlife and Bird Sanctuary, Suchindram Theroor Wetland Complex, Udhayamarthandapuram Bird Sanctuary, Vadavur Bird Sanctuary, Vedanthangal Bird Sanctuary, Vellode Bird Sanctuary, Vembannur Wetland Complex
Tripura	1	Rudrasagar Lake
Uttar Pradesh	10	Bakhira Sanctuary, Haiderpur Wetland, Nawabganj Bird Sanctuary, Parvati Arga Bird Sanctuary, Saman Bird Sanctuary, Samaspur Bird Sanctuary, Sandi Bird Sanctuary, Sarsai Nawar Jheel, Sur Sarovar, Upper Ganga River
Uttarakhand	1	Asan Barrage
West Bengal	2	East Kolkata Wetlands, Sundarban Wetland

Types of Wetlands in India

Swamps

- Swamps are wetlands characterized by standing water and water-tolerant vegetation, which includes trees, shrubs, and grasses.
- They often form in low-lying areas where water accumulates due to poor drainage.
- Swamps are important for flood control, water purification, and as habitats for various wildlife.
- They can have diverse ecosystems, supporting amphibians, birds, and aquatic plants.
- **Example:** The Sundarbans, the largest mangrove swamp in the world, is a UNESCO World Heritage Site shared between India and Bangladesh.

Marshes

- Marshes are wetlands with waterlogged soils and mostly herbaceous vegetation.
- They can be classified as freshwater, saltwater, or brackish based on their location and salinity.
- Marshes act as natural filters, helping to trap sediment and pollutants from runoff.
- Many species of migratory birds use marshes as stopover points during their journeys.
- **Example:** Bhitarkanika Mangroves in Odisha is a significant marshland with rich biodiversity, including saltwater crocodiles and various bird species.

Lakes and Reservoirs

- Lakes are large, still water bodies surrounded by land, while reservoirs are artificially created for water storage and irrigation.
- Lakes are essential for freshwater supply, recreation, and supporting aquatic life.
- Many lakes, such as Wular Lake in Jammu and Kashmir, are important for local livelihoods and biodiversity conservation.
- **Example:** Dal Lake in Jammu and Kashmir is a famous lake with cultural and ecological importance.

Ponds

- Ponds are small, shallow water bodies that can be natural or human-made.

- They are often used for aquaculture, irrigation, and water supply in rural areas.
- Ponds support various aquatic plants and animals, making them valuable habitats.
- **Example:** Sambhar Lake in Rajasthan, the largest saline lake in India, plays a role in both bird migration and salt production.

Tanks

- Tanks are artificial water bodies built to store water for irrigation and domestic use, particularly in arid and semi-arid regions.
- They have cultural and historical significance and contribute to local water management.
- Tanks can provide breeding grounds for fish and support biodiversity.
- **Example:** The Kallanai Dam in Tamil Nadu is an ancient tank that still serves as an irrigation reservoir.

Estuaries

- Estuaries are transitional zones where freshwater rivers meet the sea, creating a mix of saltwater and freshwater conditions.
- They are highly productive areas and serve as nurseries for many marine species.
- Estuaries provide essential breeding and feeding habitats for various fish and bird species.
- **Example:** Chilika Lake in Odisha is a brackish water lagoon that serves as a vital habitat for migratory birds and local communities.

Mangroves

- Mangroves are salt-tolerant trees and shrubs that grow along coastlines and tidal areas.
- They offer protection against coastal erosion and act as buffers during storms.
- Mangroves support diverse marine life, including crustaceans, fish, and birds.
- **Example:** Apart from the Sundarbans, the Bhitarkanika Mangroves and Pichavaram Mangrove Forest in Tamil Nadu are notable examples.

Wet Meadows

- Wet meadows are grassy areas with a high water table.
- They act as natural filters, improving water quality by trapping pollutants.
- Wet meadows provide habitats for a range of plant and animal species.
- **Example:** The Loktak Lake in Manipur, known for its floating phumdis (masses of vegetation), can be considered a wet meadow.

Tidal Flats

- Tidal flats are areas along coastlines that experience regular tidal inundation.
- They are rich in nutrients and support a variety of organisms, including worms, crustaceans, and migratory birds.
- Tidal flats play a role in maintaining coastal ecosystem health.
- **Example:** Gulf of Kutch in Gujarat and the coastal areas of Maharashtra have extensive tidal flats.

Backwaters

- Backwaters are brackish or freshwater lagoons found parallel to coastal areas.
- They provide habitats for aquatic plants, fish, and various species of birds.
- Backwaters are often used for transportation, fishing, and tourism.
- **Example:** The backwaters of Kerala, including the Vembanad Lake, form a unique network of interconnected water bodies.

Paddy Fields

- Paddy fields are cultivated wetlands specifically for rice production.
- They are flooded during the growing season and provide essential nutrients and water for rice plants.
- Paddy fields also support aquatic biodiversity and act as temporary wetland habitats.
- **Example:** The Kuttanad region in Kerala is known for its expansive paddy fields, which are a part of the Vembanad backwaters.

Ox-bow Lakes

- Ox-bow lakes are formed when a river's meander gets cut off from the main channel.
- These lakes often support unique aquatic ecosystems and provide important habitats for various species.
- **Example:** Kanwar Lake in Bihar, a significant ox-bow lake, is an important waterfowl habitat.

Playas and Salt Pans

- Playas are temporary wetlands that form after rainfall in arid regions, supporting migratory birds and other species.
- Salt pans are areas where saline water evaporates, leaving behind salt deposits, and can impact local hydrology.
- **Example:** The Great Rann of Kutch in Gujarat contains extensive playas and salt pans.

High-Altitude Wetlands

- High-altitude wetlands include glacial lakes and wetlands found in mountain regions.
- They contribute to downstream water supply and support cold-adapted species.
- These wetlands are sensitive to climate change and play a role in regulating water flow.
- **Example:** The Pangong Lake in Ladakh, a high-altitude glacial lake, is one of the most famous high-altitude wetlands.

Production of Major Crops in India (Top Ranking States)

Production of Major Crops in India (As per Economic Survey 2022-23)

Crops	States	Production (in Million Tonnes)	% Share of Production to All India
Rice	West Bengal	16.76	12.87
	Uttar Pradesh	15.27	11.72
	Punjab	12.89	9.89
Wheat	Uttar Pradesh	33.95	31.77
	Madhya Pradesh	22.42	20.98
	Punjab	14.82	13.87
Maize	Karnataka	5.22	15.53
	Madhya Pradesh	4.57	13.59
	Maharashtra	3.53	10.51
Total Nutri/ Coarse Cereals	Karnataka	7.30	14.34
	Rajasthan	7.07	13.89
	Maharashtra	5.84	11.47
Tur	Maharashtra	1.37	31.49
	Karnataka	1.14	26.39
	Uttar Pradesh	0.35	8.00
Gram	Maharashtra	3.28	23.82
	Madhya Pradesh	3.03	22.05
	Rajasthan	2.65	19.28
Total Pulses	Madhya Pradesh	6.03	21.78
	Maharashtra	5.19	18.75
	Rajasthan	4.02	14.51
Total Foodgrains	Uttar Pradesh	56.11	17.77
	Madhya Pradesh	39.05	12.37
	Punjab	28.21	8.94
Groundnut	Gujarat	4.49	44.48
	Rajasthan	1.70	16.83
	Tamil Nadu	0.95	9.36
Rapeseed and Mustard	Rajasthan	5.48	46.63
	Madhya Pradesh	1.69	14.36
	Haryana	1.37	11.63
Soyabean	Maharashtra	5.47	42.12
	Madhya Pradesh	5.39	41.50
	Rajasthan	0.93	7.12
Sunflower	Karnataka	0.14	54.35
	Telangana	0.02	8.32
	Odisha	0.02	7.56
Total Oilseeds	Rajasthan	8.39	22.25
	Madhya Pradesh	7.92	21.02
	Gujarat	6.90	18.30
Sugarcane	Uttar Pradesh	177.43	41.09
	Maharashtra	110.54	25.60
	Karnataka	61.15	14.16
Cotton	Gujarat	7.48	23.98
	Maharashtra	7.12	22.81
	Telangana	6.07	19.44
Jute & Mesta	West Bengal	8.36	81.00
	Assam	0.91	8.78
	Bihar	0.82	7.94

Major Crops

Rice

- Rice is a staple food in many parts of India and a significant source of dietary carbohydrates.
- India is one of the leading exporters of rice in the world.

Wheat

- Wheat is a staple in northern India, used for making various types of bread and other food products.
- It's a good source of complex carbohydrates, fiber, and some essential nutrients.

Maize (Corn)

- Maize serves as food for humans and animals and is a source of corn oil, cornflour, and other industrial products.
- Different types of maize are cultivated, including sweet corn for human consumption and field corn for animal feed and industrial use.
- It's a vital subsistence crop for many rural communities.

Tur (Pigeon Pea)

- Tur is a rich source of plant-based protein and is a staple in vegetarian diets.
- It can grow in semi-arid regions, making it important in areas with unreliable rainfall.
- Tur is often used in crop rotation systems to enhance soil fertility.

Gram (Chickpea)
- Chickpeas are high in protein, dietary fiber, and several vitamins and minerals.
- Used in a variety of dishes, from traditional curries to modern salads and snacks.

Groundnut (Peanut)
- Groundnuts are a source of cooking oil and protein-rich nuts.
- They have a symbiotic relationship with nitrogen-fixing bacteria, benefiting soil fertility.

Soybean
- Soybeans are among the best plant-based sources of protein.
- Apart from food, soybeans are processed into various products like soy milk, tofu, and industrial materials.

Sugarcane
- Sugarcane is a primary source of sugar and also used for producing molasses and ethanol.
- Sugarcane cultivation supports the sugar and biofuel industries and provides livelihoods for many.

Cotton
- Cotton is a major raw material for the textile industry, contributing to the country's economy.
- India produces various types of cotton with different fiber characteristics.
- Cotton cultivation and related activities provide employment to a significant portion of the rural population.

Jute & Mesta
- Jute and mesta are primarily cultivated for their strong and versatile fibers.
- The fibers are used for making sacks, bags, ropes, and textiles.
- Jute is considered environmentally friendly due to its biodegradable nature.

Turmeric
- Turmeric is a key spice in Indian cuisine and is also valued for its potential health benefits.
- The active compound curcumin in turmeric is known for its anti-inflammatory properties.

Sunflower
- Sunflower seeds are a major source of edible oil with a high content of polyunsaturated fatty acids.
- Sunflowers are also cultivated for their bright and attractive flowers.
- Sunflower oil can be used for biodiesel production, adding to its versatility.

Soyabean
- Soybeans are among the best plant-based sources of protein.
- Apart from food, soybeans are processed into various products like soy milk, tofu, and industrial materials.
- Soybean meal is a crucial component of animal feed.

Citrus Fruits
- Citrus fruits like oranges, lemons, and limes are rich in vitamin C and antioxidants.
- They are known for their tangy and refreshing taste, enjoyed as juices and snacks.
- Citrus fruits have been used in traditional medicine for their potential health benefits.

Apples
- Apples are primarily cultivated in the temperate regions of India, such as Himachal Pradesh and Jammu & Kashmir.
- They provide a mix of vitamins, minerals, and dietary fiber, contributing to a balanced diet.

Grapes
- Grapes are consumed as fresh fruits and are used for making various products like raisins, wine, and juices.
- India has several grape-growing regions, and the industry has both domestic and export markets.

Papayas
- Papayas are rich in vitamins, minerals, and enzymes like papain.
- Papain in papayas is known for aiding digestion and has potential health benefits.
- Papayas thrive in India's tropical climate and are a popular choice for fresh consumption.

Tea
- Tea is one of the most consumed beverages in India, with rich cultural and social importance.
- India is one of the largest tea producers globally and is renowned for its Darjeeling and Assam varieties.
- Tea plantations provide employment to a significant number of people, particularly in the north-eastern regions.

Coffee
- Coffee is primarily grown in southern states like Karnataka, Kerala, and Tamil Nadu.
- Coffee cultivation supports local economies, particularly in hilly regions.
- Indian coffee, especially Arabica and Robusta varieties, is appreciated in international markets.

Mountain Vegetation of India

Tropical Montane Forests (Subtropical Pine Forests)

- **Altitude:** 1,000 to 2,000 meters
- **Characteristics:** These forests are found in the lower mountain regions. They are characterized by evergreen and deciduous trees, including species like sal, oak, pine, and rhododendron. The undergrowth is rich with ferns, shrubs, and herbs.
- **Biodiversity Hotspots:** These forests often serve as biodiversity hotspots due to their transitional nature, harbouring a mix of species from lower altitudes and higher elevations.
- **Human Impact:** These forests are susceptible to human activities such as logging, conversion to agricultural land, and infrastructure development due to their proximity to populated areas.
- **Wildlife:** Tropical montane forests are home to various wildlife species, including different bird species, deer,

wild boar, and smaller mammals like squirrels and hares.
- **States:** Himachal Pradesh, Uttarakhand, Arunachal Pradesh

Temperate Broadleaf and Mixed Forests
- **Altitude:** 2,000 to 3,000 meters
- **Characteristics:** As the altitude increases, the vegetation changes to temperate forests. Oak, maple, chestnut, and birch trees dominate. These forests have a distinct undergrowth of mosses, ferns, and orchids.
- **Endemic Species:** These forests are important habitats for many endemic plant species that have evolved to survive in the temperate conditions of the mountains.
- **Fruit-bearing Trees:** The presence of fruit-bearing trees like apple, plum, and cherry supports local communities and wildlife, including birds and mammals.
- **Tourism and Recreation:** Many temperate forests are popular destinations for ecotourism, attracting nature enthusiasts and trekkers seeking to experience the beauty of these regions.
- **States/UTs:** Himachal Pradesh, Uttarakhand, Jammu and Kashmir

Subalpine Forests (Coniferous Forests)
- **Altitude:** 3,000 to 4,000 meters
- **Characteristics:** Coniferous trees like pine, deodar, and fir become prominent. The undergrowth consists of shrubs, grasses, and herbs. These forests are often affected by snowfall in winter.
- **Timber Resources:** Coniferous trees found in this zone, such as deodar and fir, are valued for their timber, used in construction and furniture-making.
- **Medicinal Plants:** These forests contain various medicinal plant species used by local communities for traditional remedies and healthcare.
- **Climate Impact:** The health and extent of subalpine forests can impact local climate conditions, including temperature regulation and water availability.
- **States/UTs:** Himachal Pradesh, Jammu and Kashmir, Sikkim

Alpine Scrub and Meadow
- **Altitude:** 4,000 to 5,000 meters
- **Characteristics:** This zone is characterized by low-growing shrubs, grasses, and herbs, due to harsh weather conditions. Rhododendron, juniper, and dwarf willow are common. These areas are covered with snow for a significant part of the year.
- **Adaptations:** Plants in this zone have adapted to the extreme cold, strong winds, and rocky terrain, often growing close to the ground to avoid harsh conditions.
- **Livestock Grazing:** These areas may be used for seasonal livestock grazing, impacting both the vegetation and the local economy.
- **Conservation:** Due to their fragile nature, conservation efforts are often required to protect the unique and vulnerable species found in alpine ecosystems.
- **States/UTs:** Himachal Pradesh, Uttarakhand, Ladakh (Union Territory)

Alpine Tundra
- **Altitude:** Above 5,000 meters
- **Characteristics:** This zone is found at the highest altitudes and is devoid of trees. It consists of hardy grasses, mosses, lichens, and cushion plants adapted to extreme cold and strong winds.
- **Global Significance:** Alpine tundra ecosystems are rare and globally significant due to their unique characteristics and adaptations to extreme conditions.
- **Climate Change Indicators:** Changes in the distribution and health of alpine tundra vegetation can serve as indicators of climate change impacts, including shifts in temperature and precipitation patterns.
- **Scientific Research:** Scientists study alpine tundra to understand how life can persist in such challenging environments, providing insights into adaptation and survival strategies.
- **States:** Ladakh (Union Territory), Himachal Pradesh

Rain Shadow Areas
- **Altitude:** Varies depending on location
- **Characteristics:** Some mountain regions, like the rain shadow areas of the Western Ghats and the Trans-Himalayas, have unique vegetation due to reduced rainfall. Xerophytic shrubs, thorny bushes, and drought-resistant plants are common.
- **Diversity of Adaptations:** Vegetation in rain shadow areas showcases remarkable adaptations to water scarcity, such as succulence and reduced leaf surface area.
- **Human Livelihoods:** Local communities often rely on these arid-adapted plants for grazing animals, as well as for traditional medicine and cultural practices.
- **Soil Erosion Control:** The unique vegetation in these areas plays a crucial role in preventing soil erosion, especially in regions with less rainfall.
- **States:** Leh (Ladakh, Union Territory), Lahaul-Spiti (Himachal Pradesh)

Alpine Wetlands and Lakes
- **Altitude:** Varies depending on location
- **Characteristics:** These areas are often found in depressions or near glaciers. They support unique aquatic and marshland vegetation, including sedges, grasses, and aquatic plants.
- **Unique Flora and Fauna:** Alpine wetlands and lakes are home to specialized plant species like aquatic grasses, sedges, and water lilies, as well as amphibians and waterfowl.
- **Biodiversity Conservation:** These habitats are critical for conserving species that are specially adapted to high-altitude wetlands and lakes.
- **Hydrological Importance:** Alpine wetlands and lakes contribute to the hydrological cycle by storing water, releasing it gradually, and maintaining downstream water flows.
- **States/UTs:** Jammu and Kashmir, Himachal Pradesh, Sikkim.

Indian Polity & Governance

Types of Bills

Money Bill (Article 110)

- Article 110 defines what constitutes a money bill and outlines the provisions related to money bills. Money bills can only be introduce d in the Lok Sabha (House of the People). The President's recommendation is required for the introduction of a money bill.
- Money bills can only deal with matters specified in Article 110(1), which include the imposition, abolition, remission, alteration, or regulation of any tax; the regulation of borrowing by the government; the custody of the Consolidated Fund of India; and the appropriation of moneys out of the Consolidated Fund.

Finance Bill (Article 117)

- Article 117 of the Constitution deals with the procedure for passing financial bills. Financial bills are further classified into Type I and Type II financial bills. Type I deals with matters specified in Article 110(1), and Type II deals with other financial matters.
- Both types of financial bills require the recommendation of the President for introduction in the Parliament.

Ordinary Bills

- Ordinary bills do not have specific constitutional articles outlining their procedures.
- They are introduced in either the Lok Sabha or the Rajya Sabha, and they go through the standard legislative process of discussion, debate, and voting in both houses.

Private Members' Bills

- Private members' bills are not specifically mentioned in the Constitution.
- They are introduced by members of Parliament who are not part of the government. These bills go through the regular legislative process.

Constitution Amendment Bills (Article 368)

- Article 368 provides the procedure for amending the Constitution of India.
- Constitutional amendment bills can be introduced in either house of Parliament, and they require a special majority for passage.
- Depending on the nature of the amendment, it might require either a two-thirds majority or a majority of the total membership of each house.

Joint Sitting Bills (Article 108 and Article 109)

- Article 108 outlines the provisions related to joint sittings of both houses of Parliament in case of a disagreement between the two houses on ordinary bills.
- Article 109 deals with the procedure to be followed at joint sittings.

Types of Majority

Absolute Majority

- It refers to a majority of more than 50% of the total membership of the house. For example, as the total membership of Lok Sabha is 545, an absolute majority in Lok Sabha means – 50% of 545 plus 1, i.e., 273.
- Cases, where the absolute majority is used: In the normal business of the Parliament or State Legislature absolute majority, is not generally used. But this majority is used during the general election, for the formation of government at Center and States.

Effective Majority

- Effective Majority of the house means more than 50% of the effective strength of the house. This implies that out of the total strength, we deduct the vacant seats. When the Indian Constitution mentions "all the then members", it refers to the effective majority.
- For example, in Rajya Sabha, out of the total strength of 245 members if there are 45 vacancies, then the effective strength of the house is 200. Then the effective majority is 50% of 200 plus 1, i.e., 101.

Simple Majority

- This refers to the majority of more than 50% of the members present and voting. This is also known as functional majority or working majority. The simple majority is the most frequently used form of majority in Parliamentary business.
- When the constitution or the laws do not specify the type of majority needed, the simple majority is considered for voting.
- To understand simple majority, let us consider a situation in Lok Sabha. On a particular day, out of the total strength of 545, 45 were absent and 100 abstained from voting on an issue. So only 400 members were present and voting. Then the simple majority is 50% of 400 plus 1, ie. 201.

Special Majority

- All types of majorities other than the absolute, effective or simple majority are known as the special majority. Special majority are of 4 types, with different clauses.
- **Special Majority as Per Article 249:** Special majority as per article 249 requires a majority of 2/3rd members present and voting. For example, if out of the 245 members in Rajya Sabha, if only 150 are present and voting, then the special majority required as per article 249 would be 101.

- **Special Majority as per Article 368:** Special majority as per article 368 requires a majority of 2/3rd members present and voting supported by more than 50% of the total strength of the house. This type of majority is used for most of the Constitutional amendment bills. To pass a constitution amendment bill in Rajya Sabha, in addition to getting the support of 123 members, the bill should be favoured by more than 2/3rd of the members present and voting.
- **Special Majority as per Article 368 + 50 percent state ratification by a simple majority:** This type of special majority is required when a constitutional amendment bill tries to change the federal structure. Special majority as per article 368 plus state ratification requires a majority of 2/3rd members present and voting supported by more than 50% of the state legislatures by a simple majority. A good example would be the bill which introduced the National Judicial Appointments Commission (NJAC). It required the support of at least 15 state legislatures out of the 29 states.
- **Special Majority as per Article 61:** Special majority as per article 61 requires a majority of 2/3rd members of the total strength of the house. In Lok Sabha, the special majority as per article 61 is 364 while in Rajya Sabha, the special majority as per article 61 is 164. Cases where special majority as per article 61 is used: For the impeachment of the Indian President.

Procedure for Constitutional Amendment

Stages of Passing a Bill

Proposal Stage

- A proposed amendment must be introduced as a bill in either the Rajya Sabha (Council of States) or the Lok Sabha (House of the People), the two houses of the Indian Parliament.

Approval by the Legislature

- The bill must be passed by each house with a special majority, which means a majority of the total membership of the house and a majority of not less than two-thirds of the members present and voting.

Ratification

- In some cases, certain amendments require ratification by at least half of the state legislatures.
- This ratification ensures that states have a say in amending the constitution.

Amendment Procedures

- The Indian Constitution provides for a comprehensive amendment process.
- Amendments can be made to various parts of the Constitution, including its articles and schedules.
- However, certain fundamental aspects, known as "Basic Structure," are considered unamendable. These include the principles of democracy, secularism, federalism, and the rule of law.

Amendment Procedures for Specific Articles

- Some articles of the Constitution have their own unique amendment procedures.
- For example, changes to Article 1 (Name and territory of the Union).

Public Participation and Debate

- While the formal constitutional amendment process involves Parliament and state legislatures, public discussions, debates, and legal scrutiny play an important role.
- The process includes public awareness, civil society participation, and expert opinions to ensure a well-rounded consideration of amendments.

Major Constitutional Amendments in India

First Amendment Act, 1951

- Through this amendment, the State is allowed to make special provisions for the advancement of socially and economically backward classes.
- This amendment also added Ninth Scheduled to the Constitution. Land reforms and other related laws were brought under the Ninth Scheduled and got protection from the judicial review.
- Some additional restrictions on freedom of speech and expression were added by the first amendment. These three new restrictions are: Public Order, Friendly Relations with Foreign States, and Incitement to an offence.

Seventh Amendment Act, 1956

- Through this amendment, States were reorganized into 14 States and 6 Union Territories.
- Classification of States into four categories i.e. Part A, Part B, Part C and Part D was done away with.
- Jurisdiction of High Courts was extended to Union Territories.

Eighth Amendment Act, 1960

- Extended the reservation of seats for the SCs and STs, and special representation for the Anglo-Indians in the Lok Sabha and the State Legislative Assemblies for a period of ten years (i.e., up to 1970).

Twenty-First Amendment Act, 1967

- Sindhi was included as the 15th Language in the Eight Scheduled through this amendment.

Twenty-Third Amendment Act, 1969

- Reservation of seats for the SCs and STs, and special representation for the Anglo-Indians in the Lok Sabha and the State legislative assemblies was extended for 10 more years from 1970 to 1980.

Twenty-Fourth Amendment Act, 1971

- Through this amendment, Parliament was empowered to amend any part of the Constitution including fundamental rights.
- This amendment made it compulsory for the President to give his assent to a Constitutional Amendment Bill.

Thirty-First Amendment Act, 1973

- Number of Lok Sabha seats was increased to 545 from 525 through this amendment.

Thirty-Eighth Amendment Act, 1975

- Promulgation of ordinances by the President, Governors and Lt. Governors as well as declaration of emergency by the President were made non-justiciable through this amendment.
- This amendment also empowered President to declare different proclamations of national emergency on different grounds simultaneously.

Thirty-Ninth Amendment Act, 1975

- This amendment made it clear that the judiciary can't adjudicate on the matters related to the President, Vice-President, Prime Minister and Speakers. These matters are to be decided by such authority as may be determined by the Parliament.
- Certain acts were brought under the Ninth Schedule through this amendment.

Forty-Second Amendment Act, 1976

- It was the most comprehensive amendment to the Constitution till date. Hence it is also known as 'Mini Constitution'.

New provisions added by this amendment include:

- Three new words, i.e., 'Socialist', 'Secular' and 'Integrity' were added in the Preamble.
- Three new Directive Principles namely, equal justice and free-legal aid, participation of workers in the management of industries and protection of environment, forests and wild life were added in Part-IV.
- Part IV A was added to the Constitution which lists Fundamental Duties to be observed by every citizen.
- Constitutional amendments were taken out of the purview of judicial review.
- Raised the tenures of Lok Sabha and State assemblies from five to six years.
- Parliament was allowed to make laws to tackle anti-national activities; such laws are to take precedence over Fundamental Rights.
- Five subjects were shifted from the State List to the Concurrent List. These subjects were education, forests, protection of wild animals and birds, weights and measures and administration of justice, constitution and organization of all courts except the Supreme Court and the High Courts.
- This amendment provided for the creation of the All-India Judicial Service.
- Abolish the requirement of quorum in Parliament and the State legislatures.

Forty-Fourth Amendment Act, 1978

- Term of Lok Sabha and the State legislative assemblies was reduced from six years to five years.
- Provision of quorum in Parliament and State legislatures was made mandatory again.
- The amendment omitted the reference to the British House of Commons in the provisions pertaining to the Parliamentary privileges.
- Gave constitutional protection to publication in newspaper of true reports of the proceedings of Parliament and the State legislatures.
- This amendment made it clear that the Fundamental Rights guaranteed under Articles 20 and 21 cannot be suspended even during a national emergency.
- The amendment abolished certain provisions which took away the power of the court to decide the election disputes of the President, the Vice-President, the Prime Minister and the Speaker of the Lok Sabha.
- The amendment replaced the term 'internal disturbance' with 'armed rebellion' in respect of national emergency.
- It deleted the provision which made the satisfaction of the President, Governor and administrators final in issuing ordinances.
- It empowered the President to send back advice of cabinet for reconsideration, only once. The reconsidered advice is to be binding on the President.

Fifty-Second Amendment Act, 1985

- The 52nd amendment to the Constitution added the Tenth Schedule which laid down the process by which legislators may be disqualified on grounds of defection. This schedule contains provisions which are also known as the Anti-defection law.
- A Member of Parliament or state legislature was deemed to have defected if he either voluntarily resigned from his party or disobeyed the directives of the party leadership on a vote. That is, they may not vote on any issue in contravention to the party's whip.
- Independent members would be disqualified if they joined a political party. Nominated members who were not members of a party could choose to join a party within six months; after that period, they were treated as a party member or independent member.
- The law also made a few exceptions. Any person elected as speaker or chairman could resign from his party, and rejoin the party if he demitted that post. A party could be merged into another if at least two-thirds of its party legislators voted for the merger. The law initially permitted splitting of parties, but that has now been outlawed.

Sixty-First Amendment Act, 1989

- Voting age for the Lok Sabha and State legislative assembly elections was reduced from 21 years to 18 years.

Sixty-Second Amendment Act, 1989

- This amendment extended the reservation of seats for the SCs and STs and special representation for the Anglo-Indians in the Lok Sabha and the State legislative assemblies for the period of ten more year, i.e., up to 2000.

Sixty-Fifth Amendment Act, 1990

- Provision of a special officer for SCs and STs was replaced by the National Commission for SCs and STs.

Sixty-Ninth Amendment Act, 1991

- Through this amendment, Union territory of Delhi was re-designated as the National Capital Territory of Delhi.
- A seventy-member assembly for Delhi was also created through this amendment.

Seventieth Amendment Act, 1992

- Members of the Legislative Assemblies of Delhi and the Union Territory of Puducherry were added to the Electoral College for the election of the President.

Seventy-First Amendment Act, 1992

- Konkani, Manipuri and Nepali languages were included in the Eight Schedule through this amendment, taking the total number of scheduled languages to 18.

Seventy-Third Amendment Act, 1992

- This landmark amendment added a new Part-IX entitled as 'the Panchayats' to the Constitution.
- The amendment not only gave constitutional status and protection to the Panchayati Raj institutions (PRI), but also added a new Eleventh Schedule, containing 29 functional items of the panchayats.

Seventy-Fourth Amendment Act, 1992

- A new Part IX-A & an Eleventh Scheduled was added to the Constitution through this amendment.
- The amendment gave constitutional status and protection to the urban local bodies, i.e. municipalities, through Part-IX-A entitled as 'the municipalities' and the Eleventh Schedule containing 18 functional items.

Seventy-Ninth Amendment Act, 1999

- This amendment extended the reservation of seats for the SCs and STs and special representation for the Anglo-Indians in the Lok Sabha and the State legislative assemblies for a further period of ten years i.e., up to 2010.

Eighty-Fourth Amendment Act, 2001

- Re-adjustment of seats in the Lok Sabha and State legislative assemblies was further extended for 25 years implying that the number of seats in the Lok Sabha and State legislative assemblies will remain same till 2026.
- It also provided for the readjustment and rationalization of territorial constituencies in the States on the basis of the population figures of 1991 census.

Eighty-Sixth Amendment Act, 2002

- This amendment added new Article 21-A which states that "the State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may determine".
- Subject matter of Article 45 in Directive Principles was also changed to "The State shall endeavor to provide early childhood care and education for all children until they complete the age of six years".
- The amendment added a new fundamental duty under Article 51-A which reads – "It shall be the duty of every citizen of India who is a parent or guardian to provide opportunities for education to his child or ward between the age of six and fourteen years."

Eighty-Seventh Amendment Act, 2003

- This amendment provided for the re-adjustment and rationalization of territorial constituencies in the states on the basis of Census 2001 and not 1991 census as provided earlier by the 84th Amendment Act of 2001.

Eighty-Ninth Amendment Act, 2003

- The combined entity for Scheduled Castes and Scheduled Tribes ceased to exists after this amendment.
- The National Commission for Scheduled Castes and Scheduled Tribes was bifurcated into two separate bodies, namely, National Commission for Scheduled Castes (Article 338) and National Commission for Scheduled Tribes (Article 338-A).
- Both the commissions consist of a Chairperson, a Vice-Chairperson and three other members. All the members including the chairperson are to be appointed by the President.

Ninety-First Amendment Act, 2003

- This amendment made the provisions to limit the size of Council of Ministers at the Centre and States, and to strengthen the anti-defection laws.
- A new **clause 1A** was inserted in **Article 75** which puts the cap of the size of Central Council of Ministers, including the Prime Minister, at 15 per cent of the total strength of the Lok Sabha.
- A new cause 1A was inserted in Article 164 which limits the size of the Council of Ministers in a state at 15 per cent of the total strength of the legislative Assembly, with a condition that the number of ministers, including the Chief Minister shall not be less than 12.
- Under Article 75 (1B), a member of either house of Parliament belonging to any political party who is disqualified on the ground of defection shall also be ineligible to be a minister at the Centre
- Similarly, Under Article 164 (1B), a member of either House of a state legislature belonging to any political party who is disqualified on the ground of defection shall also be disqualified to be appointed as a minister.

- A member of either House of Parliament or either House of a State Legislature disqualified on the ground of defection has also been barred from holding any remunerative political post.
- The amendment abolished the provision of the Tenth Schedule related to exemption from disqualification in case of split by one-third members of legislature party.

Ninety-Second Amendment Act, 2003

- Four more languages, namely Bodo, Dogri (Dongri), Maithili and Santhali were added to the Eighth Schedule, taking the total number of constitutionally recognized languages to 22.

Ninety-Fifth Amendment Act, 2009

- This amendment extended the reservation of seats for the SCs and STs and special representation for the Anglo-Indians in the Lok Sabha and the State legislative for a further period of ten years i.e., upto 2020.
- Ninety-Sixth Amendment Act, 2011
- This amendment substituted 'Odia' for 'Oriya' in the Eighth Schedule.

Ninety-Seventh Amendment Act, 2011

In order to give a constitutional status and protection to co-operative societies, this amendment made three changes:

- By bringing it under Article 19, right to form co-operative societies was made a fundamental right.
- It included a new Directive Principle of State Policy on promotion of co-operative societies (Article 43-B).
- A new Part IX-B was added by this amendment. This part is entitled as "The Co-operative Societies" (Articles 243-ZH to 243-ZT)

Ninety-Ninth Amendment Act, 2015

- The Constitution (99th Amendment) was passed by the Lok Sabha and Rajya Sabha on August, 2014. It established The National Judicial Appointments Commission (NJAC), a constitutional body proposed to replace the present Collegium system of appointing judges.
- The Parliament also passed the National Judicial Appointments Commission Act, 2014, to regulate the NJAC's functions. Both Bills were ratified by 16 state legislatures and the President gave his assent on December, 2014.
- The NJAC Act and the Constitutional Amendment Act came into force from April 13, 2015. This amendment inserted new articles 124A, 124B and 124C and made amendments to Articles 127, 128, 217, 222, 224A, 231.

Note: Later, the Supreme Court of India declared that the 99th Amendment Act and NJAC Act are unconstitutional and they violate the Basic Structure of the Constitution.

Composition of NJAC

- It would consist of six people – the Chief Justice of India, the two most senior judges of the Supreme Court, the Law Minister, and two 'eminent persons'.
- These eminent persons are to be nominated for a three-year term by a committee consisting of the Chief Justice, the Prime Minister, and the Leader of Opposition in the Lok Sabha, and are not eligible for re-nomination.

One Hundredth Amendment Act, 2015

- This amendment passed for exchange of certain enclave territories with Bangladesh and conferment of citizenship rights to residents of enclaves, consequent to signing of Land Boundary Agreement (LBA) Treaty between India and Bangladesh.
- This Amendment made changes in the First Schedule of the Indian Constitution.

Amendment to the First Schedule of the Constitution

- The Bill amends the First Schedule of the Constitution to give effect to an agreement entered into by India and Bangladesh on the acquiring and transfer of territories between the two countries on May 16, 1974.
- The First Schedule of the Constitution defines the area of each state and union territory which together constitute India.
- The territories involved are in the states of Assam, West Bengal, Meghalaya and Tripura. Many of these are enclaves (i.e., territory belonging to one country that is entirely surrounded by the other country), and there are even enclaves-within-enclaves.
- The enclave residents are to be allowed to either reside at their present location or move to the country of their choice.

Hundred and First Amendment Act, 2015

- This amendment in the Indian Constitution introduced a national Goods and Services Tax (GST) in India from July 1, 2017. The Act was passed in accordance with the provisions of Article 368 of the Constitution and has been ratified by more than half of the State Legislatures, as required under Clause (2) of the said article.
- It inserted new articles in the Constitution as Article 246 (A), Article 269A and Article 279-A.
- It amends the 7th Schedule (Union and State list) and also made amendments in the existing articles like Article 249, 250, 268, 268A, 269 etc.
- The **GST** is a Value added Tax (VAT) proposed to be a comprehensive indirect tax levy on manufacture, sale and consumption of goods as well as services at the national level. It will replace all indirect taxes levied on goods and services by the Indian Central and state governments. It is aimed at being comprehensive for most goods and services.

Hundred and Second Amendment Act, 2018

- It granted constitutional status to the National Commission for Backward Classes (NCBC).

Hundred and Third Amendment Act, 2019

- It gives 10 per cent reservation for Economically Weaker Sections (EWS) in admissions to Central Government Educational Institutions and Private educational institutions, and for employment in Central Government jobs.

Hundred and Fourth Amendment Act, 2019

- It extended the reservation provided to the Schedule Castes and Schedule Tribes for another ten years i.e. upto 25th January 2030.
- But it did not extend the period of reservation of the two Lok Sabha seats and seats in State Legislative Assemblies for members of the Anglo-Indian Community.
- The provision of nominating Anglo Indians to the Lok Sabha and the State Assemblies has been effectively abolished.

Hundred and Fifth Amendment Act, 2021

- It restored the power of State governments to recognise socially and educationally backward classes.
- The Constitution (One Hundred and Second Amendment) Act, 2018 gave constitutional status to the NCBC, and empowered the President to notify the list of socially and educationally backward classes for any state or union territory. It virtually took away the rights of the states to notify the list of socially and educationally backward classes.
- This amendment makes a provision that this to provide that the President may notify the list of socially and educationally backward classes only for purposes of the central government. This amendment enables states and union territories to prepare their own list of socially and educationally backward classes.

Parliamentary Form of Government

Constitutional Provisions

Article 74

- It focuses on the advice and helps the President receives from the Cabinet of Ministers as he performs his duties.
- The amended advice must be adopted if the President asks the Cabinet of Ministers to reconsider.
- The President's suggestions from the Council of Ministers are not up for judicial review.

Article 75

- According to this system, the President selects the Prime Minister and, depending on the Prime Minister's suggestions, the President selects the other ministries.
- Ministers are chosen by the President to serve during his or her term in office.
- The Lok Sabha is ultimately responsible for the actions of the Cabinet of Ministers.

Article 163

- It focuses on how the Cabinet of Ministers supports and advises the Governor as he discharges his duties.
- If the Governor is acting at their own discretion, they are not compelled to seek the advice and aid of the Ministerial Council.
- The Governor's proposals from the Council of Ministers are not susceptible to judicial review.

Article 164

- The Governor appoints the Chief Minister and names other ministries on the Chief Minister's advice.
- Ministers are chosen by the governor for the duration of their tenure in office.
- The Ministers are jointly accountable, according to the state's Legislative Assembly.

Salient Features

Cabinet System

- The Cabinet is the central decision-making body in a parliamentary system.
- It is composed of ministers who are usually Members of Parliament and are accountable to the legislature.
- The Prime Minister is the head of the government and leader of the majority party in the legislature.

Collective Responsibility

- Ministers in the Cabinet are collectively responsible to the legislature.
- This means that Cabinet decisions are binding on all members, and they must support and defend those decisions in the legislature.
- If the legislature passes a vote of no confidence, the entire Cabinet is expected to resign.

Majority Rule

- The party or coalition with the majority of seats in the legislature forms the government.
- The Prime Minister and the Cabinet are appointed from this majority group.

Dual Executive

- In a parliamentary system, there is a dual executive.
- The head of state (often a ceremonial figurehead, like a President or a monarch) and the head of government (Prime Minister) share executive powers.
- The real executive authority is vested in the Prime Minister and the Cabinet.

Flexibility

- A parliamentary system allows for relatively quick changes in leadership if needed.
- A vote of no confidence or a loss of majority support can lead to the resignation of the government, potentially resulting in the formation of a new government.

Question Hour and Debates

- Parliamentary systems emphasize the importance of Question Hour, during which members of the legislature can question the government on various issues.
- Debates and discussions in the legislature play a critical role in policy formulation and oversight.

Lack of Fixed Terms

- Unlike presidential systems, parliamentary systems do not have fixed terms for the government.
- The government's tenure depends on its ability to maintain majority support in the legislature.

Continuous Accountability

- The executive remains accountable to the legislature on an ongoing basis. Members of the Cabinet are subject to regular questioning and scrutiny.

Resignation and Dissolution

- The Prime Minister and the Cabinet can resign if they lose the confidence of the legislature.
- The head of state, in some cases, can dissolve the legislature and call for new elections.

Role of Opposition

- The opposition plays a vital role in holding the government accountable, proposing alternatives, and participating in debates.

Powers of Governor

Executive Powers

- Article 154 of Constitution of India vests the entire executive powers of the State in the Governor who exercises this power either directly or through officers subordinate to him in accordance with the Constitution.
- All the executive functions in the state are carried on in the name of Governor. (Article 166 (1))
- The Governor is to make rules for authentication of orders and other instruments that are made and executed in his name. (Article 166 (2)).
- The Governor may make rules for the more convenient transaction of business of the State and for allocation of work among the Ministers. (Article 166 (3)).
- He makes various important appointments.
- The Governor appoints the Chief Minister of the State and the other Ministers shall be appointed by the Governor on the advice of the Chief Minister.
- He also appoints the Chairpersons and Members of the State Public Service Commission, State Election Commission, State Finance Commission and the Advocate General, Judges of the courts other than the High Court.

Legislative Powers

- Under Article 168, the Governor is a part of the Legislature of the State.
- He summons and prorogues the two houses of the Legislature (in case of Bicameral Legislatures) and can dissolve the Legislative Assembly of the State (Article 174).
- Under article 175, the Governor addresses the State legislature. Also he sends messages to the House or Houses of State Legislature for pending bills or any other matter.
- Under article 176, the Governor addresses legislative assembly or both houses in case of states having legislative council, at the commencement of the first session after each general election to the Legislative Assembly and at the commencement of the first session of each year.
- A bill passed by the State Legislature becomes a law or Act only when the Governor gives assent to it. When a Bill is presented to the Governor for his assent, the Governor may give his assent to the Bill; withhold his assent; reserve the Bill for the consideration of the President or; except in case of a Money Bill, return the Bill for reconsideration.
- The Governor is empowered to nominate one sixth members of the total strength of Legislative Council, if it exists in any State.
- He has the power to issue the ordinances when the Assembly is not in session.
  - Article 213, states that the Governor may promulgate ordinances during the period when the House or both the Houses where there are two Houses of State Legislature are not in session. The power corresponds to the power of the President under Article 123.
  - The ordinances have the same force and effect as laws passed by the Legislature and assented by the Governor. Also they are subject to the same restrictions as laws passed by the Legislature.
  - Every ordinance promulgated by the Governor has to be laid before the State Legislative Assembly (before both Houses in case of bicameral State Legislature) and shall cease to operate at the expiry of six weeks from the reassembly of the Legislature or even earlier if a resolution disapproving it is passed.
  - The Ordinance may be withdrawn by the Governor at any time (Article 213).

Judicial Powers

- He is consulted when the Judges of the State High Court are appointed by the President.
- Article 161, gives the Governor the power to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of an offence against any law relating to a matter to which the executive power of the State extends. The power has to be exercised on the advice of the Council of Ministers.
- Under Article 233, the appointment, posting and promotion of district judges in any State are made by the Governor of the State in consultation with the High Court exercising jurisdiction in relation to such State
- Under article 234, the appointments of persons other than district judges to the judicial service of a State are made by the Governor of the State according to the rules made by him after consultation with the State Public Service Commission and with the High Court exercising jurisdiction in relation to such State.

Financial Powers

- No money bill can be introduced in the Assembly without the prior permission of the Governor.
- The Governor has the control over the State contingency fund (article 267)
- Under Article 202, the Governor lays down the Budget or Annual Financial Statement before the House or Houses of the State Legislature.

Discretionary Powers

- The Governor acts on the advice of the State Council of Ministers. But according to the Constitution, under special circumstances, he may act without the advice of the Council of Ministers. Such powers, which are exercised by the Governor on his own, are called discretionary powers.
- Article 163 (2) states that the decision of the Governor in his discretion shall be final, and the validity of anything done by the Governor shall not be called in question on the ground that he ought or ought not to have acted in his discretion.
- However, it has been held that generally the Governor cannot act except in accordance with the advice of his ministers.

His discretionary powers include:

- If no political party or coalition of parties wins a clear majority in the Legislative Assembly, he can exercise his discretion in inviting a person to be the Chief Minister.
- He can reserve any bill passed by the State Legislature for the consideration of the President of India. (article 200)
- If he thinks that the government of the State is not functioning according to the Constitution, he can report to the President and request for imposition of President Rule. During such emergency, the Governor rules on behalf of the President. (Article 356)
- Determining the royalty for mineral licenses to District Councils in case of areas, under the Sixth schedule.
- Under article 167, the Governor can seek information from the chief minister about administrative and legislative matters of the state.
- Under Article 239 (2) the Governor appointed as the administrator of an adjoining Union territory by the President shall exercise his functions as administrator independently of his Council of Ministers.
- Article 371 of the Constitution provides that the President may confer special responsibilities upon the Governor with respect to the State of Maharashtra and Gujarat for the establishment of separate Development Boards for Vidarbha, Marathwada, Saurashtra, Kutch and the rest of Gujarat with the provision that a report on the working of each of these Boards will be placed each year before the State Legislative Assembly.
- Article 371 A, 371 C, 371 F, 371 H of the Constitution has conferred special responsibilities on the Governor of Nagaland, Manipur, Sikkim and Arunachal Pradesh for certain purposes. So, in discharging the obligations mentioned above the Governor is not bound to seek the advice of the Council of Ministers and his role is not controversial, when he acts in his discretion to fulfill his obligations.

Powers & Jurisdiction of Supreme Court

Types of Jurisdiction and Powers of Supreme Court

Original Jurisdiction

- The exclusive original jurisdiction extends to any dispute between - the Government of India and one or more States; or between the Government of India and any State or States on one side and one or more States on the other; or between two or more States.
- The Supreme Court has been conferred with power to direct transfer of any civil or criminal case from one State High Court to another State High Court or from a Court subordinate to another State High Court.
- The Supreme Court, if satisfied that cases involving the same or substantially the same questions of law are pending before it and one or more High Courts or before two or more High Courts and that such questions are substantial questions of general importance, may withdraw a case or cases pending before the High Court or High Courts and dispose of all such cases itself.
- Under the Arbitration and Conciliation Act, 1996, International Commercial Arbitration can also be initiated in the Supreme Court.

Writ Jurisdiction

- In addition, Article 32 of the Constitution gives an extensive original jurisdiction to the Supreme Court in regard to enforcement of Fundamental Rights.
- It is empowered to issue directions, orders or writs, including writs in the nature of habeas corpus, mandamus, prohibition, quo warranto and certiorari to enforce them.

Appellate Jurisdiction

- The appellate jurisdiction of the Supreme Court can be invoked by a certificate granted by the High Court concerned under Article 132(1), 133(1) or 134 of the Constitution in respect of any judgement, decree or final order of a High Court in both civil and criminal cases, involving substantial questions of law as to the interpretation of the Constitution.
- **Appeals also lie to the Supreme Court in civil matters if the High Court concerned certifies -**
  1. that the case involves a substantial question of law of general importance, and

2. that, in the opinion of the High Court, the said question needs to be decided by the Supreme Court.

- **In criminal cases, an appeal lies to the Supreme Court if the High Court**
  1. has on appeal reversed an order of acquittal of an accused person and sentenced him to death or to imprisonment for life or for a period of not less than 10 years, or
  2. has withdrawn for trial before itself any case from any Court subordinate to its authority and has in such trial convicted the accused and sentenced him to death or to imprisonment for life or for a period of not less than 10 years, or
  3. certified that the case is a fit one for appeal to the Supreme Court.
- Parliament is authorised to confer on the Supreme Court any further powers to entertain and hear appeals from any judgement, final order or sentence in a criminal proceeding of a High Court.
- The Supreme Court has also a very wide appellate jurisdiction over all Courts and Tribunals in India in as much as it may, in its discretion, grant special leave to appeal under Article 136 of the Constitution.

Advisory Jurisdiction

- The Constitution under Article 143 authorises the President to seek the opinion of the Supreme Court in the two categories of matters -
  1. On any question of law or fact of public importance which has arisen or which is likely to arise.
  2. On any dispute arising out of any pre-constitution treaty, agreement, covenant, engagement, sanad or other similar instruments.

Court of Record

- As a Court of Record, the Supreme Court has two powers i.e.,
  1. The judgements, proceedings and acts of the Supreme Court are recorded for perpetual memory and testimony. These records are admitted to be of evidentiary value and cannot be questioned when produced before any court. They are recognised as legal precedents and legal references.
  2. It has power to punish for contempt of court, either with simple imprisonment for a term up to six months or with fine up to 2,000 or with both.

Judicial Review

- Judicial review is the power of the Supreme Court to examine the constitutionality of legislative enactments and executive orders of both the Central and state governments.
- On examination, if they are found to be violative of the Constitution (ultra-vires), they can be declared as illegal, unconstitutional and invalid (null and void) by the Supreme Court. Consequently, they cannot be enforced by the Government.

Local Self-Governance

Committees for Local Self-Governance

Balwant Rai Mehta Committee (1957)

- The committee recommended the establishment of a three-tier Panchayati Raj system - Gram Panchayat at the village level, Panchayat Samiti at the block level, and Zilla Parishad at the district level.
- The committee emphasized the need to devolve powers, functions, and responsibilities to these Panchayati Raj institutions, enabling them to plan and implement local development schemes.
- The committee highlighted the importance of democratic decentralization by involving local communities in decision-making and governance processes.

Ashok Mehta Committee (1977)

- Recommended a two-tier Panchayati Raj system: Zilla Parishad at the district level and Mandal Panchayat at the intermediary level.
- It proposed the creation of a State Election Commission for conducting Panchayat elections.
- The committee stressed the need for transferring more powers and functions to Panchayati Raj institutions, including subjects related to agriculture, rural development, and social welfare.
- The committee recommended that a certain portion of state finances should be allocated to Panchayats, ensuring financial autonomy and enabling them to undertake development activities effectively.

G.V.K. Rao Committee (1985)

- The G.V.K. Rao Committee (1985) recommended making the "district" as the basic unit of planning and also holding regular elections.
- In terms of planning, execution, and monitoring of rural development programs, the Panchayati Raj institutions at the district and lower levels should be given a significant role.
- For efficient decentralized district planning, some state-level planning functions should be moved to district-level planning entities.

L.M. Singhvi Committee (1986)

- Local self-government should be acknowledged by the Constitution.
- Panchayat elections should be held on a regular basis and without delay.
- Every state should establish a Panchayati Raj judicial tribunal to deal with issues relating to the administration of Panchayati Raj.
- Adequate financial resources are required to guarantee that panchayats function effectively.
- Individuals affiliated with political parties should be discouraged from participating.

- The Nyaya Panchayat should be tasked with mediating and resolving disputes.
- The Gram Sabha represents direct democracy, and rural Panchayats should be better organized. Gram Sabha should be prioritized.

Salient Features of 73rd and 74th Constitutional Amendments

- These changes added two new sections to the Constitution: Part IX, titled "The Panchayats" (added by the 73rd Amendment), and Part IXA, titled "The Municipalities" (added by the 74th Amendment).
- Gram Sabhas (village governments) and Ward Committees (municipalities), which are composed of all adult individuals who are registered to vote, are the basic political units.
- Except in States with a population of less than 20 lakhs, there is a three-tier system of panchayats at the village, intermediate block/taluk/mandal, and district levels (Article 243B).
- Direct elections must be used to fill all positions, per Article 243C (2).
- The chairpersons of the Panchayats at all levels as well as the seats designated for Scheduled Castes and Scheduled Tribes (SCs and STs) must be reserved for SCs and STs in proportion to their population.
- One-third of the total seats available must be reserved for women.
- One third of the seats reserved for SCs and STs also reserved for women.
- One-third offices of chairpersons at all levels reserved for women (Article 243D).
- Uniform five year term and elections to constitute new bodies to be completed before the expiry of the term.
- In the event of dissolution, elections compulsorily within six months (Article 243E).
- Each State shall have an independent election commission for the purpose of supervising, directing, and controlling the electoral rolls (Article 243K).
- Panchayats are required by law to make plans for social justice and economic development in relation to a variety of topics, including those listed in the Eleventh Schedule (Article 243G).
- A District Planning Committee is established by the 74th Amendment (Article 243ZD) to combine the plans created by Panchayats and Municipalities.
- Budgetary allocation from State Governments, a portion of the proceeds from specific taxes, the collection and retention of the money they generate, programmes and grants from the Central Government, and grants from the Union Finance Commission (Article 243H).
- Create a Finance Commission in each State to develop the guiding principles for ensuring appropriate financial resources for panchayats and other local government units (Article 243I).
- The Eleventh Scheduled of the Constitution places as many as 29 functions within the purview of the Panchayati Raj bodies.

Salient Features of the Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA)

- **Article 243M** recognizes the powers of the Panchayats (including those in the Scheduled Areas) to function as institutions of self-governance.
- **Article 243ZD** provides for the inclusion of provisions related to the Panchayats in the Scheduled Areas in the Fifth Schedule of the Constitution.
- **Self-Governance**
  1. PESA aims to recognize and promote the traditional practices of tribal self-governance.
  2. It grants greater autonomy to local communities in Scheduled Areas in matters of governance, decision-making, and resource management.
  3. **Section 4:** Recognition of traditional rights and customary use of land.
  4. **Section 4(d):** Gram Sabha's powers over land, water, and minor forest produce.
- **Gram Sabha Empowerment**
  1. The act empowers the Gram Sabha, which is the assembly of the people in a village, with the authority to manage local resources, approve development projects, and safeguard community rights over land, water, and forests.
  2. **Section 4(m):** Powers of the Gram Sabha, including approving plans and programs for social and economic development, overseeing local institutions, and safeguarding customary resources.
- **Land Ownership and Use**
  1. PESA provides for community ownership of land and natural resources in Scheduled Areas. It ensures that land alienation and transfer are regulated and controlled by the community, preventing non-tribals from acquiring land.
  2. **Section 5:** Rights over minor forest produce, water bodies, etc.
  3. **Section 7:** Regulation of money-lending and control over institutions in Scheduled Areas.
- **Cultural Identity Protection**
  1. PESA seeks to protect and preserve the cultural, social, and economic identity of tribal communities. It prohibits the practice of shifting cultivation without the permission of the Gram Sabha.
  2. **Section 6:** Restriction on alienation of land and restoration of unlawfully acquired land.
- **Role of Traditional Institutions**
  1. The act recognizes and strengthens traditional tribal institutions, such as the Gram Sabha and the Tribal Panchayat. These institutions are given authority over local-level planning, decision-making, and implementation of development programs.

2. **Section 4(b):** Role of the Gram Sabha in approval of plans, programs, and projects for social and economic development.

- **Participation in Decision-Making**
  1. PESA mandates the involvement of local communities, especially tribal communities, in the planning and decision-making processes related to projects, programs, and policies that affect their areas.
  2. **Section 4(e):** Gram Sabha's powers to safeguard community resources and prevent alienation of land.
- **Disputes Resolution**
  1. The act provides mechanisms for settling disputes related to land, forests, and other community resources within the Scheduled Areas.
  2. It empowers the Gram Sabha to resolve conflicts through traditional practices and customs.
  3. **Section 6:** Regulation of disputes relating to land and resources within the Scheduled Areas.
- **Protection of Rights**
  1. PESA emphasizes the protection of tribal rights over minor forest produce, water bodies, and other resources.
  2. It ensures that the exploitation of these resources is regulated and benefits local communities.
  3. **Section 4(j):** Powers of the Gram Sabha to manage village markets, control money-lending activities, and ensure protection from usury.
- **Consent for Land Acquisition**
  1. PESA mandates that prior informed consent of the Gram Sabha is required for land acquisition and rehabilitation projects in Scheduled Areas.
  2. **Section 4(f):** Powers of the Gram Sabha over land acquisition and related matters.
- **Village Development Plans**
  1. The act emphasizes the preparation of village-level development plans that take into account the needs, priorities, and aspirations of local communities.
  2. These plans are to be approved by the Gram Sabha.
  3. **Section 4(i):** Gram Sabha's role in approving and executing plans for social justice, economic development, and social forestry.

Motions in Parliament

Types of Motions

Adjournment Motion

- A motion for adjournment is made with the Speaker's approval to consider a specific issue of urgent public interest that must be of the utmost concern.
- For it to be approved, 50 members must vote in favour. It is regarded as an exceptional device because it interferes with the House's regular business.
- The Lok Sabha has this motion, however the Rajya Sabha does not.
- It is significant to highlight that although an adjournment motion is viewed as a harsh rebuke of the administration, it does not mandate the government's resignation.

Closure Motion

- It is a motion moved by a member to cut short the debate on a matter before the House.
- If the motion is approved by the House, debate is stopped forthwith, and the matter is put to vote.

Motion with a Vote

- This kind of motion is submitted to the Lok Sabha in accordance with Rule 184.It enables a discussion with a vote on a particular issue, and the result of the vote establishes the position of Parliament.
- If such a motion is approved, the government is required to abide by the decision of the House of Representatives.
- However, votes on motions are rather seldom and are often saved for issues of major national significance.

Short Duration Discussion

- Short-term talks are permitted in accordance with Rules 176 and 193 of the Rajya Sabha Rules, respectively.
- MPs can discuss a particular matter of public interest without casting a vote during a discussion of limited time. The debate often lasts for a predetermined amount of time, not longer than two hours.
- Without making any official conclusions, the goal of these conversations is to attract attention to crucial issues and give many viewpoints a chance to be heard.

No-Confidence Motion

- This motion is introduced in the Lok Sabha (rather than the Rajya Sabha) to assess public trust in the government.
- For the motion to be approved, 50 members must vote in favour.
- If a vote of no confidence is successful, the government is required to resign.
- No-confidence motions are big political occurrences that typically take place when it appears that the government is losing support from the majority of the population.

Confidence Motion

- When the President asks governments created with razor-thin majorities to show that their majorities on the House floor to support their continued authority to rule.
- Passage indicates the government's continued mandate to govern.

Privilege Motion

- When a member thinks a minister has mistreated the House's or its members' privileges by withholding material details of a case or offering false or twisted information, they may bring up this motion.
- This motion's main goal is to express dissatisfaction and condemnation of the relevant minister's deeds.

Motion of Thanks

- It is customary in parliament to express appreciation for the President's speech at the opening of the Lok Sabha.

- The motion is put to a vote at the conclusion of the discussion. The House must approve this measure. Otherwise, the government will be overthrown.

Cut Motion

- A cut motion is a special power vested in members of the Lok Sabha to oppose a demand being discussed for specific allocation by the government in the Finance Bill as part of the Demand for Grants.
- If the motion is adopted, it amounts to a no-confidence vote, and if the government fails to jot up numbers in the lower House, it is obliged to resign according to the norms of the House.

Disqualification of Members of Parliament

Constitutional Provisions

- A person may be disqualified from running for office and serving as a member of parliament under specific circumstances, according to the disqualification provision in Article 102 of the Constitution.
  - If he occupies a paid position with the federal or state governments (other than a ministerial position or one that is exempt from the law by Parliament).
  - If a judge has determined that he is mentally ill.
  - If he is a pending insolvency.
  - If he is not an Indian citizen, has chosen to become a citizen of another country, or has pledged his allegiance to another country, and
  - If he is otherwise ineligible under a Parliament-made law.
- Article 102 also authorises Parliament to make laws determining conditions of disqualifications.
- There are analogous provisions for members of state legislatures.

The Representation of the People Act, 1951

- **Disqualification on Imprisonment:** The Representation of the People Act, 1951 provides that a person will be disqualified if convicted and sentenced to imprisonment for two years or more. The person is disqualified for the period of imprisonment and a further six years.
- **Exception for Sitting Members:** There is an exception for sitting members; they have been provided a period of three months from the date of conviction to appeal; the disqualification will not be applicable until the appeal is decided.

Disqualification on Ground of Defection

- The Constitution also lays down that a person shall be disqualified from being a member of Parliament if he is so disqualified on the ground of defection under the provisions of the Tenth Schedule.
- **A member incurs disqualification under the defection law -**
  1. If he voluntarily gives up the membership of the political party on whose ticket he is elected to the House;
  2. If he votes or abstains from voting in the House contrary to any direction given by his political party;
  3. If any independently elected member joins any political party; and
  4. If any nominated member joins any political party after the expiry of six months.
- **Decision of Presiding Officer:** The question of disqualification under the tenth Schedule is decided by the Chairman in the case of Rajya Sabha and Speaker in the case of Lok Sabha (and not by the President of India). In 1992, the Supreme Court ruled that the decision of the Chairman/Speaker in this regard is subject to judicial review.

Important Supreme Court Judgements

- **2002– Union of India (UOI) vs. Association for Democratic Reforms:** The SC ruled that any candidate running for election to the Parliament, State Legislatures, or Municipal Corporation must submit a nomination paper that includes information on their criminal history, financial situation, and educational background.
- **2005- Ramesh Dalal vs. Union of India:** The SC ruled that if a current MP or MLA is found guilty and given a term of at least 2 years in prison by a court of law, he or she will also be ineligible to run for office.
- **2013- In Lily Thomas vs. Union of India:** The Supreme Court ruled that Section 8(4) of the Representation of the People Act, 1951, which permits MPs and MLAs to continue in office after being convicted, is unconstitutional. The court decided that MP/MLA convictions for two years or more would result in instant disqualification.
- **2015 – Krishnamurthy vs. Sivakumar & Ors:** The SC held that disclosure of criminal antecedents (especially heinous crimes) of a candidate at the time of filing of nomination paper as mandated by law was a categorically imperative.

Legal Protection for Legislators against Disqualification

- Legislators could delay instant disqualification until 2013 under Section 8(4) of the RPA.
- According to Section 8(4), convicted MPs, MLAs, and MLCs might maintain their positions as long as they filed an appeal against their conviction or punishment in higher courts within three months after the trial court's ruling.
- In other words, the simple act of appealing a conviction will prevent disqualification from taking effect.
- However, in Lily Thomas v. Union of India, the Supreme Court ruled that section 8(4) of the RPA, 1951 was ultra vires and that the disqualification began on the date of the conviction rather than the date of the conviction itself.

Economy

Functioning of RBI

Key Functions

- **Monetary Management/Authority:** The RBI formulates and executes monetary policy to secure monetary stability in India. It manages the currency and credit system, influencing money supply and interest rates. Powers for monetary management are derived from the RBI Act of 1934.
- **Supervision and Regulation of Banking and Non-Banking Financial Institutions:** RBI protects depositors' interests through effective regulation. It monitors banking operations, solvency, and overall financial stability via policy measures. Regulatory powers come from the RBI Act of 1934 and Banking Regulation Act of 1949.
- **Regulation of Foreign Exchange Market, Government Securities Market, and Money Market:** RBI oversees India's foreign exchange market as per the Foreign Exchange Management Act (FEMA) 1999. It regulates trade in government securities using powers granted by the RBI Act of 1934.
- **Money Market:** RBI also regulates the short-term and highly liquid debt securities market under the RBI Act of 1934.
- **Foreign Exchange Reserve Management:** RBI acts as the custodian of India's foreign exchange reserves, which include Foreign Currency Assets (FCAs), Special Drawing Rights (SDRs), and Gold. The management of foreign exchange reserves is governed by the RBI Act of 1934.
- **Bankers to Central and State Government:** RBI serves as the government's banker, receiving and disbursing funds for various government departments. It maintains government funds, including Consolidated Funds, Contingency Funds, and Public Account. These functions are authorized by the RBI Act of 1934.
- **Advisor to the Government:** RBI provides financial and banking-related advice to the government as requested.
- **Central and State Government's Debt Manager:** RBI manages public debt and issues new loans on behalf of central and state governments, aiming to minimize borrowing costs and maintain a balanced debt maturity structure.
- **Banker to Banks:** RBI facilitates banking operations by maintaining accounts for banks, aiding interbank fund transfers, and offering short-term loans and advances.
- **RBI - Lender of Last Resort:** RBI assists solvent but temporarily illiquid banks, protecting depositors' interests and averting potential bank failures.
- **RBI - Issuer of Currency:** RBI, along with the government, is responsible for creating, manufacturing, and administering the national currency to ensure an adequate supply of genuine and clean notes.
- **Developmental Role:** RBI plays a developmental role by establishing financial institutions, promoting credit to productive sectors, and expanding access to affordable financial services. This includes schemes like Priority Sector Lending, Lead Bank Scheme, and other initiatives targeted at specific sectors and weaker sections of society.
- **Data Dissemination/Policy Research:** RBI conducts policy research, focusing on issues impacting the Indian economy. It publishes reports and conducts surveys, including the Consumer Confidence Survey and Inflation Expectation Survey.

Inflation

Inflation in India

- India's retail inflation has fallen to a 25-month low of 4.25% in May 2023, according to the latest data released by the Ministry of Statistics.
- This is the third consecutive month that the consumer price index (CPI) based inflation has stayed within the Reserve Bank of India's (RBI) target range of 2-6%.

Types of Inflation

- **Consumer Price Inflation (CPI):** This measures changes in the prices of a basket of goods and services consumed by urban and rural households. It is a key indicator of retail inflation.
- **Wholesale Price Inflation (WPI):** This tracks changes in the prices of goods at the wholesale level, often indicating inflationary pressures at an earlier stage in the supply chain.

Factors Influencing Inflation

- **Demand-Pull Factors**
  - **Consumer Demand:** When consumer demand for goods and services exceeds supply, it can lead to an increase in prices. This often occurs during periods of economic growth when consumers have more disposable income.
  - **Business Investment:** Increased business investments and spending on capital goods can boost production costs, which may be passed on to consumers in the form of higher prices.
  - **Government Spending:** Government expenditures on public projects, social programs, and defense can increase overall demand in the economy, potentially leading to demand-pull inflation.

- **Monetary Policy:** Expansionary monetary policies, such as lowering interest rates or increasing the money supply, can stimulate borrowing and spending, increasing demand for goods and services.
- **Consumer Expectations:** If consumers anticipate rising prices in the future, they may increase their current spending to avoid higher costs, which can drive demand-pull inflation.

- **Cost-Push Factors**
  - **Commodity Prices:** Fluctuations in the prices of commodities like oil, metals, and agricultural products can have a significant impact on production costs. Rising commodity prices can lead to cost-push inflation.
  - **Wage Increases:** When workers demand and receive higher wages, businesses may raise prices to cover the increased labor costs, contributing to cost-push inflation.
  - **Supply Chain Disruptions:** Events such as natural disasters, trade disputes, or disruptions in the supply chain can reduce the availability of goods, driving up prices due to scarcity.
  - **Exchange Rates:** Currency depreciation can increase the cost of imported goods, making them more expensive for consumers. A weaker domestic currency can lead to cost-push inflation.
  - **Taxes and Regulations:** Changes in government policies, such as tax hikes or new regulations, can directly impact production costs, which can be passed on to consumers.
  - **Monopoly or Oligopoly Pricing:** In markets dominated by a few large companies, these firms may have the power to raise prices without fear of losing customers, leading to cost-push inflation.
  - **Global Economic Conditions:** Economic events in major economies can influence inflation. For example, a global recession may reduce demand for exports, impacting a country's economic conditions and potentially affecting inflation.
  - **Natural Events:** Natural disasters like earthquakes, hurricanes, or droughts can disrupt agricultural production, leading to shortages and higher food prices, which contribute to cost-push inflation.

Inflation Targeting

- The average headline consumer price index inflation (CPI-Inflation) in India stayed above 6% for three continuous quarters due to supply shocks such as pandemic lockdowns, supply chain disruptions, elevated commodity prices and Ukraine war.

About Inflation Targeting Framework

- Based on the Urjit Patel committee recommendation (2014), Government of India and RBI also signed the Monetary Policy Framework Agreement in 2015. The objective was to bring transparency and accountability to the monetary policy process.
- **Target Inflation Rate:** The RBI's primary objective is to target a specific inflation rate. The target was to maintain Consumer Price Index (CPI) inflation at 4%, with a tolerance range of +/- 2%. This means that the acceptable range for inflation was 2% to 6%.
- **Inflation Calculation:** RBI uses the CPI, which measures the change in the prices of a basket of goods and services consumed by urban and rural households, as the key indicator for inflation. The CPI includes various components, such as food, fuel, housing, clothing, and transportation.
- **Monetary Policy Committee (MPC):** The MPC was established to decide on the policy rate (repo rate) and to set the path for interest rates. The committee consists of six members, with three members appointed by the Government of India and three by the RBI. The RBI Governor serves as the ex-officio chairperson.
- **Policy Rate Adjustments:** The RBI uses the repo rate as its primary policy rate. The repo rate is the rate at which commercial banks can borrow money from the RBI.
- **Forward Guidance:** The RBI provides forward guidance to communicate its future policy intentions to the financial markets and the public. This helps in managing inflation expectations.
- **Flexibility in Monetary Policy:** While the primary focus is on inflation, the RBI also considers other factors, such as economic growth and financial stability, when making monetary policy decisions.
- **Review and Accountability:** The RBI regularly reviews its monetary policy framework to assess its effectiveness in achieving its inflation target. The central bank is accountable to the government and the public for achieving its inflation target.

Different Types of Policy Stances

- **Accommodative Stance**: When the central bank is prepared to expand the money supply to boost economic growth, i.e. willingness to cut policy rate.
- **Neutral Stance**: When the central bank can either cut rate or increase policy rate. It is usually adopted when policy priority is equal to inflation and growth.
- **Hawkish Stance**: When the central bank is prepared to curb the money supply to keep the inflation low, i.e., willingness to increase policy rate.
- **Calibrated Tightening**: Another term to represent the rate hike in a calibrated manner, i.e., tilt towards rate hike but no necessary policy rate hike at every policy meeting.

Standing Deposit Facility (SDF)

- The Standing Deposit Facility (SDF) serves as a liquidity management tool designed to absorb deposits from Scheduled Commercial Banks (SCBs) without the requirement of collateral or government securities in exchange.

- This concept was initially proposed by the Urjit Patel Committee in 2014 as a means to effectively manage liquidity within the financial system.
- In 2018, a significant amendment to Section 17 of the RBI Act, 1934, was made to grant the Reserve Bank of India (RBI) the authority to introduce the SDF as an additional instrument for absorbing liquidity without the need for collateral.
- One notable aspect of the SDF is its role in replacing the Fixed Rate Reverse Repo (FRRR), which previously acted as the lower limit within the Liquidity Adjustment Facility (LAF) corridor.
- Importantly, funds deposited through the SDF do not count toward fulfilling Cash Reserve Ratio (CRR) maintenance requirements, as stipulated in Section 42 of the RBI Act, 1934.
- However, they are considered eligible assets for meeting Statutory Liquidity Ratio (SLR) obligations, in accordance with Section 24 of the Banking Regulation Act, 1949.
- The introduction of the SDF was necessitated by the need to effectively manage surplus liquidity that arose due to the Covid-19 pandemic.
- This facility enables the RBI to exercise better control over liquidity levels within the financial system during extraordinary economic circumstances.

Other Liquidity Adjustment Facility Instrument

- **Repo Operations (Repurchase Agreements):** Repo operations involve the central bank (RBI) lending money to commercial banks against collateral, typically government securities. Banks agree to repurchase these securities from the RBI at a specified future date and at a predetermined interest rate.
- **Reverse Repo Operations:** In reverse repo operations, the central bank borrows money from commercial banks by selling them government securities. Banks agree to repurchase these securities from the RBI at a later date and earn interest on their funds.
- **Targeted Long-Term Repo Operations (TLTROs):** TLTROs are a special type of repo operation where the central bank provides long-term funds to banks at a fixed interest rate. These operations are "targeted" because they are designed to channel funds into specific sectors or segments of the economy that require additional liquidity.

Debt Management in India

Status of Debt in India

Internal/Public Debt

- Recently, the government has announced a reduction in its gross borrowing target for the financial year 2022-23 by Rs 10,000 crore to Rs 14.21 lakh crore.
- As per Budget 2023-24, internal debt and liabilities stands at 169.46 lakh crore (as for 31st March 2024).

About Public Debt

- Public debt is the total amount borrowed by the government of a country. In the Indian context, public debt includes the total liabilities of the Union government that have to be paid from the Consolidated Fund of India.
- **Sources**
  - **Dated Government Securities (G-Secs):** Dated G-Secs are long-term debt instruments issued by the Indian government with fixed maturity dates and periodic interest payments (coupons). These are the most significant source of internal public debt in India. They have various tenures, ranging from 5 years to 40 years.
  - **Treasury Bills (T-Bills):** Treasury Bills are short-term debt instruments issued by the government with maturities typically ranging from 91 days, 182 days, and 364 days. They are issued at a discount to their face value and do not pay periodic interest. T-Bills are crucial for managing short-term liquidity.
  - **State Development Loans (SDLs):** State governments in India also raise internal public debt through State Development Loans. SDLs are issued by state governments to meet their fiscal requirements and finance development projects. Each state has its own SDL program.
  - **National Small Savings Fund (NSSF):** The NSSF is a significant source of internal public debt. It includes small savings schemes like Public Provident Fund (PPF), National Savings Certificate (NSC), and others. These schemes mobilize funds from the public and contribute to the government's borrowing.
  - **Bank Deposits and Reserve Bank of India (RBI):** The government raises funds by borrowing from commercial banks through savings and term deposits. RBI, as the central bank, also holds government securities and conducts open market operations to manage government debt.
  - **Insurance and Pension Funds:** Insurance companies and pension funds invest in government securities, contributing to the government's internal borrowing. These funds are regulated by the Insurance Regulatory and Development Authority (IRDA) and Pension Fund Regulatory and Development Authority (PFRDA).
  - **Non-Banking Financial Companies (NBFCs):** Some non-banking financial companies, particularly those registered with the Reserve Bank of India (RBI) as primary dealers, participate in government securities auctions and hold government debt as part of their investment portfolios.
  - **Mutual Funds:** Mutual funds in India also invest in government securities, including G-Secs and T-Bills. These funds manage investments from retail and institutional investors and contribute to government borrowing.

- **Individual and Institutional Investors:** Individuals and various institutional investors, including corporate entities, trusts, and foundations, can directly invest in government securities, contributing to internal public debt.
- **Foreign Institutional Investors (FIIs) and Foreign Portfolio Investors (FPIs):** While primarily associated with external debt, some FIIs and FPIs also invest in Indian government securities, depending on regulatory limits.

External Debt

- Recently, the External Debt Management Unit (EDMU) in the Department of economic Affairs, Ministry of Finance, has released 28th edition of the Status Report on India's External Debt 2021-22.
- **Specifics**
  - India's external debt, at US$ 620.7 billion as at end-March 2022, grew by 8.2 per cent over US$ 573.7 billon as at end-March 2021. While 53.2 per cent of it was denominated in US dollar, Indian rupee denominated debt, estimated at 31.2 per cent, was the second largest.
  - India's external debt, at US$ 620.7 billion as at end-March 2022, grew by 8.2 per cent over US$ 573.7 billon as at end-March 2021. While 53.2 per cent of it was denominated in US dollar, Indian rupee denominated debt, estimated at 31.2 per cent, was the second largest.
  - External debt as a ratio to GDP fell marginally to 19.9 per cent as at end-March 2022 from 21.2 per cent a year ago. Foreign currency reserves as a ratio to external debt stood slightly lower at 97.8 per cent as at end-March 2022 than 100.6 per cent a year ago.
  - The long-term debt estimated at US$ 499.1 billion, constituted the largest chunk of 80.4 per cent, while the short-term debt, at US$ 121.7 billion, accounted for 19.6 per cent of the total. The short-term trade credit was predominantly in the form of trade credit (96 per cent) financing imports.
  - Commercial borrowings (CBs), NRIs deposits, short-term trade credit and multilateral loans together accounted for 90 per cent of the total external debt. While NRI deposits marginally contracted during end-March 2021 and end-March 2022, CBs, short-term trade credit and multilateral loans, on the other hand, expanded during the same period.
  - As at end-March 2022, sovereign external debt (SED) amounted to US$ 130.7 billion, increasing by 17.1 per cent over the level a year ago, reflecting the additional allocation of SDRs by the IMF during 2021-22. SDRs rose to US$ 22.9 billion from US$ 5.5 billion as at end-March 2021. FPI holding of G-Sec, on the other hand, slid to US$ 19.5 billion from US$ 20.4 billion a year ago.
  - Non-sovereign external debt, estimated at US$ 490.0 billion as at end-March 2022, posted a growth of 6.1 per cent over the level a year ago. CBs, NRI deposits, and short-term trade credit accounted for about 95 per cent of non-sovereign debt.
  - The short-term trade credit rose substantially by 20.7 per cent to US$ 117.4 billion as at end-March 2022 on the back of a surge in imports during 2021-22.
  - The debt service ratio fell to 5.2 per cent during 2021-22 from 8.2 per cent during 2020-21 due to buoyancy in current receipts and a decline in debt service payments.
  - In a cross-country perspective, India's external debt is modest, occupying 23th position globally.

Bonds & Securities

Draft Norms for Lending and Borrowing of G-Secs

- Recently, the Reserve Bank of India released Draft Reserve Bank of India (Government Securities Lending) Directions, 2023.
- The RBI proposed introduction of securities lending and borrowing in Government Securities (G-sec) with an aim to facilitate wider participation in the securities lending market by providing investors an avenue to deploy idle securities and enhance portfolio returns.

Types of G-Secs

- **Treasury Bills (T-Bills):** Treasury bills are financial instruments that do not provide regular interest payments. Instead, they are issued at a discounted price and are redeemed at their face value upon maturity.
- **Cash Management Bills (CMBs):** Introduced in 2010 by the Government of India in collaboration with the RBI, Cash Management Bills (CMBs) serve as short-term financial instruments designed to address temporary cash flow mismatches faced by the government. CMBs share similarities with T-bills but have maturities of less than 91 days.
- **Dated Government Securities (Dated G-Secs):** Dated Government Securities, often referred to as Dated G-Secs, are financial instruments that come with fixed or floating interest rates. Interest payments are made semi-annually on the face value of the securities. These securities typically have tenures ranging from 5 years to 40 years.
- **State Development Loans (SDLs):** State Development Loans (SDLs) are financial instruments used by state governments to raise funds from the market. SDLs are dated securities that are issued through standard auctions, similar to the auction processes employed for dated securities issued by the Central Government.

Types of Securities and Bonds

Government Securities (G-Secs)

- Considered one of the safest investments due to the backing of the Indian government.

- G-Secs include Treasury Bills (T-Bills) and Government Bonds with varying maturities.
- **Example:** A 10-year Government Bond issued by the Reserve Bank of India (RBI) pays a fixed interest rate to investors and is backed by the full faith and credit of the Indian government.

Bond

- A bond is a debt instrument in which an investor loans money to an entity (typically corporate or government) which borrows the funds for a defined period of time at a variable or fixed interest rate.
- Bonds are used by companies, municipalities, states and sovereign governments to raise money to finance a variety of projects and activities. Owners of bonds are debt holders, or creditors, of the issuer.

Fixed Rate Bonds

- These are bonds on which the coupon rate is fixed for the entire life (i.e. till maturity) of the bond. Most Government bonds in India are issued as fixed rate bonds.
- **Example:** 8.24% GS 2018 was issued on April 22, 2008 for a tenor of 10 years maturing on April 22, 2018. Coupon on this security will be paid half-yearly at 4.12% (half yearly payment being half of the annual coupon of 8.24%) of the face value on October 22 and April 22 of each year.

Floating Rate Bonds (FRB)

- FRBs are securities which do not have a fixed coupon rate.
- Instead it has a variable coupon rate which is re-set at pre-announced intervals (say, every six months or one year). FRBs were first issued in September 1995 in India.
- For example, a FRB was issued on November 07, 2016 for a tenor of 8 years, thus maturing on November 07, 2024. The variable coupon rate for payment of interest on this FRB 2024 was decided to be the average rate rounded off up to two decimal places, of the implicit yields at the cut-off prices of the last three auctions of 182 day T- Bills, held before the date of notification.

Zero Coupon Bonds

- Zero coupon bonds are bonds with no coupon payments. However, like T- Bills, they are issued at a discount and redeemed at face value.
- The Government of India had issued such securities in 1996. It has not issued zero coupon bonds after that.

Capital Indexed Bonds

- These are bonds, the principal of which is linked to an accepted index of inflation with a view to protecting the Principal amount of the investors from inflation.
- A 5 year Capital Indexed Bond, was first issued in December 1997 which matured in 2002.

Inflation Indexed Bonds (IIBs)

- IIBs are bonds wherein both coupon flows and Principal amounts are protected against inflation.
- The inflation index used in IIBs may be Whole Sale Price Index (WPI) or Consumer Price Index (CPI). Globally, IIBs were first issued in 1981 in UK.
- In India, Government of India through RBI issued IIBs (linked to WPI) in June 2013. Since then, they were issued on monthly basis (on last Tuesday of each month) till December 2013.

Bonds with Call/Put Options

- Bonds can also be issued with features of optionality wherein the issuer can have the option to buy-back (call option) or the investor can have the option to sell the bond (put option) to the issuer during the currency of the bond.
- It may be noted that such bond may have put only or call only or both options.
- The first G-Sec with both call and put option viz. 6.72% GS 2012 was issued on July 18, 2002 for a maturity of 10 years maturing on July 18, 2012.

Special Securities

- Under the market borrowing program, the Government of India also issues, from time to time, special securities to entities like Oil Marketing Companies, Fertilizer Companies, the Food Corporation of India, etc. (popularly called oil bonds, fertiliser bonds and food bonds respectively) as compensation to these companies in lieu of cash subsidies.
- These securities are usually long dated securities and carry a marginally higher coupon over the yield of the dated securities of comparable maturity.
- These securities are, however, not eligible as SLR securities but are eligible as collateral for market repo transactions.

Separate Trading of Registered Interest and Principal of Securities (STRIPS)

- STRIPS are the securities created by way of separating the cash flows associated with a regular G-Sec i.e. each semi-annual coupon payment and the final principal payment to be received from the issuer, into separate securities.
- They are essentially Zero Coupon Bonds (ZCBs). However, they are created out of existing securities only and unlike other securities, are not issued through auctions.
- Stripped securities represent future cash flows (periodic interest and principal repayment) of an underlying coupon bearing bond. Being G-Secs, STRIPS are eligible for SLR.

Sovereign Gold Bond (SGB)

- SGBs are unique instruments, prices of which are linked to commodity price viz Gold. SGBs are also budgeted in lieu of market borrowing.
- The calendar of issuance is published indicating tranche description, date of subscription and date of issuance.
- The Bonds shall be denominated in units of one gram of gold and multiples thereof.

- Minimum investment in the Bonds shall be one gram with a maximum limit of subscription per fiscal year of 4 kg for individuals, 4 kg for Hindu Undivided Family (HUF) and 20 kg for trusts.
- The Bonds shall be repayable on the expiration of eight years from the date of issue of the Bonds. Pre-mature redemption of the Bond is permitted after fifth year of the date of issue of the Bonds and such repayments shall be made on the next interest payment date.

Corporate Bonds

- Issued by corporations to raise capital for expansion or projects.
- Investors receive periodic interest payments (coupon) and principal at maturity.
- **Example:** Tata Motors issued corporate bonds with a 5-year maturity, offering a fixed interest rate to investors. These bonds are traded on Indian stock exchanges.

Municipal Bonds

- Issued by local municipal bodies to fund infrastructure projects.
- Interest income from municipal bonds may be tax-free for investors.
- **Example:** Pune Municipal Corporation issued tax-free municipal bonds to finance various urban development projects. These bonds provided tax benefits to investors.

Public Provident Fund (PPF)

- A long-term savings scheme backed by the government.
- Offers tax benefits under Section 80C of the Income Tax Act.
- **Example:** Individuals can open a PPF account with a bank or post office, deposit a minimum amount annually, and enjoy tax-free interest income. The account has a maturity period of 15 years.

National Savings Certificates (NSC)

- Government savings bonds with fixed tenures.
- Offer a guaranteed return and qualify for tax benefits.
- **Example:** The Indian government issues NSCs with varying maturities. For instance, the 5-year NSC pays a fixed interest rate and is a popular small savings instrument.

Equity-Linked Savings Scheme (ELSS)

- ELSS is a tax-saving mutual fund scheme with a lock-in period.
- Offers tax benefits under Section 80C and the potential for capital appreciation.
- **Example:** Axis Long Term Equity Fund is an ELSS mutual fund that invests in equities, allowing investors to benefit from market growth while enjoying tax savings.

Exchange-Traded Funds (ETFs)

- ETFs track an index or asset and are traded on stock exchanges.
- Provide diversification and liquidity like stocks.
- **Example:** Nifty 50 ETF tracks the Nifty 50 Index and allows investors to buy a basket of the 50 largest stocks in India through a single security.

Commercial Papers (CPs)

- Short-term unsecured promissory notes issued by corporations.
- CPs are used to meet short-term financing needs.
- **Example:** A major Indian conglomerate like Tata Group may issue CPs to raise short-term capital for working capital requirements.

Debentures

- Long-term debt instruments issued by corporations, financial institutions, and government-backed entities.
- Debentures may be convertible or non-convertible and pay fixed or floating interest.
- **Example:** HDFC Ltd issues non-convertible debentures (NCDs) with various tenures and interest rates. These debentures provide investors with regular interest income.

Fixed Deposits (FDs)

- Term deposits offered by banks and financial institutions.
- Pay a fixed interest rate and have various tenures, providing stable returns.
- **Example:** State Bank of India (SBI) offers fixed deposits with tenures ranging from 7 days to 10 years. The interest rate varies depending on the deposit amount and tenure.

Certificates of Deposit (CDs)

- Time deposits offered by banks with fixed maturities.
- Typically offer higher interest rates than regular savings accounts.
- **Example:** ICICI Bank offers CDs with various tenures, allowing investors to deposit a lump sum for a specified period and earn interest.

Infrastructure Bonds

- Specifically issued to finance infrastructure projects.
- Often come with tax benefits for investors.
- **Example:** IDFC First Bank issued infrastructure bonds that enable investors to participate in infrastructure development while enjoying tax deductions under Section 80CCF of the Income Tax Act.

Corporate Fixed Deposits

- Corporate fixed deposits are debt instruments issued by private and public corporations to raise capital for their business activities.
- Unlike bank fixed deposits, the interest rates on corporate fixed deposits are not regulated by the Reserve Bank of India (RBI) and can vary significantly among issuers based on their credit ratings and financial health.
- **Example:** Tata Motors, a leading automobile manufacturer in India, issued corporate fixed deposits with various tenures, such as 1 year, 2 years, and 3 years. These fixed deposits offered competitive interest rates to investors.

Government Bonds

- Government bonds, also known as sovereign bonds, are debt securities issued by the central or state governments to raise funds for various developmental and budgetary purposes.
- Government bonds are considered among the safest investments because they are backed by the full faith and credit of the government. They are relatively low-risk compared to corporate or municipal bonds.
- **Example**: The Government of India regularly issues sovereign bonds with different tenures, such as 10-year, 20-year, and 30-year bonds. These bonds are actively traded in the financial markets and provide fixed interest income to investors.

Infrastructure Finance in India

India Infrastructure Project Development Fund

- The Infrastructure Investment and Project Development Fund (IIPDF) was established within the Department of Economic Affairs (DEA), part of the Ministry of Finance in the Government of India.
- Initially funded with Rs. 100 crore, its purpose was to support the development of Public-Private Partnership (PPP) projects to be offered to the private sector.
- The DEA has now restructured the IIPDF as a Central Sector Scheme with a total outlay of Rs. 150 Crore, applicable for three years from 2022-23 to 2024-25. The fund is designed to assist Sponsoring Authorities in financing project development costs.
- **Objective:** The primary aim of the IIPDF is to provide financial assistance for high-quality project development activities.
- **Significance:** This initiative allows Sponsoring Authorities to secure funding to cover a portion of the costs associated with PPP project transactions. This, in turn, reduces the financial burden related to procurement on their budgets.
- **Financial Outlay:** Under the IIPDF scheme, up to 75% of project development expenses will be contributed to the Sponsoring Authority as an interest-free loan. The remaining 25% will be co-funded by the Sponsoring Authority. If the bidding process is successfully completed, the project development expenditure will be recovered from the winning bidder.
- **Approval Committee (AC)**: The IIPDF scheme is administered by the Approval Committee (AC), which consists of -
  - Joint Secretary, DEA (Chairperson)
  - Representative of NITI Aayog
  - Deputy Secretary/Private Investment Unit, DEA (Member Secretary)

Major Infrastructure Financing Initiatives in India

PM Gati Shakti Scheme

- **Objective:** PM Gati Shakti aims to create an integrated, multimodal infrastructure grid to enhance connectivity, reduce logistics costs, and accelerate economic growth by fostering seamless movement of goods and people.
- **Key Features:** It involves the convergence of various infrastructure sectors, including roads, railways, ports, airports, and digital networks, to eliminate silos and enhance efficiency.
- **Implementation:** The scheme was announced by Prime Minister Narendra Modi in August 2021, and its implementation is coordinated by the newly created National Infrastructure Coordination Committee (NICC).
- **Investment:** PM Gati Shakti is part of India's ambitious National Infrastructure Pipeline (NIP) and is expected to attract substantial public and private investments to develop world-class infrastructure.
- **Impact:** The scheme aims to transform India's infrastructure landscape, improve ease of doing business, boost industrial and agricultural competitiveness, and enhance the quality of life for citizens through better connectivity.

National Infrastructure Pipeline (NIP)

- **Scope:** NIP is a comprehensive plan that enlists infrastructure projects worth over Rs 100 lakh crore (approximately $1.3 trillion) across various sectors and states in India.
- **Launch Date:** NIP was launched in December 2019 by Finance Minister Nirmala Sitharaman.
- **Sectors Covered:** It encompasses sectors like transportation (roads, railways, airports, ports), energy (power generation and transmission), water resources, and social infrastructure (healthcare, education).
- **Financing:** NIP seeks to mobilize both public and private investments to fund these projects over a specified period, supporting economic growth and job creation.
- **Transparency:** The government provides regular updates and monitoring of NIP projects through an online dashboard to ensure transparency and accountability.

Urban Infrastructure Development Fund

- **Purpose:** The Urban Infrastructure Development Fund (UIDF) is a financial assistance program initiated to support urban infrastructure development in Indian cities and towns.
- **Implementing Agency:** UIDF is administered by the Ministry of Housing and Urban Affairs, Government of India.
- **Funding:** It provides loans and grants to urban local bodies (ULBs) to improve infrastructure such as water supply, sanitation, solid waste management, and urban transport.
- **Components:** UIDF consists of two components: UIDF-Infrastructure and UIDF-PPP (Public-Private Partnership). UIDF-PPP focuses on promoting private sector participation in urban infrastructure projects.

- **Impact:** The fund contributes to the creation of urban infrastructure that enhances the quality of life for urban residents and supports sustainable urbanization.

National Logistics Policy

- **Objective:** The National Logistics Policy aims to streamline and modernize India's logistics sector to make it more efficient, cost-effective, and globally competitive.
- **Focus Areas:** It focuses on reducing logistics costs, improving multimodal transportation, enhancing trade facilitation, and promoting technology adoption in logistics operations.
- **Implementation:** The policy was approved by the Indian government in September 2022, and its implementation involves collaboration between multiple ministries and agencies.
- **Key Goals**
  - To align with global standards and enhance its economic competitiveness, India aims to halve its logistics costs by 2030, reducing them from the current 14-18% of GDP to match international benchmarks of 8%.
  - India, as the world's fifth-largest economy, aspires to secure a position among the top 10 countries in the Logistics Performance Index (LPI) by 2030, paralleling the progress of South Korea. In 2018, India held the 44th spot in the LPI rankings.
  - A pivotal aspect of this endeavor involves the establishment of data-driven Decision Support Systems (DSS) to foster a more efficient logistics ecosystem.
  - The ultimate policy goal is to minimize logistical challenges, drive substantial growth in exports, and significantly benefit small-scale industries and their workforce.
- **Impact:** The policy is expected to boost India's trade, reduce logistics-related bottlenecks, create employment opportunities, and enhance the ease of doing business.

Dedicated Freight Corridors

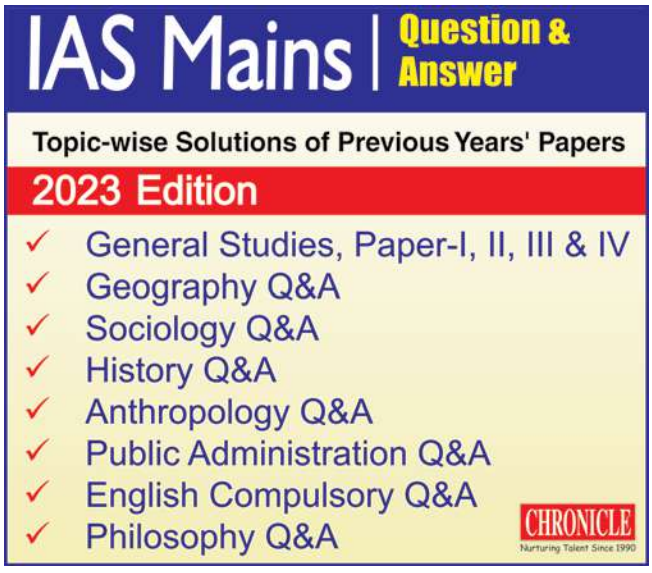
- **Purpose:** Dedicated Freight Corridors (DFCs) are specialized rail lines designed to transport freight efficiently, separate from passenger traffic, to reduce transit times and costs.
- **Key Corridors:** India is developing two major DFCs i.e., the Eastern Dedicated Freight Corridor (EDFC) and the Western Dedicated Freight Corridor (WDFC).
- **Length:** The EDFC is approximately 1,856 kilometers long, connecting Ludhiana in Punjab to Dankuni in West Bengal. The WDFC spans around 1,504 kilometers, linking Dadri in Uttar Pradesh to Jawaharlal Nehru Port in Mumbai.
- **Implementation:** DFCs are being constructed by the Dedicated Freight Corridor Corporation of India Limited (DFCCIL).
- **Impact:** DFCs are expected to revolutionize freight transportation in India, increasing rail's share in the transportation of goods, reducing congestion on existing rail networks, and enabling faster and more reliable movement of freight across the country.

National Investment and Infrastructure Fund (NIIF)

- NIIF is a government-owned fund established in 2015 to promote infrastructure investment in India.
- It operates as a fund of funds, comprising sector-specific funds and strategic initiatives to attract investments.
- NIIF collaborates with domestic and international investors, including sovereign wealth funds, to finance infrastructure projects.
- The fund has been involved in financing various infrastructure projects in India, contributing to the development of critical sectors.
- NIIF aims to bridge the infrastructure investment gap by mobilizing capital and promoting public-private partnerships.

National Bank for Financing Infrastructure and Development (NaBFID)

- NaBFID is a government-backed development financial institution (DFI) established to provide long-term financing for infrastructure projects.
- It focuses on funding large-scale infrastructure projects with extended gestation periods.
- The DFI model is revived to address the financing needs of India's ambitious infrastructure development plans.
- NaBFID plays a critical role in offering patient capital to support the growth and sustainability of infrastructure projects.
- It contributes to India's infrastructure development by providing a stable source of financing for both public and private sector projects.



India's Fiscal Policy

Taxation

GST

- As per Goods and Services Tax (Period of Levy and Collection of Cess) Rules, 2022, compensation cess will continue to be levied from July 1, 2022, to March 31, 2026.
- **About GST**
  - **GST Rates:** GST has multiple tax rates, which are categorized into four main slabs: 5%, 12%, 18%, and 28%. There are also specific rates for certain items like luxury goods and essential commodities.
  - **GST Compensation Cess:** Compensation cess is levied over and above the amount of GST charged in relation to a particular supply.
  - **Dual GST Structure:** GST in India follows a dual structure, comprising the Central Goods and Services Tax (CGST) and the State Goods and Services Tax (SGST). Both the central and state governments levy and administer GST independently on the same transaction.
  - **Integrated GST (IGST):** IGST is applicable to the inter-state supply of goods and services. It is collected by the central government and then distributed to the destination state.
  - **GST Council:** The GST Council is a constitutional body that consists of finance ministers from both the central and state governments. It is responsible for making recommendations on GST rates, rules, and regulations.
  - **GSTIN:** Every taxpayer registered under GST is assigned a unique Goods and Services Tax Identification Number (GSTIN). This number is used for filing returns and conducting business transactions.
  - **Input Tax Credit (ITC):** One of the key features of GST is the seamless flow of input tax credit. Registered businesses can claim ITC on GST paid on inputs, reducing the tax liability on the output.
  - **E-Way Bill:** For the movement of goods worth a specified amount between states, businesses are required to generate an electronic waybill (e-way bill) through the GSTN portal.
  - **Anti-Profiteering Authority:** An Anti-Profiteering Authority has been established to ensure that businesses pass on the benefits of reduced tax rates or input tax credits to consumers by lowering prices.
  - **Threshold Limit:** Small businesses with an annual turnover below a specific threshold are exempt from GST registration. This threshold limit varies for different states.

Digital Tax

- Recently, the G24 grouping objected to the proposal of making sovereign commitments to not introduce any fu-

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ture digital services tax like equalization levy, potentially delaying implementation of the global tax deal.

- **About Digital Tax**
  - Digital Tax refers to a type of direct tax imposed on digital goods, services, or digital business activities.
  - In India, a 6% equalization levy was introduced on non-resident digital companies, such as Google, initially targeting online advertising services. However, in 2020, the Indian Income-tax Act expanded the scope of this levy, often referred to as 'Equalisation Levy 2.0 (EL 2.0)', through the Finance Act 2020. EL 2.0 came into effect on April 1, 2020.
  - This levy is expected to continue beyond 2023 due to challenges in implementing a global tax deal intended to replace such levies imposed by individual nations.
  - Under the new framework, EL 2.0 now includes a 2% Digital Service Tax (DST) or equalization levy applied to trade and services provided by foreign e-commerce companies like Amazon and Walmart-owned Flipkart, among others, with an annual turnover of Rs.2 crore or more.
  - The primary objective of DST is to ensure that non-resident digital service providers contribute their fair share of taxes on the revenues they generate within the Indian digital market.
  - This taxation mechanism addresses the evolving digital economy and aims to establish a level playing field for domestic and foreign digital businesses operating in India.

Virtual Digital Tax

- Central Board of Direct Taxes (CBDT) has amended income tax rules to specify ways to comply with the new TDS provision on virtual digital assets (VDAs).
- Income derived from the transfer of Virtual Digital Assets (VDAs) will be subject to taxation at a fixed rate of 30%.
- This tax rate applies without the possibility of offsetting it against any other losses.
- **About Virtual Digital Assets**
  - The Finance Bill 2022 has provided a definition for Virtual Digital Assets (VDAs) under the Income Tax Act, 1961.
  - According to this definition, VDAs encompass any form of information, code, number, or token generated through cryptographic methods or other means, which can be electronically transferred, stored, or traded.
  - This broad definition includes various digital assets such as cryptocurrencies, non-fungible tokens (NFTs), dematerialized shares, promotional currencies, e-books, and more.
  - VDAs represent digital representations of value that can be exchanged, either with or without consideration. This category encompasses a wide range of digital assets, reflecting the evolving landscape of digital transactions and ownership.

Fiscal Deficit Management

- Ministry of Finance informed the states that borrowing by state-owned companies, special purpose vehicles or agencies borrow from the markets, will be considered under the states' Fiscal Responsibility and Budget Management (FRBM) limit.
- As this borrowing has an impact on Revenue deficit and Fiscal Deficit of these borrowing needs the consent of the Union Government under Article 293(3) of the Constitution.

About FRBM Act, 2003

- **Fiscal Responsibility and Budget Management Committee (Section 4):** This section establishes the Fiscal Responsibility and Budget Management Committee, which is responsible for reviewing the government's fiscal performance and making recommendations.
- **Fiscal Policy Strategy Statement (Section 5):** This section mandates the central government to lay before Parliament a Medium-Term Fiscal Policy Statement that sets out the government's fiscal objectives and strategies for achieving them.
- **Targets for Fiscal Indicators (Section 6):** This section specifies the annual and medium-term fiscal targets, including those for fiscal deficit, revenue deficit, and outstanding debt, to be adhered to by the government.
- **Escape Clauses (Section 7):** This section allows the government to deviate from fiscal targets in case of exceptional circumstances like national security concerns, natural calamities, or a significant fall in real GDP growth.
- **Transparency and Accountability (Section 8):** This section mandates the central government to publish quarterly and annual reports on fiscal performance, providing detailed information on revenue, expenditure, deficits, and debt.
- **Annual Statement and Targets (Section 9):** This section requires the government to present an annual statement of the fiscal balance, along with fiscal targets and strategies for the coming year.
- **Prudent Debt Management (Section 10):** This section emphasizes prudent debt management practices and sets limits on the central government's outstanding debt as a percentage of GDP.
- **Borrowings by the Central Government (Section 11):** This section regulates borrowings by the central government and requires that all borrowings are used for capital expenditure and not for financing revenue deficits.
- **Prohibition of Grant of Loans and Advances (Section 12):** This section prohibits the central government from making loans or advances to any state government or giving any guarantee.
- **Amendment of this Act (Section 13):** This section empowers the government to amend the FRBM Act, subject to certain conditions and the requirement to present any such amendments before Parliament.

Science & Technology

India's Progress in Space Technology

Chandrayaan-3

- Chandrayaan-3 has made history by becoming the first mission to soft-land on the lunar south pole, a region that has never been explored before. The mission aimed to demonstrate safe and soft lunar landing, rover mobility, and in-situ scientific experiments.
- India now joined the United States, Russia, and China as one of the few countries to successfully land on the Moon.

About Chandrayaan Missions

Chandrayaan 1

- Chandrayaan 1 was India's first lunar probe and was launched on October 22, 2008. It was designed to study the Moon from orbit and help explore its surface.
- The mission's **main objectives were to** -
  - **Study Lunar Topography and Mineralogy:** Chandrayaan 1 carried instruments that allowed it to create high-resolution 3D maps of the lunar surface and analyze its mineral composition.
  - **Search for Water Ice:** One of the key goals was to detect the presence of water molecules on the lunar surface. The Moon's polar regions were believed to have areas in permanent shadow where water ice might accumulate.
  - **Investigate Moon's Exosphere:** The spacecraft studied the Moon's exosphere, which is a very thin atmosphere-like layer of gas and dust surrounding the Moon.
  - **High-Resolution Imaging:** Chandrayaan 1's Moon Impact Probe (MIP) was released and impacted the Moon's surface, capturing images and data during its descent.
- **Outcomes of Chandrayaan 1**
  - **Discovery of Water Molecules:** Chandrayaan 1 made a significant discovery of water molecules on the Moon's surface. This finding provided valuable insights into the Moon's history and potential for future exploration.
  - **Mapping the Moon:** The spacecraft provided detailed topographical and mineralogical maps of the lunar surface, aiding our understanding of its geology.
  - **Confirmation of Exosphere:** Chandrayaan 1 confirmed the presence of an exosphere around the Moon, which had been previously theorized.

Chandrayaan 2

- Chandrayaan 2 was India's second lunar exploration mission and aimed to build upon the successes of Chandrayaan 1.
- It consisted of an orbiter, a lander named Vikram, and a rover named Pragyan. Launched on July 22, 2019, Chandrayaan 2 **had the following goals:**
  - **Orbital Studies:** The orbiter was designed to study the Moon's surface, exosphere, and map the distribution of elements and minerals.
  - **Soft Landing and Rover Deployment:** The lander, Vikram, was intended to perform a soft landing near the Moon's south pole and deploy the rover, Pragyan, to explore the lunar surface.
  - **Scientific Investigations:** The rover was equipped to analyze soil samples and perform experiments to understand the lunar surface's properties.
- **Outcomes of Chandrayaan 2**
  - While the Chandrayaan 2 mission achieved some significant milestones, such as successfully entering lunar orbit and releasing the lander and rover, the mission encountered challenges during the landing phase.
  - The lander Vikram lost communication with ISRO during its descent and unfortunately crash-landed on the Moon's surface.
  - Despite the lander's setback, the orbiter continues to function well and has been sending back valuable data. It has made contributions to our understanding of the Moon's surface composition, exosphere, and surface temperatures.

Chandrayaan-3

- Chandrayaan-3 is anticipated to function for a minimum of one lunar day, equivalent to 14 Earth days, while stationed on the lunar surface.
- The Pragyan rover is programmed to traverse within a 500-meter radius of its landing site, executing experiments and relaying data and images to the lander.
- Data and images acquired by the rover will be transmitted via the Vikram lander to the orbiter, which will subsequently transmit them back to Earth.
- The lander and rover modules are collectively equipped with advanced scientific instruments, specially designed to carry out thorough investigations across a wide array of lunar attributes.
- These instruments are tailored to conduct comprehensive analyses encompassing terrain assessment, mineralogical composition, surface chemistry, atmospheric properties, and significantly, the quest for water and potential reservoirs of resources on the lunar surface.

Some Findings

- **Temperature Variation:** The observations made by ChaSTE (Chandra's Surface Thermophysical Experiment), one of the four instruments present on the lander

module showed that while temperatures on the surface were over 50 °C (122 °F), they dropped to nearly −10 °C (14 °F) just a few millimetres below the surface. The measurements suggested that the topsoil of the lunar surface did not conduct heat very well, and insulated the sub-surface from heat.

- **Detection of Sulphur:** The laser-induced breakdown spectroscope (LIBS) instrument onboard the Pragyan rover has "unambiguously" confirmed the presence of sulfur in the lunar surface near the south pole.
- Other elements such as aluminium, calcium, iron, chromium, titanium, manganese, silicon, and oxygen (O) have also been detected.

Artemis Accords

- Recently, India's Prime Minister announced India's decision to join the Artemis Accords during the visit to the United States.
- National Aeronautics and Space Administration (NASA) and Indian Space Research Organisation (ISRO) will collaborate to send Indian astronauts, trained at the Johnson Space Center in Houston, Texas, to the International Space Station (ISS) in 2024.
- India became the 27th country to sign the nonbinding Artemis Accords.

About Artemis Accord

- The Artemis Accords are a set of principles and guidelines that lay out a framework for international cooperation in lunar exploration and utilization.
- **Principles/Commitments**
  - **Peaceful Purposes:** Signatories commit to exploring the Moon for peaceful purposes and refrain from any harmful interference with other missions.
  - **Transparency:** Participating countries agree to share their plans and coordinate with other signatories to prevent conflicts and enhance safety.
  - **Inter-operability:** The Accords encourage the use of compatible systems and standards to facilitate communication and collaboration between different missions and spacecraft.
  - **Sustainable Exploration:** Signatories commit to minimizing space debris, avoiding harmful interference with historic lunar sites, and preserving the outer space environment for future generations.
  - **Rights to Resources:** The Accords affirm that international law, including the Outer Space Treaty, applies to lunar activities, and that resource extraction must be conducted in accordance with those laws.
  - **Registration of Space Objects:** Countries agree to register their space objects and provide orbital information to prevent collisions and enhance space situational awareness.
  - **Release of Scientific Data:** The Accords promote the open sharing of scientific data to advance understanding of the Moon and space.
  - **Emergency Assistance:** Participating nations pledge to provide assistance to astronauts in distress and coordinate efforts to respond to emergencies.
  - **Deconfliction of Activities:** The Accords emphasize the importance of coordinating activities to avoid harmful interference and conflicts in space.
- **Missions**
  - **Artemis-I: Unmanned Lunar Mission:** The inception of the Artemis program initiated with the launch of the spacecraft named "Orion" atop the Space Launch System (SLS) from NASA's Kennedy Space Center on November 16, 2022. Utilizing the robust capabilities of the super heavy-lift launch vehicle, SLS propelled Orion on a solitary mission directly towards the moon.
  - **Artemis-II: Manned Lunar Flyby Mission:** Scheduled for the year 2024, Artemis-II stands as a significant milestone as the inaugural crewed mission within the Artemis program. Four astronauts are slated to board the SLS, executing a series of intricate maneuvers to gradually expand their orbit around Earth. This mission also encompasses a lunar flyby before the craft returns to Earth.
  - **Artemis-III: Human Lunar Return:** With a projected timeline of 2025, Artemis-III stands out as a monumental achievement in the realm of human space exploration, marking astronauts' triumphant return to the moon. Building upon the lunar flyby of Artemis-II, this mission reaches an even greater zenith by enabling astronauts to make a controlled descent and touch down on the lunar surface, unlocking the potential for comprehensive lunar studies.

PSLV C55/TeLEOS-2

- Recently, ISRO (Indian Space Research Organization) has successfully launched the PSLV (Polar Satellite Launch Vehicle)-C55/TeLEOS-2 mission from the Satish Dhawan Space Centre, Sriharikota in Andhra Pradesh.
- It marks the 57th voyage of the Polar Satellite Launch Vehicle (PSLV) and the 16th venture utilizing the PSLV Core Alone configuration (PSLV-CA).
- The mission is exclusively undertaken in partnership with NSIL (NewSpace India Limited), signifying a dedicated commercial endeavour.
- The primary satellite embarked on this journey is TeLEOS-2, accompanied by Lumelite-4 as a co-passenger satellite, both originating from Singapore.
- In a pioneering move, the scientists leveraged the PSLV Orbital Experimental Module-2 (POEM-2) as an orbital platform to conduct scientific experiments facilitated by non-separating payloads nestled within it.
- **TeLEOS-2,** the focal point of this mission, stands as an Earth Observation Satellite (EOS) primed to significantly contribute to remote sensing applications.

- Building upon the foundation laid by TeLEOS-1, which found its way into low Earth orbit for similar purposes back in 2015, ISRO continues to foster its partnership with Singapore, having successfully launched nine satellites for the nation.
- A distinctive feature of TeLEOS-2 lies in its Synthetic Aperture Radar (SAR) payload, endowed with the prowess to capture imagery at an impressive 1-meter full-polarimetric resolution.
- This technology enables seamless all-weather imaging, ensuring comprehensive coverage day and night. SAR operates on an ingenious principle, utilizing radar antenna motion to craft intricate 3D images of the target area.'

NavIC Satellite NVS-01

- The NVS-01 satellite was successfully launched into a Geosynchronous Transfer Orbit by the Indian Space Research Organisation (ISRO) using the GSLV-F12. After a 19-minute journey, it was precisely positioned in its designated orbit.
- GSLV-F12 marks the 15th mission of India's GSLV (Geosynchronous Satellite Launch Vehicle) series and the 9th flight featuring the utilization of an indigenous cryogenic stage.
- Notably, this marks the 6th operational flight of GSLV equipped with an indigenous cryogenic stage, representing a significant advancement in India's space capabilities.
- This satellite stands as the inaugural member of ISRO's next-generation NVS (Navigational Satellite) series of payloads. Its primary objective revolves around ensuring continuity for the NavIC (Navigation in Indian Constellation) services.
- NavIC serves as India's regional navigation satellite system, akin to the global GPS system. It provides accurate and real-time navigation services across the expanse of India and up to a radius of 1,500 kilometers beyond its borders.

About NavIC

- NavIC, which stands for Navigation with Indian Constellation, is an autonomous satellite navigation system developed by the Indian Space Research Organisation (ISRO).
- **Features**
  - **Satellite Constellation:** NavIC consists of a constellation of seven satellites: three in geostationary orbit (GEO) and four in geosynchronous orbit (GSO). The geostationary satellites provide continuous coverage over the Indian subcontinent, while the geosynchronous satellites enhance the accuracy of the system.
  - **Coverage Area:** While the primary coverage area is India and its surrounding region, NavIC extends to about 1,500 kilometers beyond its borders, ensuring improved accuracy and reliability in this zone.
  - **Applications:** NavIC is designed to provide accurate positioning information for a range of applications, including transportation, navigation, disaster management, precision agriculture, search and rescue operations, and scientific research.
  - **Signal Types:** NavIC uses two types of signals i.e., Standard Positioning Service (SPS) for civilian use and Restricted Service (RS) for authorized users.
  - **Accuracy:** NavIC aims to provide a position accuracy of better than 20 meters in the primary service area. The system can offer even higher accuracy for specific applications through differential correction techniques.

Zoonotic Diseases

World Zoonosis Day

- The Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying recently conducted an awareness program on zoonotic diseases as part of the Aazadi Ka Amrit Mahostav initiative on World Zoonosis Day (July 6th, 2023).
- The program aimed to educate farmers about zoonotic disease risks and national efforts for prevention. Due to their close contact with animals, farmers are at higher risk of contracting zoonotic diseases.

About Zoonotic Diseases

- Zoonotic diseases, also known as zoonoses, are infectious diseases that can be transmitted between animals and humans.
- **Modes of Transmission (Agents)**

➢ **Bacteria:** Bacterial zoonotic pathogens can cause a variety of infections in humans. Some common examples include:
  - **Salmonella and Campylobacter:** These bacteria are frequently associated with foodborne illnesses originating from the consumption of contaminated meat, poultry, and dairy products.
  - **Yersinia pestis:** Responsible for causing plague, this bacterium can be transmitted through flea bites and exposure to infected animals.
  - **Bartonella henselae:** Causes cat-scratch disease often transmitted through cat scratches or bites.

➢ **Viruses:** Viruses are a significant group of zoonotic pathogens with the potential to cause widespread outbreaks. Examples include:
  - **Influenza viruses:** Many influenza viruses originate in animals, particularly birds and pigs, before spilling over to humans.
  - **Coronaviruses:** Zoonotic coronaviruses, like SARS-CoV, MERS-CoV, and SARS-CoV-2 (responsible for COVID-19), have caused global health crises.
  - **Hantaviruses:** Transmitted through contact with rodent excreta, these viruses can cause hantavirus pulmonary syndrome and hemorrhagic fever.

- **Parasites:** Parasitic zoonotic diseases can result from contact with contaminated animals, vectors, or environments. Examples include:
  - Toxoplasma gondii: Transmitted through contact with infected cats or consumption of undercooked meat, it can lead to toxoplasmosis.
  - Giardia intestinalis: A waterborne parasite causing gastrointestinal symptoms after consumption of contaminated water.
  - Leishmania spp.: Transmitted through sandfly bites, causing leishmaniasis, which presents in various forms.
- **Fungi:** Fungal zoonotic diseases can be caused by fungi present in animals, their products, or environments. Examples include:
  - **Ringworm:** A common skin infection caused by dermatophyte fungi transmitted from animals to humans.
  - **Histoplasma capsulatum:** Causes histoplasmosis, often contracted through inhalation of fungal spores in environments with bird or bat droppings.
- **Prions:** Prions are misfolded proteins that can cause neurodegenerative diseases in humans and animals. While the transmission of prion diseases is less understood, examples include:
  - Bovine Spongiform Encephalopathy (BSE): Also known as mad cow disease, it can be transmitted to humans through consumption of infected cattle products.

- **Notable Examples**
  - **COVID-19:** The disease caused by the novel coronavirus SARS-CoV-2 is a zoonotic disease believed to have originated in bats and possibly transmitted to humans through an intermediate animal host.
  - **Ebola Virus Disease:** Ebola is a severe and often deadly disease that can be transmitted to humans from wild animals and then spread through human-to-human contact. Fruit bats are considered to be natural hosts of the virus.
  - **Rabies:** This viral disease is usually transmitted to humans through the bite of an infected animal, commonly dogs. It affects the central nervous system and is almost always fatal if not treated promptly.
  - **Avian Influenza (Bird Flu):** Various strains of avian influenza viruses can infect birds and occasionally jump to humans. Close contact with infected birds, their droppings, or contaminated surfaces can lead to transmission.
  - **Lyme Disease:** Caused by the bacterium Borrelia burgdorferi, Lyme disease is transmitted to humans through the bite of infected black-legged ticks. It can cause a range of symptoms affecting the skin, joints, heart, and nervous system.
  - **Leptospirosis:** This bacterial infection is often spread through contact with water or soil contaminated with the urine of infected animals, particularly rodents. It can cause flu-like symptoms and, in severe cases, lead to organ failure.
  - **HIV/AIDS:** Although HIV is believed to have originated from non-human primates, the virus has undergone changes that make it primarily a human-to-human transmission. However, the initial spillover likely occurred through zoonotic transmission.
  - **Hantavirus Pulmonary Syndrome:** This disease is caused by several types of hantaviruses and is transmitted to humans by rodents, primarily through their urine, droppings, or saliva. It can lead to severe respiratory symptoms.
  - **Brucellosis:** Humans can contract brucellosis from animals like cattle, goats, and pigs through direct contact or consumption of contaminated animal products such as raw milk or undercooked meat.

Applications of Artificial Intelligence

Major Applications of AI

Healthcare

- AI assists in medical diagnosis, drug discovery, and personalized treatment plans.
- Machine learning algorithms analyze medical data to predict disease outbreaks and optimize patient care.
- **Example:** SigTuple, an Indian startup, uses AI to analyze medical images like blood samples, aiding in the diagnosis of diseases like malaria and tuberculosis.

Finance

- AI algorithms analyze market trends, predict stock prices, and manage investment portfolios.
- Chatbots provide customer support for banking and financial services.
- **Example:** Paytm's AI-powered wealth management platform, Paytm Money, assists users in making informed investment decisions based on their financial goals.

Retail and E-commerce

- AI powers recommendation systems that suggest products based on user preferences.
- Virtual shopping assistants and chatbots enhance customer engagement and improve shopping experiences.
- **Example:** Myntra, an Indian online fashion retailer, employs AI algorithms to personalize product recommendations and enhance the shopping experience.

Manufacturing

- AI-driven robotics automate manufacturing processes, enhancing efficiency and precision.
- Predictive maintenance using AI minimizes downtime by identifying potential equipment failures.
- **Example:** TVS Motor Company uses AI-driven robots in its manufacturing process to improve precision and efficiency in vehicle assembly.

Transportation

- Autonomous vehicles use AI to navigate and make real-time decisions.
- Traffic management systems optimize routes and reduce congestion.
- **Example:** Atal Indore City Transport Services Limited (AICTSL) uses an AI-based system to optimize bus routes and schedules in Indore, improving public transportation efficiency.

Energy and Utilities

- AI optimizes energy consumption, predicts equipment failures, and enhances grid management.
- Smart meters and sensors improve energy efficiency in homes and buildings.
- **Example:** Energyly, an Indian energy analytics startup, uses AI to monitor energy consumption in homes and businesses, helping users reduce energy costs.

Agriculture

- AI analyzes data to improve crop yields, manage irrigation, and monitor soil health.
- Drones equipped with AI technology monitor and analyze fields.
- **Example:** CropX, an Indian agri-tech company, offers an AI-driven soil moisture monitoring system that helps farmers optimize irrigation and conserve water.

Education

- AI-powered platforms offer personalized learning experiences and adaptive curricula.
- Natural language processing (NLP) enables intelligent tutoring systems.
- **Example:** Eckovation, an Indian edtech platform, uses AI to deliver personalized learning content and assessments to students in various languages.

Entertainment

- AI generates content such as music, art, and video games.
- Recommendation algorithms suggest movies, shows, and content based on user preferences.
- **Example:** Gaana, a popular Indian music streaming platform, uses AI to curate personalized playlists for users based on their listening history.

Cybersecurity

- AI detects and prevents cyber threats by identifying patterns and anomalies in network traffic.
- Machine learning models help identifies potential security breaches.
- **Example:** Quick Heal Technologies, an Indian cybersecurity company, employs AI-driven threat detection to protect individuals and businesses from cyberattacks.

Natural Language Processing (NLP)

- NLP enables voice assistants, chatbots, and language translation.
- Sentiment analysis gauges public opinions on social media and reviews.
- **Example:** Haptik, an Indian AI chatbot platform, provides customer support and assistance in multiple languages, catering to diverse user needs.

Environmental Conservation

- AI analyzes data from sensors and satellites to monitor environmental changes and predict natural disasters.
- AI aids in wildlife conservation efforts by tracking and protecting endangered species.
- **Example:** WRI India uses AI to analyze satellite data and monitor forest cover changes, aiding in forest conservation and wildlife protection efforts.

Human Resources

- AI assists in recruiting by analyzing resumes, conducting initial interviews, and matching candidates to job roles.
- Employee engagement and performance can be assessed using AI-driven tools.
- **Example:** Belong, an Indian HR tech company, uses AI to match job seekers with suitable job openings and provide personalized career recommendations.

Smart Cities

- AI enhances urban planning by analyzing data from sensors to optimize infrastructure and services.
- Traffic management and waste management systems benefit from AI insights.
- **Example:** Pune Smart City Development Corporation uses AI-based analytics to manage traffic flow and optimize the timing of traffic signals, improving urban mobility.

Language Translation

- AI-driven language translation tools bridge communication gaps and facilitate global interactions.
- **Example:** Reverie Language Technologies offers AI-based language translation solutions to bridge language barriers and improve communication in India's diverse linguistic landscape.

Government Initiatives for AI

- Ministry of Electronics and IT (MeitY) has initiated a programme titled **FutureSkills PRIME** in collaboration with NASSCOM, a B2C framework for re-skilling/up-skilling of IT professionals in 10 Emerging are as including Artificial Intelligence.
- Government has published the **National Strategy for Artificial Intelligence** in June 2018 and proposes to develop an ecosystem for the research and adoption of Artificial Intelligence.
- Government has launched **'National AI Portal'** which is a repository of Artificial Intelligence (AI) based initiatives in the country at a single place.

- Government has initiated **'Visvesvaraya PhD Scheme'** with an objective to enhance the number of PhDs in Electronics System Design & Manufacturing (ESDM) and IT/IT Enabled Services (IT/ITES) sectors in the country. The research areas under the scheme include Artificial Intelligence and Machine Learning.
- **National Programme on Responsible Use of AI for Youth:** With the objective to empower the youth to become AI ready and help reduce the skill gap, government along with Industry partner has started this initiative to promote AI awareness among Government school going children.
- To foster innovation through research, government has created several **'Centres of Excellence'** on various Emerging Technologies including Artificial Intelligence.
- Department of Science & Technology is implementing the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)** to promote R&D, Human Resource Development (HRD), Technology Development, Entrepreneurship Development, International Collaboration etc. in reputed institutes across the country in advanced technologies including Machine Learning and Artificial Intelligence.
- Government of India has also joined the league of leading economies including USA, UK, EU, Australia, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, Republic of Korea, Singapore as a founding member of the **Global Partnership on Artificial Intelligence (GPAI)**, which is an international and multi-stakeholder initiative to guide the responsible development and use of AI, grounded in human rights, inclusion, diversity, innovation, and economic growth.
- Government of India organized **Responsible AI for Social Empowerment (RAISE)** in 2020, a first-of-its-kind global meeting of minds on Artificial Intelligence to drive India's vision and roadmap for social transformation, inclusion and empowerment through responsible AI.

Emerging Technologies & AI

GPT-3 and Large Language Models

- OpenAI's GPT-3 (Generative Pre-trained Transformer 3) generated significant interest due to its remarkable natural language processing capabilities.
- It has been used for various applications like content generation, chatbots, language translation, and more.

AI Ethics and Regulation

- There has been increasing emphasis on the ethical use of AI and the need for regulations to ensure responsible AI development.
- Discussions around bias, transparency, accountability, and data privacy have gained prominence.

AI in Healthcare

- AI has been applied to healthcare for diagnosis, drug discovery, personalized treatment plans, and predicting disease outbreaks.
- The COVID-19 pandemic accelerated the use of AI in epidemiology, vaccine development, and tracking.
- Qure.ai, an Indian startup, developed an AI-powered radiology platform that assists in detecting abnormalities in X-rays and CT scans.

AI in Autonomous Vehicles

- The development of self-driving cars and autonomous vehicle technology has continued, with companies like Tesla, Waymo, and others making advancements in AI-driven navigation and safety features.
- Bengaluru's traffic police have adopted AI to optimize traffic signal timings, reducing congestion and improving the flow of vehicles.

AI in Finance

- AI algorithms are increasingly used for trading, risk assessment, fraud detection, and customer service in the financial sector.
- ZestMoney uses AI to analyze alternate data sources and offer micro-loans to individuals who lack traditional credit histories.

AI in Sustainability

- AI is being employed to address environmental and sustainability challenges, including climate modeling, energy optimization, and resource management.
- IIT Kharagpur developed an AI-based system that can predict the impact of natural disasters like floods, aiding in timely response and resource allocation.
- The India Meteorological Department (IMD) employs AI and machine learning to improve the accuracy of weather forecasting.

AI and Creativity

- AI-generated art, music, and content creation have been on the rise. AI tools assist creators in generating novel and innovative works.

AI in Drug Discovery

- AI and machine learning are being used to accelerate the drug discovery process by predicting potential drug candidates and simulating molecular interactions.

Quantum Computing and AI

- Explorations into the synergy between quantum computing and AI have been ongoing, with the potential to solve complex problems more efficiently.

AI Hardware

- Developments in specialized hardware, such as AI accelerators and neuromorphic chips, have aimed to improve the efficiency of AI computations.

AI in Agriculture

- AI applications in agriculture include crop monitoring, disease detection, yield prediction, and precision agriculture techniques.

- CropIn, an Indian agritech company, uses AI to provide farmers with insights on crop health, weather forecasts, and disease prediction, helping them make informed decisions.

AI in Education

- AI-powered platforms for personalized learning, intelligent tutoring systems, and educational analytics have been developed to enhance educational experiences.
- Squirrel AI, in partnership with edtech companies in India, offers AI-driven personalized tutoring for students to improve learning outcomes.

Conversational AI

- Advancements in natural language processing have led to more sophisticated chatbots, virtual assistants, and human-computer interactions.
- Indian startup Reverie Language Technologies uses AI to enable digital platforms to support multiple Indian languages, improving accessibility and inclusivity.

AI in Robotics

- AI-driven robotics continues to advance, with applications ranging from industrial automation to healthcare and disaster response.

Applications of Rare Earth Metals

Field of Application

Electronics and Technology

- **Neodymium (Nd), Praseodymium (Pr), and Dysprosium (Dy):** These rare earth metals are essential for producing powerful magnets used in various electronic devices, including hard drives, electric motors, headphones, and speakers.

Catalysis and Chemical Processes

- **Cerium (Ce) and Lanthanum (La):** These rare earth metals are used as catalysts in industrial processes, such as petroleum refining and automotive catalytic converters.

Laser Technology

- **Yttrium (Y) and Neodymium (Nd):** Yttrium is used in lasers for medical and industrial applications, while neodymium is used in solid-state lasers for welding, cutting, and engraving.

LEDs and Lighting

- **Europium (Eu) and Yttrium (Y):** Europium is used to create the red color in LED displays, while yttrium is used to produce white LED lights.

Batteries and Energy Storage

- **Lanthanum (La) and Cerium (Ce):** These rare earth metals are used in nickel-metal hydride (NiMH) rechargeable batteries, which are commonly found in hybrid electric vehicles.

Medical Imaging and Treatment

- **Gadolinium (Gd) and Yttrium (Y):** Gadolinium is used in contrast agents for magnetic resonance imaging (MRI), and yttrium-90 is used in cancer treatments.

Glass and Ceramics

- **Erbium (Er) and Yttrium (Y):** Erbium is used in the production of fiber-optic cables, and yttrium is used to stabilize the crystal structure of ceramics and glass.

Aerospace and Defense

- **Neodymium (Nd), Praseodymium (Pr), and Gadolinium (Gd):** These rare earth metals are used in aerospace applications, including aircraft engines, missile guidance systems, and radar technology.

Clean Energy Technologies

- **Neodymium (Nd), Dysprosium (Dy), and Terbium (Tb):** These rare earth metals are used in the production of wind turbines, electric vehicle motors, and energy-efficient lighting.

Magnets for Green Technologies

- **Neodymium (Nd), Praseodymium (Pr), and Dysprosium (Dy):** These rare earth metals are essential for the development of high-efficiency electric vehicle motors and generators for renewable energy sources.

Communications

- **Yttrium (Y) and Erbium (Er):** Yttrium is used in superconductors for communication satellites, and erbium-doped fiber amplifiers enhance signal transmission in optical communication networks.

Water Treatment and Filtration

- **Cerium (Ce):** Cerium-based compounds are used in water treatment systems to remove impurities and pollutants from water sources.

India and Rare Earth Metals

- India is known to possess approximately 6 per cent of the global rare earth deposits, positioning it as the fifth largest repository of these crucial minerals. This recognition led to the establishment of Indian Rare Earths Limited (IREL) as early as 1950.
- Further expanding into this sector, Toyota Tsusho formed a strategic Joint Venture (JV) with IREL during the period of 2010-11.
- **Challenges**
  - The rare earth industry faces intricate challenges that necessitate expert knowledge, substantial capital investments, and advanced technology for the intricate processes of extraction, processing, and logistics.
  - Presently, there are gaps in demand, entrepreneurship, technological investments, and the involvement of the private sector in this domain.

- The demand-supply dynamics have largely been influenced by the consistent supply from China, thus causing many manufacturers to overlook the dominance of a single nation in this field.

- **Solution:** Effectively addressing these challenges requires well-designed policies that strike a balance between environmental considerations and the scale of production.
- **India Specific Measures**
  - Exploration activities in India have traditionally been under the purview of government agencies such as the Bureau of Mines and the Department of Atomic Energy.
  - The responsibility for mining and processing has been centralized under the stewardship of IREL.
  - The Ministry of Mines has sought to bolster mineral production through amendments to the Mines and Minerals Development and Regulation Act 2021; however, more comprehensive efforts are required to foster growth in this sector.

Important Technologies and Terminologies of Nanotechnology and Biotechnology

Nanotechnology

- **Nanoparticles:** Tiny particles with dimensions on the nanoscale. They have unique properties due to their size, making them useful in areas such as drug delivery, catalysis, and electronics.
- **Nanomaterials:** Materials engineered at the nanoscale. These materials exhibit novel properties compared to bulk materials and are used in various applications, including coatings, sensors, and composites.
- **Nanotubes:** Cylindrical structures made of carbon or other materials. Carbon nanotubes, for instance, have exceptional mechanical, electrical, and thermal properties.
- **Nanowires:** Ultra-thin wires with diameters in the nanometer range. They are used in nanoelectronics, sensors, and energy storage devices.
- **Quantum Dots:** Semiconductor nanocrystals that emit specific colors of light based on their size. They are used in displays, solar cells, and biological imaging.
- **Self-Assembly:** The process by which molecules and nanoparticles organize themselves into ordered structures without external intervention. This technique is used to create nanoscale patterns.
- **Atomic Force Microscopy (AFM):** A technique that uses a sharp tip to scan a surface at the atomic or molecular scale, providing detailed information about surface topography and properties.
- **Scanning Tunneling Microscopy (STM):** A technique that uses a fine metal probe to scan a surface, detecting variations in electron flow between the probe and the surface. It is used to visualize individual atoms on surfaces.
- **Bottom-Up Approach:** A strategy in nanofabrication where small building blocks, such as molecules or atoms, are assembled to create larger structures or devices.
- **Top-Down Approach:** A strategy in nanofabrication where larger structures are manipulated and sculpted to achieve nanoscale features, often using techniques such as lithography.
- **Nanomedicine:** The application of nanotechnology in healthcare, including targeted drug delivery, imaging, and diagnostics at the cellular and molecular level.
- **Nanoelectronics:** The use of nanoscale materials and components in electronic devices, enabling faster, smaller, and more energy-efficient electronics.
- **Nanotechnology in Energy** Applications in energy storage, solar cells, and fuel cells, where nanomaterials enhance efficiency and performance.
- **Nanotechnology in Environmental Remediation:** Using nanomaterials to remove pollutants, contaminants, and toxins from air, water, and soil.
- **Nanotechnology in Textiles:** Incorporating nanoparticles into fabrics to enhance properties like stain resistance, UV protection, and antimicrobial activity.
- **Nanoimprint Lithography:** A high-resolution technique used to create nanoscale patterns on surfaces by pressing a mold onto a substrate.
- **Molecular Nanotechnology:** A theoretical concept of building structures and devices by manipulating individual molecules and atoms.
- **Fullerene:** A type of carbon molecule composed of 60 carbon atoms arranged in a soccer ball-like structure. Fullerene derivatives have applications in medicine and materials science.
- **Nanorobotics:** The design and control of nanoscale robots or machines for various applications, including targeted drug delivery and precise manipulation of materials.
- **Nanotoxicology:** The study of the potential toxicity of nanomaterials, considering their interactions with biological systems and the environment.

India and Nanotechnology (Major Initiatives)

- **Indian Nanoelectronics Users Program (INUP):** An initiative that provides Indian researchers with access to advanced nanofabrication facilities for developing nanoelectronic devices and systems.
- **NanoHerbs Project:** Under the Department of Science and Technology (DST), the NanoHerbs project focuses on developing nano-formulations of traditional Indian herbs to enhance their therapeutic properties and efficacy.
- **CSIR Nanotechnology Initiatives:** The Council of Scientific and Industrial Research (CSIR) in India has several laboratories dedicated to nanotechnology research. CSIR-National Chemical Laboratory (CSIR-NCL) and CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB) are among them, working on various applications of nanotechnology.

- **Bharat Nanotech:** An Indian company specializing in research and commercialization of nanotechnology-based products. They have developed products like nano-sized coatings for corrosion protection and self-cleaning surfaces.
- **Nano Mission by Department of Science and Technology:** The Nano Mission was launched to promote research and development in nanotechnology in India. It supports projects in various areas, including nanomaterials, nanoelectronics, and nanomedicine.
- **Nano technology institutes** like Indian Institute of Nano sciences at Bangalore, Mumbai, and Kolkata.
- Eighteen **sophisticated analytical instruments facilities (SAIFs)** established by DST across India play a major role in the advanced characterization and synthesis of nanomaterials for various applications.
- The **Center of Excellence in Nanoscience** and Nanotechnology established by DST Nanomission helps research and PG students in various thrust areas.
- **Thematic Units of Excellence (TUEs)** for various areas of nanoscience and nanotechnology play a major role in product-based research to support nanotechnology.
- **UNNATI Program (UNispace Nanosatellite Assembly & Training by ISRO):** UNNATI is a capacity building programme on nanosatellite development. The Programme provides opportunities to the participants from developing countries to strengthen their capabilities in assembling, integrating and testing of nanosatellites.

Biotechnology

Genetic Modification (GM) Technology

- Recently the Department of Biotechnology (DBT) issued Guidelines for Safety Assessment of Genome Edited Plants, 2022 easing norms for research into genetically modified (GM) crops.
- Genetic Modification (GM) technology involves altering the genetic makeup of an organism by introducing foreign genetic material into its DNA.
- This technology allows scientists to add, delete, or modify specific genes to confer desired traits. GM technology has applications in agriculture, medicine, and industry.
- In agriculture, GM crops can be engineered for enhanced yield, resistance to pests and diseases, and improved nutritional content.
- For example, Bt Brinjal (eggplant/aubergine) is a genetically modified crop developed in India to resist certain insect pests. However, its commercialization has been a subject of debate due to concerns over environmental and health impacts.

Genome Editing

- Genome editing is a precise technique used to alter specific DNA sequences within an organism's genome.
- The revolutionary CRISPR-Cas9 system is widely used for genome editing. Researchers can target and modify genes with remarkable accuracy, enabling the correction of genetic mutations responsible for diseases.
- Genome editing has potential applications in treating genetic disorders, developing disease-resistant crops, and creating animal models for studying diseases.
- For example, Indian researchers have used CRISPR-Cas9 technology to edit the genome of mosquitoes to reduce their ability to transmit diseases like malaria. This approach aims to control disease transmission by altering mosquito populations.

Genome Sequencing

- In a recently published research, an international team described the first-ever sequencing of a complete human genome.
- Genome sequencing involves determining the complete DNA sequence of an organism.
- It provides insights into the genetic composition and structure of an organism's genome.
- Human genome sequencing, for example, has facilitated the identification of disease-causing mutations and personalized medicine.
- Genome sequencing also aids in studying evolutionary relationships among species and understanding their genetic diversity.
- For example, IndiGen programme aims to undertake whole genome sequencing of 1000 Indian individuals representing diverse ethnic groups from India. It is funded by Council of Scientific and Industrial Research (CSIR).

Genome Surveillance

- Genome surveillance involves monitoring changes in an organism's genome over time.
- It helps identify genetic variations, mutations, and alterations that may be linked to diseases or environmental factors.
- Surveillance of microbial genomes is crucial for tracking the emergence of drug-resistant strains of pathogens and guiding public health responses.
- Continuous genome surveillance provides valuable data for epidemiological studies and the development of targeted therapies.
- For example, in response to the COVID-19 pandemic, Indian scientists conducted genomic surveillance of the SARS-CoV-2 virus. They sequenced viral genomes to track mutations and understand transmission dynamics, aiding in pandemic management.

Cloning

- Recently, China has successfully cloned a wild Arctic wolf for the first time in the world. Cloning is the process of creating genetically identical copies of organisms, cells, or DNA fragments.

- There are several methods of cloning, including reproductive cloning, where a whole organism is duplicated, and therapeutic cloning, which produces embryonic stem cells for medical research.
- Cloning has applications in agriculture for reproducing high-yielding livestock and preserving endangered species. However, ethical and societal considerations surround human cloning due to the complex ethical implications involved.

Types of Cloning

- **Gene/DNA Cloning**
  - Gene/DNA cloning involves moving a DNA segment from one organism into a self-replicating genetic component, like a bacterial plasmid.
  - In gene cloning, specific DNA fragments are inserted into plasmids, allowing the plasmid to replicate and carry the DNA when transferred to other cells.
- **Reproductive Cloning**
  - Reproductive cloning entails taking the nucleus from a somatic cell and placing it into an enucleated oocyte (egg cell).
  - This manipulated oocyte is then prompted to divide, generating an embryo with the same genetic material as the donor cell.
  - This method, known as Somatic Cell Nuclear Transfer (SCNT), was employed in the creation of Dolly the sheep, marking the first successful mammal cloning.
- **Therapeutic Cloning**
  - Therapeutic cloning parallels reproductive cloning up to the embryo's creation.
  - Subsequently, the resulting embryo is cultured within a laboratory setting.
  - The primary goal of therapeutic cloning is not to produce a living organism but to generate embryonic stem cells for medical research and potential therapeutic purposes.
- For example, In 2001, Indian scientists successfully cloned a buffalo named "Samrupa." This achievement contributed to advancements in animal reproduction and livestock breeding techniques.

Indian Biological Data Centre

- Recently, Indian Biological Data Center (IBDC) was inaugurated at Faridabad, Haryana.
- **About Biological Data:** Biological data refers to information and observations related to living organisms and their interactions. It encompasses a wide range of data types collected from various fields of biology, including genetics, genomics, ecology, evolution, microbiology, and more.
- **Types of Biological Data -**
  - **Genetic Data:** Genetic data includes DNA sequences, gene annotations, and information about genes, alleles, and mutations. It is crucial for understanding inheritance, genetic variation, and the genetic basis of traits and diseases.
  - **Genomic Data:** Genomic data comprises entire DNA sequences of organisms, including genes, non-coding regions, and regulatory elements. It allows researchers to study the organization and evolution of genomes.
  - **Proteomic Data:** Proteomic data includes information about proteins, their structures, functions, and interactions. It helps unravel the roles of proteins in cellular processes and disease mechanisms.
  - **Ecological Data:** Ecological data involves observations of interactions between organisms and their environment. It encompasses data on population sizes, species diversity, habitats, and ecosystem dynamics.
  - **Phenotypic Data:** Phenotypic data includes information about observable traits of organisms, such as physical characteristics, behaviors, and physiological responses. It helps in understanding how genes and the environment influence traits.
  - **Taxonomic Data:** Taxonomic data categorizes and classifies organisms based on their evolutionary relationships and shared characteristics. It forms the foundation of biodiversity studies and conservation efforts.
  - **Evolutionary Data:** Evolutionary data includes information about the evolutionary history and relationships between species. It aids in reconstructing the tree of life and understanding the mechanisms of evolution.
  - **Metagenomic Data:** Metagenomic data involves analyzing genetic material collected directly from environmental samples, such as soil, water, or the human microbiome. It provides insights into the diversity and functions of microbial communities.
  - **Behavioral Data:** Behavioral data documents the behaviors and interactions of animals in their natural habitats or controlled settings. It contributes to understanding animal communication, mating, foraging, and social dynamics.
  - **Spatial Data:** Spatial data includes geographical information about the distribution of species, habitats, and ecosystems. Geographic Information Systems (GIS) help visualize and analyze spatial patterns.
  - **Clinical Data:** Clinical data includes medical records, patient information, and genetic data relevant to understanding diseases and healthcare.
  - **Temporal Data:** Temporal data tracks changes over time, such as population fluctuations, seasonal patterns, and evolutionary trends.

Ecology & Environment

Critically Endangered/Endangered Indian Species

Critically Endangered (Fauna)

Mammals

- **Andaman White-toothed Shrew:** This shrew species was endemic to the Andaman Islands. Its specific ecological requirements and habitat loss led to its reduction.
- **Jenkin's Andaman Spiny Shrew:** Another shrew species endemic to the Andaman Islands, its habitat loss and restricted distribution contributed to its reduction.
- **Nicobar White-tailed Shrew:** Found in the Nicobar Islands, this shrew species faced habitat loss.
- **Large Rock Rat or Elvira Rat:** Endemic to the Elvira rock formation in the Indian state of Andhra Pradesh, this rat species faced habitat destruction and thus is endangered.
- **Namdapha Flying Squirrel:** This flying squirrel species was found in the forests of Namdapha National Park. Habitat loss and hunting led to its reduced numbers.
- **Malabar Civet:** The Malabar Civet, once found in the Western Ghats, faced habitat loss, deforestation, and hunting, leading to its low numbers.
- **Sumatran Rhinoceros:** Once inhabiting the foothills of the eastern Himalayas, the Sumatran rhinoceros became extinct in India due to habitat degradation and poaching.
- **Javan Rhinoceros:** This rhinoceros species, once found in parts of India, became extinct due to hunting and habitat loss.

Birds

- **Aythya Baeri:** Also known as Baer's Pochard, this diving duck species has seen rapid declines due to habitat degradation and hunting.
- **Great Indian Bustard:** This large bird species has faced habitat loss and fragmentation, leading to its critically endangered status.
- **Bengal Florican:** A grassland bird, the Bengal Florican is endangered due to habitat loss, primarily from agricultural expansion.
- **Siberian Crane:** The Siberian Crane is a migratory bird that once visited India but has seen drastic population declines due to wetland degradation along its migration route.
- **Spoon-billed Sandpiper:** This shorebird species faces habitat loss and disturbance along its migration route, contributing to its critically endangered status.
- **Sociable Lapwing:** This bird species faces habitat loss and hunting during its migratory journeys, resulting in its critically endangered status.
- **Jerdon's Courser:** Once believed to be extinct, this bird species was rediscovered but remains critically endangered due to habitat loss.
- **White-backed Vulture:** Vulture species like the White-backed Vulture have seen population declines due to diclofenac poisoning from consuming treated livestock carcasses.
- **Red-headed Vulture:** Similar to the White-backed Vulture, the Red-headed Vulture has faced declines due to diclofenac poisoning.
- **White-bellied Heron:** This heron species is critically endangered due to habitat loss and disturbance in its wetland habitats.
- **Slender-billed Vulture:** Like other vulture species, the Slender-billed Vulture has seen declines due to diclofenac poisoning.
- **Indian White-rumped Vulture (Gyps bengalensis):** The population of the Indian White-rumped Vulture has declined drastically due to the use of the veterinary drug diclofenac, causing kidney failure in vultures that feed on treated carcasses.
- **Indian Vulture:** Populations of Indian Vultures have drastically declined due to diclofenac poisoning.
- **Pink-headed Duck:** This duck species, once found in India, is now considered extinct due to habitat loss and hunting.
- **Himalayan Quail:** The Himalayan Quail has reduced in number due to habitat loss and hunting.

Reptiles

- **Gharial:** The Gharial, a unique crocodile species, is critically endangered due to habitat degradation and threats from fishing gear.
- **Hawksbill Turtle:** This marine turtle species is endangered due to habitat loss, illegal trade of its shells, and climate change impacts on nesting sites.
- **River Terrapin:** Also known as the Northern River Terrapin, this freshwater turtle species is critically endangered due to habitat loss and illegal trade.
- **Bengal Roof Turtle:** Endemic to north-eastern India, this turtle species is critically endangered due to habitat loss and hunting.

Fishes

- **Pondicherry Shark:** Once found along the Indian coasts, this shark species has become extinct due to overfishing and habitat degradation.

- **Ganges Shark:** Another shark species, it faced similar threats as the Pondicherry Shark and is believed to be extinct.
- **Large-tooth Sawfish:** Like the Knife-tooth Sawfish, this species of sawfish has also become extinct due to overfishing and habitat loss.
- **Narrow-snout Sawfish:** Once found along the Indian coasts, the Narrow-snout Sawfish has become endangered due to overfishing and habitat degradation.

Endangered Species in India (Fauna)

Mammals

- **Pygmy Hog (Porcula salvania):** The Pygmy Hog is the world's smallest and rarest wild pig species. It was once found in the tall grasslands and dense undergrowth of the Himalayan foothills but faced habitat loss and human encroachment, leading to its critically endangered status.
- **Kondana Rat:** This rat species was endemic to the Kondana caves in Maharashtra. Habitat loss and disturbance led to decrease in its number.
- **Indian Elephant (Elephas maximus indicus):** Once found across a wide range in India, the Indian elephant is now limited to fragmented habitats. Many populations are isolated and face threats from habitat loss and human-wildlife conflicts.
- **Gee's Goden Langur (Trachypithecus geei):** Gee's Golden Langur is an endangered primate species found in India and Bhutan. They are known for their striking golden fur and inhabit subtropical and tropical moist forests.
- **Otter Civet (Cynogale Bennettii):** The Otter Civet is a rare and elusive carnivore found in Southeast Asia, including countries like Myanmar and Thailand. It is known for its semi-aquatic habits and otter-like appearance.

Birds

- **Forest Owlet:** Endemic to the forests of central India, this owl species was believed to be extinct until its rediscovery in 1997. It's critically endangered due to habitat loss.

Fishes

- **Knife-tooth Sawfish:** This sawfish species was once found along the Indian coastlines but has become extinct due to overfishing and habitat degradation.

Major Critically Endangered Species (Flora)

- **Himalayan Blue Poppy (Meconopsis aculeata):** The Himalayan Blue Poppy is renowned for its striking blue flowers. Habitat loss due to deforestation, collection for the horticulture trade, and difficulty in cultivation have made it rare and threatened.
- **Agarwood:** Agarwood is a fragrant resinous wood that is highly sought after for its aromatic properties. It's used in perfumes, incense, and traditional medicines. Agarwood trees are primarily found in Southeast Asia.

Endangered Species in India (Flora)

- **Himalayan Yew (Taxus wallichiana):** The Himalayan Yew is a coniferous tree species that grows in the Himalayas. Its bark produces taxol, a compound with anti-cancer properties, making it a valuable resource. Overharvesting for taxol extraction and habitat loss have threatened this species.
- **Indian Pitcher Plant (Nepenthes khasiana):** The Indian Pitcher Plant is a carnivorous plant found in the Northeastern Himalayas. It has specialized leaves that form pitcher-like structures to trap and digest insects. Habitat loss and illegal collection for horticulture pose threats to its survival.
- **Kulavu (Prioria Pinnata):** Kulavu is the Tamil name for the tree species Prioria pinnata, which is commonly known as the Indian Rosewood or Malabar Rosewood. It is a tropical hardwood tree native to the Indian subcontinent and Southeast Asia.
- **Etlingera Echinulata:** Etlingera echinulata is a species of flowering plant belonging to the ginger family, Zingiberaceae. It is commonly known as the "Torch Ginger" or "Porcelain Rose."

Institutional Framework for Protection of Biodiversity in India

Acts for Protection of Biodiversity in India

Fisheries Act, 1897

- **Section 3:** Provides for the power to make rules for the regulation of fishing.
- **Section 4:** Empowers the government to declare closed seasons and protected areas for fisheries.
- **Section 5:** Prohibits certain destructive fishing methods.

Indian Forests Act, 1927

- **Section 2:** Defines reserved forests, protected forests, and village forests.
- **Section 26A:** Empowers the government to constitute a Forest Development Tax Fund for financing afforestation and reforestation.
- **Section 39:** Grants forest officers powers of entry, search, seizure, and arrest.

Mining and Mineral Development Regulation Act, 1957

- **Section 4:** Grants the central government the authority to make rules for regulating the grant of mineral concessions.
- **Section 9B:** Empowers the government to levy royalties on minerals.
- **Section 18:** Provides for the suspension or cancellation of mining leases.

Prevention of Cruelty to Animals Act, 1960

- **Section 11:** Lists acts of cruelty to animals that are prohibited.

- **Section 22:** Establishes the Animal Welfare Board of India and outlines its functions.
- **Section 38:** Provides for penalties for offenses related to cruelty to animals.

Wildlife Protection Act, 1972

- **Section 2:** Defines various terms, including wildlife, hunting, and captive animals.
- **Section 9:** Prohibits hunting of specified animals without a license or permission.
- **Section 49B:** Outlines penalties for offenses related to wildlife trade.
- **Important Schedules**
  - Schedule I & II provides absolute protection with highest penalties for violation.
  - Schedule III & IV species are also protected, but the penalties are lower.
  - Schedule V includes "vermin" animals, which can be hunted.
  - Schedule VI includes endemic plants that are prohibited from cultivation & planting.

Water (Prevention and Control of Pollution) Act, 1974

- **Section 24:** Empowers the central government to make rules for the prevention and control of water pollution.
- **Section 33A:** Provides for the constitution of Central and State Pollution Control Boards.
- **Section 48:** Outlines penalties for contravening the provisions of the Act.

Forest Conservation Act, 1980

- **Section 2:** Defines terms related to the act, including forest land and non-forest purposes.
- **Section 3:** Requires prior approval of the central government for diversion of forest land for non-forest purposes.
- **Section 4:** Empowers the central government to set conditions while granting approval for diversion.

Air (Prevention and Control of Pollution) Act, 1981

- **Section 17:** Empowers the central government to make rules for preventing and controlling air pollution.
- **Section 16:** Provides for the constitution of Central and State Pollution Control Boards.
- **Section 37:** Outlines penalties for contravening the provisions of the Act.

Environment Protection Act, 1986

- **Section 3:** Empowers the central government to take measures for environmental protection.
- **Section 6:** Provides for the appointment of officers for the prevention and control of environmental pollution.
- **Section 15:** Outlines penalties for offenses related to violation of the provisions of the Act.

Biological Diversity Act, 2002

- **Section 3:** Establishes the National Biodiversity Authority to regulate access to biological resources and associated traditional knowledge.
- **Section 4:** Provides for the constitution of State Biodiversity Boards at the state level.
- **Section 6:** Outlines the process for obtaining approval for accessing biological resources for commercial purposes.

Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006

- **Section 3:** Recognizes the rights of forest-dwelling communities to hold and live in forest land.
- **Section 4:** Provides for the determination and verification of rights by the Gram Sabha.
- **Section 6:** Outlines the procedure for the recognition and vesting of forest rights.

Bodies for Protection of Biodiversity in India

The Wildlife Institute of India (WII)

- WII is an autonomous institution under the Ministry of Environment, Forest and Climate Change (MoEFCC).
- It is located in Dehradun, Uttarakhand, and was established in 1982.
- WII conducts research, training, and capacity-building in the field of wildlife conservation and management.
- The institute's activities include biodiversity studies, wildlife research, habitat assessment, and training programs for wildlife professionals.
- WII plays a crucial role in providing scientific inputs for policy formulation and implementation related to wildlife conservation in India.

Indian Council of Forestry Research and Education (ICFRE)

- ICFRE is an autonomous organization under the MoEFCC.
- It was established in 1987 and has its headquarters in Dehradun, Uttarakhand.
- ICFRE is responsible for coordinating and promoting forestry research, education, and extension activities in India.
- The organization consists of various research institutes and centers dedicated to different aspects of forestry, including forest management, tree breeding, wildlife, and ecology.

Botanical Survey of India (BSI)

- BSI is a research organization under the MoEFCC.
- It was established in 1890 and is headquartered in Kolkata, West Bengal, with regional offices across India.
- BSI's primary mandate is to document and survey the plant diversity in India and its associated ecosystems.
- The organization conducts botanical research, taxonomic studies, and exploration of plant resources.
- BSI contributes to plant conservation, biodiversity assessment, and ecological studies.

Zoological Survey of India (ZSI)

- ZSI is a research organization under the MoEFCC.
- It was founded in 1916 and is headquartered in Kolkata, West Bengal.

- ZSI's main objective is to document and study the faunal diversity of India, including animals, insects, and marine life.
- The organization conducts taxonomic research, species discovery, and ecological studies.
- ZSI plays a vital role in wildlife conservation, biodiversity assessment, and providing information about India's animal diversity.

Forest Survey of India (FSI)

- FSI is a government organization under the MoEFCC.
- It was established in 1981 and is headquartered in Dehradun, Uttarakhand.
- FSI is responsible for monitoring and assessing forest resources, forest cover, and land use changes in the country.
- The organization uses remote sensing and GIS technologies to generate data and information about forest resources and changes.
- FSI's reports and data support policy decisions related to forest conservation and management.

Indira Gandhi National Forest Academy (IGNFA)

- IGNFA is an institution under the MoEFCC.
- It was established in 1987 and is located in Dehradun, Uttarakhand.
- IGNFA offers training programs for Indian Forest Service officers and other professionals in the field of forest and wildlife management.
- The academy provides specialized training in areas such as wildlife conservation, forest policy, and forest governance.
- IGNFA plays a crucial role in capacity-building and enhancing the skills of forest officers and conservation practitioners.

Wildlife Crime Control Bureau (WCCB)

- The WCCB was established in 2007 under the provisions of the Wildlife (Protection) Act, 1972.
- It operates under the Ministry of Environment, Forest and Climate Change (MoEFCC) and is headquartered in New Delhi, India.
- The primary objective of the WCCB is to combat organized wildlife crime and enforce the provisions of the Wildlife (Protection) Act and other relevant laws.
- The bureau is responsible for coordinating efforts to prevent and control illegal trade in wildlife and their derivatives, including animals, plants, and their parts.

Schemes for Protection of Biodiversity in India

Integrated Development of Wildlife Habitats (IDWH)

- **Launch Year:** 2009
- This scheme focuses on the protection and management of wildlife habitats and aims to strengthen the protected area network in India.
- It supports habitat improvement, anti-poaching activities, wildlife monitoring, and capacity building for frontline staff.

Project Tiger

- **Launch Year:** 1973
- Project Tiger is a flagship initiative for the conservation of tigers and their habitats.
- It aims to ensure a viable population of tigers in India's natural landscapes by addressing threats such as poaching and habitat loss.

Project Elephant

- **Launch Year:** 1992
- Project Elephant is dedicated to the conservation and protection of Asian elephants and their habitats.
- It focuses on addressing human-elephant conflict, improving habitat connectivity, and raising awareness about elephant conservation.

National Biodiversity Mission

- **Launch Year:** 2009
- This mission promotes the conservation and sustainable use of biodiversity, as well as equitable sharing of benefits arising from genetic resources and traditional knowledge.
- It supports biodiversity documentation, research, capacity-building, and awareness campaigns.

National Mission on Himalayan Studies (NMHS)

- **Launch Year:** 2015
- NMHS is dedicated to understanding the Himalayan region's biodiversity, ecosystems, and their vulnerabilities.
- It supports research, conservation, and sustainable development in the Himalayan region.

Biodiversity Conservation and Rural Livelihood Improvement Project (BCRLIP)

- This project focuses on promoting biodiversity conservation while improving the livelihoods of local communities.
- It supports sustainable resource management, capacity-building, and income generation activities.

National Mission on Sustainable Agriculture (NMSA)

- **Launch Year:** 2014
- NMSA promotes sustainable agricultural practices that are compatible with biodiversity conservation.
- It encourages agro-ecological approaches, organic farming, and efficient use of natural resources.

Climate Change: Global Initiatives

Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC)

- The 27th Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC), held at Sharm El-Sheikh, Egypt, recently concluded.

- COP is the supreme decision-making body of the UNFCCC, bringing together representatives from nearly every country to discuss and negotiate global climate agreements.
- The UNFCCC was adopted at the Earth Summit in Rio de Janeiro in 1992 and entered into force in 1994.
- **Key Agreements**
  - **Kyoto Protocol (1997):** A legally binding protocol that sets emission reduction targets for developed countries. It entered into force in 2005 and had its first commitment period from 2008 to 2012.
  - **Marrakech Accords (COP7, 2001):** These accords included decisions on various aspects of the implementation of the Kyoto Protocol, such as rules for emissions trading, clean development mechanism (CDM) modalities, and compliance mechanisms.
  - **Copenhagen Accord (COP15, 2009):** While not a legally binding treaty, the Copenhagen Accord was a political agreement that recognized the need to limit global temperature rise and emphasized voluntary emission reduction targets and financial assistance for developing countries.
  - **Cancun Agreements (COP16, 2010):** The agreements established the framework for advancing mitigation, adaptation, finance, technology transfer, and capacity-building efforts, while also setting up the Green Climate Fund to support developing countries' climate actions.
  - **Doha Amendment (2012):** An amendment to the Kyoto Protocol that established a second commitment period (2013-2020) with new emission reduction targets for developed countries.
  - **Lima Call for Climate Action (COP20, 2014):** The call set the stage for the adoption of the Paris Agreement by inviting countries to communicate their intended nationally determined contributions (INDCs) towards climate action.
  - **Adoption of the Paris Agreement (COP21, 2015):** The landmark agreement aims to limit global warming well below 2 degrees Celsius above pre-industrial levels, with efforts to limit it to 1.5 degrees Celsius. It emphasizes NDCs, global stocktaking, and support for adaptation and mitigation actions.

Stockholm Conference

- Recently, Stockholm+50 meeting was held at Stockholm, Sweden to commemorate the 50 years since the 1972 United Nations Conference on the Human Environment (also known as the Stockholm Conference).
- It was the first major international conference to address global environmental issues comprehensively.
- The conference led to increased international awareness about environmental challenges and catalyzed the creation of various institutions, conventions, and initiatives to address environmental concerns.
- **Important Principles**
  - **Precautionary Principle:** The Vienna Convention for the Protection of the Ozone Layer was the first multilateral environmental agreement (MEA) that codified precautionary measures in 1985.
  - **Polluter-Pays Principle (PPP):** Those producing pollution should bear the costs of managing it to prevent damage to human health and the environment

Montreal Protocol

- International Day for the Preservation of the Ozone Layer was celebrated on 16 September with the theme Montreal Protocol@35: global cooperation protecting life on earth.
- It was launched as 'Protocol of Vienna Convention for the Protection of the Ozone Layer', 1985.
- Governments, scientists and industry work together to cut out 99% of all ozone-depleting substances (ODS).
- **Membership:** Ratified by all 198 UN Member States (including India).
- **Kigali Agreement**
  - Adopted in 2016 and entered into force in 2019.
  - Provided a path to achieve an 80% reduction in HFCs consumption by 2047.
  - Adopted because Montreal Protocol led to replacement of chlorofluorocarbons (CFCs) with Hydrofluorocarbons (HFCs) which do not destroy the Ozone layer but are extremely potent in causing global warming
- **India and Montreal Protocol**
  - India became a Party to Montreal Protocol in 1992
  - It has successfully met phase out targets of all ODS as per Montreal Protocol Schedule.
  - It approved the ratification of Kigali Amendment to Montreal Protocol in 2021. Accordingly, India has to start phase down by 2028 and cut HFC emission by 15% of 2024-26 levels by the year 2047.

UN Ocean Conference

- The second UNOC, co-hosted by Kenya and Portugal at Lisbon, ended with the Lisbon Declaration, a political declaration entitled 'Our Ocean, Our Future: call for action'.
- **About UN Ocean Conference**
  - The UN Ocean Conference was launched in 2017 to provide a platform for governments, civil society, and businesses to discuss and commit to actions that promote the conservation and sustainable use of oceans, seas, and marine resources.
  - The conference supports the implementation of Sustainable Development Goal 14 (**SDG 14 i.e., Life below Water**), which focuses on conserving and sustainably using the oceans, seas, and marine resources for sustainable development.
  - Through the conference, countries and stakeholders make voluntary commitments and partnerships to address marine pollution, overfishing, ocean acidification, and other critical ocean-related issues.

International Solar Alliance

- ISA in its General Assembly meeting approved the 'Solar Facility', which aims to attract private capital to flow into "underserved markets" in Africa.
- Solar Facility is a payment guarantee mechanism expected to stimulate investments into solar projects, with two financial components -
  - **Solar Payment Guarantee Fund** to provide a partial guarantee and enable investments in geographies that do not receive investments.
  - **Solar Insurance Fund** to reduce the burden of insurance premium for solar developers in pre-revenue phase of project.
- **About ISA**
  - The International Solar Alliance (ISA) was launched in 2015 by India and France as a coalition of countries aiming to promote the use of solar energy for sustainable development and energy security.
  - ISA focuses on mobilizing resources, sharing best practices, and promoting solar power deployment, particularly in solar-rich countries, to accelerate the transition to clean energy.
  - ISA seeks to make solar energy accessible and affordable, especially in countries with abundant sunlight, by facilitating investment in solar projects, technology transfer, and capacity-building.

Global Environmental Facility

- The GEF, established in 1991, is a multilateral financial mechanism that provides grants and funding to support projects that address global environmental challenges, such as biodiversity loss, climate change, and land degradation.
- GEF works in partnership with governments, non-governmental organizations, and the private sector to develop and implement projects that promote sustainable development and environmental conservation.
- **Funds managed by GEF**
  - **Special Climate Change Fund (SCCF):** It was established in 2001, to finance projects relating to adaptation, technology transfer and capacity building and energy, transport, industry, agriculture, forestry, and o Waste management and Economic diversification. It is open to all vulnerable developing countries.
  - **Least Developed Countries Fund (LDCF):** It is established in 2001 to support a work programme to assist Least Developed Country Parties (LDCs). It is only existing fund with mandate to finance the preparation and implementation of National Adaptation Programs of Action (NAPAs).

E-Waste Management in India

Acts/Laws for E-waste Management in India

E-waste (management) Rules 2022

- Electrical and electronic equipment, whole or in part discarded as waste, and rejects from manufacturing, refurbishment and repair processes
- **Coverage:** Every manufacturer, producer, refurbisher, dismantler, and recycler involved processing of e-waste with certain exceptions.
- Compulsory Registration of manufacturer, producer, refurbisher, or recycler of the eproducts with Central Pollution Control Board (CPCB).
- Introduction of Extended Producer Responsibility (EPR) Certificates to incentivize registered electronic waste recyclers by introducing (not part of 2016 Rules).
- **Responsibilities**
  - **Manufacturers:** To make the end product recyclable. The component made by different manufacturers should be compatible with each other.
  - **Producers**: They will obtain and implement extended producer responsibility targets.
  - **Recycler**: They need to ensure that the recycling processes and facilities are in accordance with the regulatory standards. They have to maintain a record of e-waste collected.
  - **State government**: They are entrusted with earmarking space for e-waste dismantling and recycling in the existing and upcoming industrial parks, estates, and industrial clusters.

Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2019

- It aims to strengthen the implementation of environmentally sound management of hazardous waste.
- Prohibition on the import of solid plastic waste even in SEZ & EOU (Export Oriented Units). Silk waste exports are exempted.
- Electrical & electronic assemblies and components manufactured in & exported from India if found defective can be imported back into the country, within a year of export, without obtaining permission.
- Industries that do not require consent under Water Act 1974 & Air Act 1981, are exempted under the 'Hazardous & Other Wastes Rules, 2016', provided that wastes generated by such industries are handed over to the authorized actual users, waste collectors, or disposal facilities.

The Consumer Protection Act, 2019

- The Consumer Protection Act is a comprehensive law that focuses on safeguarding consumer rights and interests.
- In the context of e-waste, this law is relevant because consumers have the right to seek compensation for any harm caused by defective products, including electronic devices.
- If a product poses health or safety risks due to improper design or manufacturing, consumers can take legal action against the manufacturer, seller, or service provider.

The Indian Penal Code, 1860

- The Indian Penal Code (IPC) is the main criminal code of India that defines various offenses and their punishments.

- Under the IPC, offenses related to environmental damage and endangerment can be applicable to improper e-waste disposal.
- For instance, Section 277 deals with water pollution, Section 278 deals with making the atmosphere noxious, and Section 427 deals with mischief causing damage to the amount of fifty rupees or more.
- These sections can be used to take legal action against individuals or entities responsible for polluting the environment through improper e-waste disposal.

The Public Liability Insurance Act, 1991

- This act establishes a framework for providing immediate relief to victims of accidents involving hazardous substances.
- If improper e-waste disposal leads to accidents causing damage to people, property, or the environment, this act can come into play to provide compensation to the affected parties.

International Convention for E-waste Management and India

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- While not exclusively focused on e-waste, the Basel Convention regulates the transboundary movement of hazardous waste, including electronic waste containing hazardous components.
- The Basel Ban Amendment, an annex to the convention, specifically prohibits the export of hazardous waste (including certain types of e-waste) from developed to developing countries for any reason, including recycling.

Stockholm Convention on Persistent Organic Pollutants (POPs)

- This convention aims to eliminate or restrict the production and use of persistent organic pollutants that pose significant risks to human health and the environment.
- E-waste, particularly when improperly managed, can contribute to the release of POPs, such as certain flame retardants found in electronics.

United Nations Environment Programme (UNEP) Initiatives

- UNEP, through its Resource Efficiency Programme and other initiatives, works on promoting sustainable e-waste management practices at the international level.
- The UNEP-led "Global Partnership on Waste Management" addresses various waste streams, including e-waste, with the goal of promoting sustainable waste management practices.

Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union

- While not a global convention, the WEEE Directive is a European Union law that sets the framework for the proper handling and disposal of electrical and electronic waste within EU member states.
- The principles of this directive have influenced e-waste management practices in various parts of the world.

Air Quality Guidelines and Mechanisms

Legal-Institutional Framework of Air Quality

Air (Prevention and Control of Pollution) Act, 1981

- This is a comprehensive legislation aimed at preventing, controlling, and abating air pollution.
- The Act empowers the Central and State Pollution Control Boards to regulate and enforce air quality standards, inspect industries, and take measures to control emissions.
- While not exclusively focused on air quality, this act empowers the central government to take measures to protect and improve the environment, including air quality.

The Environment (Protection) Act, 1986

- While not exclusively focused on air pollution, this Act provides the overarching framework for environmental protection and pollution control in India.
- The Act empowers the central government to take measures to protect and improve the environment, including air quality.

Motor Vehicles Act, 1988

- The Motor Vehicles Act sets standards for vehicle emissions and provides the legal basis for regulating vehicular pollution.
- The Act empowers authorities to specify emission norms for vehicles and take actions against vehicles that do not comply with these norms.
- This act empowers the government to specify emission norms for vehicles.
- It mandates the installation of pollution control devices and regular emission testing for vehicles.
- By controlling vehicular emissions, this act contributes to improving air quality.

Bharat Stage Emission Standards

- While not a standalone law, these standards are crucial for controlling vehicular emissions.
- Adopted in line with European emission standards, Bharat Stage (BS) standards set limits on the permissible levels of pollutants emitted from vehicles.
- These standards set specific limits on pollutants emitted from vehicles, such as carbon monoxide, nitrogen oxides, particulate matter, and hydrocarbons.
- The implementation of these standards ensures that vehicles on the road comply with emission norms, thereby reducing vehicular emissions.

Guidelines and Mechanisms on Air Quality

National Air Quality Monitoring Programme (NAMP)

- NAMP is a nationwide program implemented by the Central Pollution Control Board (CPCB) to monitor air quality across various cities and regions in India.
- It establishes a network of ambient air quality monitoring stations that continuously measure concentrations of pollutants like PM10, PM2.5, SO2, NO2, CO, and O3.
- NAMP provides real-time data on air quality, which is used for calculating the Air Quality Index (AQI) and making informed policy decisions.

National Clean Air Programme (NCAP)

- It was launched in 2019 for reducing for comprehensive mitigation actions for prevention, control and abatement of air pollution.
- Initially envisaged to achieve targets of 20 to 30 % reduction in Particulate Matter (PM10 and PM2.5) concentration by 2024 across the country taking 2017 as the base year.
- **Key features -**
  - Preparation of City-specific action plans which include measures for strengthening the air quality monitoring network, reducing vehicular and industrial emissions, increasing public awareness, etc.
  - Implemented in 132 cities including 123 Non-Attainment cities (NACs) identified under NCAP based on non-conforming to National Ambient Air Quality Standards (NAAQS) consecutively for five years and 8 million Plus Cities (MPCs) identified by 15th Finance Commission (XV-FC), for receiving performance-based grant for air quality improvement.
  - PRANA (Portal for Regulation of Air-pollution in Non-Attainment cities) portal monitors the implementation of NCAP

National Ambient Air Quality Standards (NAAQS)

- NAAQS are the permissible limits of air pollutants in the ambient air, established by the CPCB to safeguard human health and the environment.
- The standards cover pollutants like SO2, NO2, PM10, PM2.5, CO, O3, and Pb. Different categories (industrial, residential, rural, etc.) have different limits.
- NAAQS provide a basis for evaluating the air quality of different areas and guiding pollution control measures.

National Air Quality Index (AQI)

- The AQI is a numerical scale that communicates air quality to the public in a simple and understandable manner.
- It categorizes air quality into different ranges (Good, Moderate, Unhealthy, Very Unhealthy, Hazardous) based on pollutant concentrations.
- AQI helps individuals make decisions about outdoor activities and encourages actions to reduce exposure to pollutants.

Comprehensive Action Plan (CAP)

- The Comprehensive Action Plan is a key component of the National Clean Air Programme (NCAP), launched in 2019.
- CAP focuses on city-specific strategies to improve air quality by addressing pollution sources, strengthening monitoring, enhancing public awareness, and promoting research and capacity building.

Graded Response Action Plan (GRAP)

- GRAP is a set of measures designed to combat air pollution levels that exceed specified thresholds.
- The plan outlines actions to be taken in various pollution scenarios, ranging from 'Moderate' to 'Severe+' categories of air quality.
- GRAP triggers actions like restrictions on construction activities, implementation of odd-even vehicle schemes, and closure of certain industries to reduce pollution.

Swachh Vayu Sarvekshan

- Ministry of Environment, Forest and Climate Change will launch Swachh Vayu Sarvekshan under NCAP.
- 131 cities to be ranked in the country for implementing City Action Plans prepared NCAP for reducing air pollution upto 40% by 2025-26.
- Cities categorized into 3 groups based on population (population > 10 lakh, population between 3 to 10 lakh and population < 3 lakh).
- Based on the self-assessment and third party assessment, 3 best performing cities in each group will be given cash award.

Continuous Ambient Air Quality Monitoring System (CAAQMS)

- This program expands the coverage of air quality monitoring by setting up continuous monitoring stations across various cities and regions.
- CAAQMS provides real-time data on air quality parameters, helping authorities and the public make immediate decisions based on current conditions.
- The CAAQMS is widely implemented across major cities in India. For example, cities like Delhi, Mumbai, Bangalore, and Kolkata have established networks of monitoring stations that provide real-time air quality data.

Mobile Air Quality Monitoring Units

- Some regions deploy mobile air quality monitoring units that can move around the city to measure air quality at different locations.
- These units help identify pollution hotspots and areas with varying pollution levels.
- Mobile monitoring units are used in various cities to assess air quality in different areas. For instance, in Delhi, mobile units are deployed to measure pollution levels in specific neighbourhoods and traffic-congested areas. ■■

YOJANA | Kurukshetra | DREAM 2047

Exam Pointers

Yojana (August 2023)

- Azadi ka Amrit Mahotsav (AKAM)
- Sweet Revolution
- Leveraging Technology for Accessible Quality Education
- Indian Economy: Historical Perspective
- Atal Innovation Mission
- Agriculture - A Journey From Shortage to Surplus

Kurukshetra (August 2023)

- Nutrition
- Food and Nutritional Security of Families
- Nutrition Health and School Education
- Food to Remove Nutritional Deficiencies

Dream 2047 (July 2023)

- World of Tigers
- Self-reliant India: Infrastructure
- Weather Forecast

Yojana (August 2023)

Azadi ka Amrit Mahotsav (AKAM)

- How many themes are there in the Amrit Mahotsav of Independence? **- Five**
- What are the names of five pillars of Amrit Mahotsav? **-1. Freedom struggle, 2. Idea@75, 3. Resolve@75, 4. Actions@75 and 5. Achievement@75**
- What is the importance of each theme of Azadi Ka Amrit Mahotsav? **-Each pillar encompassed the story of India and narrated the Nation's evolution**
- What did the theme 'Freedom struggle' commemorates?**-It commemorates milestones in our history and our unsung heroes**
- The second theme 'Ideas @75' stands for **- It celebrates ideas and ideals that shaped our nation**
- What does the theme – 'Action@75' denote?- **It highlights the strides that have been made towards actualizing commitments for new India**
- What does the fourth theme – 'Resolve @75' define? **- Reinforces our commitments towards achieving specific goals and targets**
- What does the fifth theme commemorate?- **Highlights India's progress and evolution in various sectors**
- What is the aim of 'Mera Gaon Meri Dharohar' initiative, under the Azadi Ka Amrit Mahotsa?- **Cultural mapping of 6.5 lakh villages in India including the profiling of the geographic , demographic and creative characteristics of each village**
- What is the name of the event being organized every weekend at Kartavya Path?- **Kalanjali**
- What is the purpose of the Vitasta Mohatsav under the AKAM?- **It highlights the influence of Kashmiri culture on the nation**
- What is "DHARA" event under AKAM? - **An ode to the Indian knowledge system which underlined India's ancient scientific knowledge in the fields of medicine, mathematics, astronomy, chemistry, etc.**
- With which government organisation has the Ministry of Culture partnered for the implementation of Mera Gaon Meri Dharohar scheme?- **Common Services Centres (CSC)**
- What is the main objective of Cultural Map International Mission? - **Preservation of India's rich art and culture**
- Which organization is implementing the Cultural Map International Mission? **- Indira Gandhi National Center for the Arts**
- Which are the nine subjects envisaged under Azadi Ke Amrit Mahotsav 2.0? - 1**. Women, 2. Children, 3. Tribal Empowerment, 3. Water, 4. Lifestyle for Environment (LiFE), 5. Health and Wellness, 6. Inclusive Development, 7. Self-reliant India, 8. Culture Pride, 9. Unity**

Health

- How many levels are there in India's health system? **- Three tiered system**
- What is the new name of National Rural Health Mission (NRHM)- **National Health Mission (NHM)**
- Which two schemes are included under Ayushman Bharat? **- 1. Health and Wellness Center and 2. Prime Minister Jan Arogya Yojana**
- Under which scheme, hospitalization and free in-patient services are provided to the poor and vulnerable section? **- Pradhan Mantri Jan Arogya Yojana**
- What percentage of population was provided financial assistance in 33 states and union territories under Pradhan Mantri Jan Arogya Yojana? **- 40%**
- Which scheme has been launched to develop the infrastructure of integrated digital health in the country? **-Ayushman Bharat Digital Mission (ABDM)**
- Which scheme is being run for complete immunization in India? **- Mission Indradhanush**
- In which year was Mission Indradhanush launched? – **2014**
- In which year the 'Universal Immunization Programmed' was started in a phased manner in India? **-1985**
- What is the percent reduction in Malaria patients between 2014 and 2021? **- 85.3 %**
- By which year India commits to eliminate TB? **- 2025**

Sweet Revolution

- When and where was the first attempt of beekeeping started in India? **–First in Bengal in 1882 and then in Punjab in 1883 - 84**

- In South India which principle was adopted for beekeeping between 1911- 17? - **Bee space**
- What is the name of the indigenous bee used for apiculture in South India? –**Apis cerana**
- Which foreign bee was cultivated for the first time in India? - **Apis mellifera**
- Where in India the exotic breed Apis melliferra was introduced for the first time?- **Nagrota Bagwan (Himachal Pradesh)**
- Central Sector Scheme National Beekeeping and Honey Mission is being funded by which organisation? - **National Bee Board**
- What is the main objective of National Bee Board? - **To increase the productivity of crops through parganas by promoting scientific beekeeping in India**
- Which three sub-schemes are included under the National Beekeeping and Honey Mission? – **Mini Mission-1, Mini Mission-2 and Mini Mission-3**

Vision for Industry

- As per FICCI Mackenzie report, by which year, India is expected to become a high income nation? - **2047**
- How many crore jobs can be created in the field of manufacturing in India by 2030? **- 6 to 7 crores**
- What was the real GDP growth rate of manufacturing in the year 2022? - **7.8 %**
- Which position does the smartphones occupy among the export items in the Indian export basket?- **Fifth largest share**
- Which country is the second-largest mobile phone producer in the World? – **India**

Leveraging Technology for Accessible Quality Education

- When was the National Education Policy 2020 introduced? – **29th July 2020**
- What are the objectives of the National Education Policy, 2020? - **To create accessible, equitable, and high-quality education for all**
- Which institution is the largest financier of education in the developing world? – **World Bank**
- When the Massive Open Online Course (MOOC) did came into existence in India? – **2011**
- What is the name of the India's own indigenous MOOC platform? - **SWAYAM**

Indian Economy: Historical Perspective

- What were the problems faced by the balance of payments in India in the 1980s and 90s? - **Large combined deficits of the central and state governments rising inflationary pressures and current account deficit**
- What policies were adopted by the Government of India in 1991 to introduce structural reforms in Indian Economy? - **License Raj elimination, foreign direct investment and encouragement to privatization**
- Which fiscal policy was introduced by the Government of India to overcome high combined gross fiscal deficit? - **Fiscal Responsibility and Budget Management Act, 2003**
- What is the average monthly collection of GST in the first quarter of the year 2023? **-1.7 lakh crore**
- What are the main outcomes of the implementation of Goods and Services Tax?- **Broadening the tax base, reduced compliance requirements, facilitated the free flow of goods across state borders, and contributed to the formalisation of the economy**
- Effective capital expenditure of the central government increased from 2.8 per cent in 2013-14 to what per cent in 2022-23? **-3.8 %**
- When was the National Logistics Policy implemented? - **2022**
- What is the main objective of the National Infrastructure Pipeline (NIP)? - **To improve infrastructure across the country**
- How much investment has been estimated in the National Infrastructure Pipeline by 2024 -25? - **111 lakh crore**

Atal Innovation Mission

- What are Atal Tinkering Labs(ATL)?- **State-of-the-art space to foster curiosity and innovation in young minds between grades 6th and 12th**
- What are the two flagship initiatives of ATL? **-ATL marathon and Tinkerpreneur**
- What are the types of tools and technologies included under the Atal Tinkering Lab?- **IoT, 3D printing, rapid prototyping tools, robotics, miniaturized electronics, DIY Kits**
- What is the aim of the Atal Incubation Centres (AICs)? - **To nurture innovative start-ups in their pursuit to become scalable and sustainable enterprises**
- Atal Community Innovation Centre (ACIC) aims to create a thriving ecosystem of innovation and entrepreneurship in which part of the country? - **Tier 2/3 cities, rural and tribal areas, the North East, J&K, and the Ladakh region**
- Which innovation under the ATL helps to encourage innovation and research in MSME industry?- **Atal Research and Innovation for Small Enterprises (ARISI)**
- For what purpose under the Department of Science and Technology National Innovation Foundation (NIF) was established by the Government of India? **- Strengthening grassroots technological innovations and traditional knowledge**
- In which year, the Science Technology and Innovation Policy was launched ? - **2013**
- In which year was Atal Innovation Mission was established under NITI Aayog? - **2016**
- What is the goal of Atal Innovation Mission India?- **To create a culture of innovation and entrepreneurship in India**

Agriculture - A Journey From Shortage to Surplus

- In which year, India drafted its first Five Year Plan?- **1951- 56**
- Under which plan, the United States had provided food grains to India? - **PL 480**
- What part of the total fund of the first five year plan was allocated to agriculture? **-1/3**

- What percentage was the budgetary allocation to the agriculture sector in the second five year plan ? **- 20%**
- Why was the third Five Year Plan unsuccessful? **- Chinese invasion, Indo-Pak war 1965, long drought**
- Which country is the largest producer of sugar in the world? **- India**
- Which country is the largest producer and consumer of pulses in the world? **- India**
- What is the total sugarcane production estimated during the year 2022-23? **- 468.8 MMT**
- How much oilseed production in India has increased from 108.29 lakh metric tons in the year 1985 to 2022-23? **- 400 LAC MMT**
- The per capita availability of food grains in India has increased from 395 grams in the year 1951 to what amount in the year 2022? **- 514.5 grams**
- India has recently set up an international center for which grain? **- Millets**
- What name is given to coarse cereals by India?- **Shree Ann**
- On whose advice Dugdha Cooperative Society, Anand, Gujarat was established? **-Sardar Vallabhbhai Patel**
- In which year, the National Dairy Development Board was established? **- 1964**
- In which decade India launched Operation Flood to achieve self-sufficiency in milk production? **- 1970s**
- In which year India stopped the regular commercial import of milk? **-Since 1976**
- India accounts for how much of the total global milk production? **- 24%**
- Worldwide average per capita availability of milk is? **-308 grams**
- Average per capita availability of milk in India in 2022? **- 444 grams**
- Estimated milk production in India in 2047? **- 628 million tons**
- What is the place of India in fish production in the world? **- 2nd**
- Silver Revolution is related to ? **- Egg production**
- What is the rank of India in egg production in the World? **-3rd**

Kurukshetra (August 2023)

Nutrition

- According to the NFHS-5, what are the weight related problems in Indian women? **- Being either overweight or underweight**
- What is the biggest cause of high maternal mortality? **– Anemia**
- According to NFHS-5 data what percentage of women have body mass index less than normal? **– 18.7%**
- According to NFHS-5 data what percentage of women are facing anemia? **- 57%**
- According to NFHS-5 data, what percentage of children under 5 years of age are stunted? **- 35.7**
- What percentage of children are underweight according NFHS-5? **- 7.7%**
- In which year the National Nutrition Policy was launched by the Government of India? **- 1993**
- In which year the National Action Plan on Malnutrition was implemented? **– 1995**
- In which year an action policy was prepared by the NITI Aayog to free India from malnutrition? **– 2017**
- In which year's budget, the falling nutrition level in India was highlighted by the Government of India? **- 2014 - 15**
- In which year Poshan Abhiyaan was started by the Government of India? **- 2018**
- Which ministry has been designated as the nodal agency for Poshan Abhiyaan? **- Ministry of Women and Child Development**
- What measures are being taken to reduce the prevalence of stunting, malnutrition and anemia under Poshan Abhiyaan **– 1. Infant and young child feeding, 2. Cleaning and Sanitation (WASH), 3. Deworming, 4. Provision of ORS, 5. Food Fortification**
- Which month has been declared as the Nutrition Month (Poshan Maah) by the Government of India? **- September (1 to 30)**
- In which year, Saksham Anganwadi and Nutrition 2.0 program has been approved by the Government of India**- 2022**
- What are the objectives of the Poshan Tracker app? **1. To bring transparency & strengthen nutrition delivery support systems and 2. Tracking nutrition service delivery.**

Food and Nutritional Security of Families

- What is meant by food security according to the Food and Agriculture Organisation?- **Physical and economic access for all people at all times to sufficient safe and nutritious food**
- What is meant by nutritional security according to the Food and Agriculture Organization? - **Availability of quantitatively and qualitatively balanced nutritious food to the individual at all times**
- Which of the Sustainable Development Goals (SDGs) aim to achieve food and nutritional security for household? **-Sustainable Development Goals 1, 2, 3, 5, 12, 13, 17**
- Which food items have been given the name of orphan crop in India after the Green Revolution? **- Coarse grains**
- What are the main nutrients found in coarse cereals? **- Calcium, Potassium, Magnesium, Iron, Manganese, Zinc, Vitamin B Complex**
- What is food fortification? - **Process of adding vitamins, minerals or other micronutrients to food items during the production process**
- In which year National Food Security Mission (NFSA) was implemented? **– 2013**
- On which date the Integrated Food Security Mission scheme was launched? **- 1st January 2023**
- Which two schemes have been integrated by the Government of India under the new Integrated Food Security Scheme? **- 1. Antyodaya Anna Yojana Households and 2. Priority Household Individuals**
- How much assistance is provided to pregnant women on the birth of their first child under Pradhan Mantri Matru Vandana Yojana (PMMVY)? **– Rs. 5000**

- Saksham Anganwadi and Nutrition 2.0 will be implemented as Integrated Nutrition Assistance Program for which period? **- 2021- 22 to 2025 -26**
- What is the purpose of PM Poshan Abhiyan (Pradhan Mantri Poshan Shakti Nirman)? - **To provide hot cooked food in government and government aided schools**
- For what period PM Poshan Yojana has been launched by the government of India? **-2021-22 to 2025-26**
- Which scheme has been replaced by the PM POSHAN ? **- Mid Day Meal Scheme**
- In which year Mid-Day Meal Scheme was started in India **– 15th August 1995**
- In which year the Mid-Day Meal Scheme was renamed 'PM POSHAN' or Pradhan Mantri Poshan Shakti Nirman? **- September 2021**
- Under the PM POSHAN Abhiyaan how many children are being covered across the country? - **About 11.80 crore children studying in 11.20 lakh schools**
- What is the purpose of nutrition garden? - **Ensuring nutritional supply through organically home grown vegetables and fruits**

Nutrition Health and School Education

- What is the purpose of Sustainable Development Goal 3? - **Health security and promotion of healthy lives at all ages**
- What is the purpose of Sustainable Development Goal 4? **- Quality education**
- What steps have been taken for the health and nutritional security of children in schools? – **1. Nutrition Mission, 2. Saksham Anganwadi and nutrition 2.2, 3. Nutrition campaign, 4. Nutrition education**
- School health and wellness program is being run under which program? **- Ayushman Bharat**
- What are the things focused under Saksham Anganwadi and Poshan 2.0? - **Nutrition support to women, girls and children Early childhood care and education and early encouragement**
- The Integrated Child Development Services (ICDS) and POSHAN (Prime Minister's Overarching Scheme for Holistic Nourishment) Abhiyaan has been restructured by the Government into which two schemes? **- Saksham Anganwadi and POSHAN 2.0**
- The 'Poshan Bhi Padhi Bhi' campaign is being conducted under which schemes? **-Saksham Anganwadi and Poshan 2.2**
- In which year, the flagship scheme, Poshan Bhi Padhi Bhi Abhiyan was launched? **- 10 May 2023**
- What is the main objective of the nutrition and education campaign? **-Providing protection and education to children in 1300000 Anganwadis**

Food to Remove Nutritional Deficiencies

- What is the main cause of nutrition problem in India?– **Poverty**
- Vitamin D is soluble in? **– Water**
- Which vitamin provides nutrition for the development of bones in the body? **- Vitamin D**
- Which disease is caused by deficiency of vitamin D in the body? **- Osteoporosis**
- Vitamin A is essential for the development of **- Healthy vision, Metabolism and Cell Growth**
- Which vitamin helps in better functioning of blood vessel? **- Vitamin C**
- Vitamin C is required in our body for the absorption of which element? **- Iron**
- Deficiency of which mineral is the major nutritional problem in India? **- Iron**
- Which vitamin helps in the synthesis of DNA and RNA? **– Vitamin B9 (Folic Acid)**
- Folate deficiency in our body is related to which vitamin? **- Vitamin B9**
- What is the role of calcium in our body? **- It builds bones and teeth**
- What are the main sources of calcium? **- Spinach, Cabbage, Broccoli, Okara**
- What is blue food? **– Food sourced from aquatic environments**
- What is the importance of blue food? – **It can reduce nutritional deficiencies and contribute to employment and export revenue in India**
- How many Bio-fortified varieties have been developed by the Indian Council of Agricultural Research (ICAR)? **– More than 79**
- What is the full form of NARI? **- Nutri Sensitive Agricultural Resources and Innovations**

Millets (Future Foods)

- To which family Millet, a cereal grain belongs to? **– Poaceae family**
- What is the environmental benefit of Shree Anna or nutria cereal? – **It consumes little water, has low carbon footprint, and grows in arid conditions**
- The Millets (super food) is rich in? **– Calcium, Iron, Zinc, Protein, and Fiber**
- In which yea, government of India observed the year of millets? – **2018**
- Which year was declared 'International Year of Millets' by the United Nations General Assembly? – **2023**
- Which adjectives often used to describe millets? – **Super grain, super food and wonder grain**
- At which of the Archaeological sites in India, traces of millets have been found? - **Harappa and Mohenjo-daro**
- According to Indian Institute of Millets Research, finger millet is rich in which mineral? **– Calcium**
- In which of the millets, amount of Iron is more than that of wheat and rice? **– Ragi**
- What is the collective term used for various crops with small seeds? **- Coarse grains**
- When was the National Millets Mission launched to promote the production and consumption of millets? **– 2007**
- What is the objective of the scheme 'Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP)- **To showcase improved production and post-harvest technologies in an integrated manner with visual impact to catalyze increased production of millet in the country**

Dream 2047 (July 2023)

World of Tigers

- Which is the largest cat species in the world? **- Tiger (Panthera tigris)**
- What percentage of the world's tigers resides in India? **- More than 70 per cent**
- How many subspecies of tiger are there in the world? **– Nine subspecies**
- Which is the largest tiger species in terms of weight and size ? **- Siberian or Amur Tiger**
- By what name are the tigers of India known? **- Royal Bengal Tiger**
- Which are the other subspecies of tigers in the world? **- Sumatran Tiger, Indochinese Tiger, Malayan Tiger, South China Tiger**
- Which subspecies of tiger has been considered extinct in its natural habitat? **- Caspian, Javan and Bali Tigers**
- In which year Project Tiger was started in India? **– 1st April 1973**

Self-reliant India: Infrastructure

- A study conducted by the World Bank in 2014 found that a 1% increase in infrastructure investment in low-income countries is associated with how much percentage increase in GDP? **- An increase of 1-2%**
- According to a study by the Asian Development Bank, how much percent increase in GDP is possible with an increase in infrastructure stock by 1%? **- 0-15%**
- What is the impact of the investment in infrastructure in the economy? **-Can help control inflation by increasing the supply of goods and services, reducing production costs, and improving efficiency**
- According to the World Bank, which social problem can be reduced by infrastructure development, increased productivity and improved access to basic services? **- Poverty**
- How many trillion dollar infrastructure projects are planned to be developed in the next five years under the National Infrastructure Pipeline (NIP)? **- 1.4 trillion dollars**
- Which sectors are included in the National Infrastructure Pipeline (NIP) infrastructure development project? - **Projects in various sectors including energy, transportation, urban development, and water and sanitation**
- What is the name of the port based infrastructure development program launched in 2015 to promote the development of ports and coastal economic zones? **-Sagarmala program**
- What is the purpose of the Delhi-Mumbai Industrial Corridor (DMIC), a major infrastructure project spread across six states? - **Developing a high-tech industrial zone across the country**
- Which project will connect Mumbai to Navi Mumbai through a 21.8 km long sea bridge? **- Mumbai Trans Harbor Link**
- What is the objective of the Regional Rapid Transit System (RRTS) high-speed rail project? - **Connecting major economic centers in the National Capital Region (NCR)**
- How many high speed corridors have been identified by the RRTS task force? **– 8**
- Whatb is the main objective of the Jal Jeevan Mission is under NIP? - **Providing piped water supply to all households in rural India by 2024**
- What is the purpose of the self-reliant India campaign launched by the Government of India? - **Making India self-reliant in various sectors including infrastructure**
- What is National Investment and Infrastructure Fund (NIIF)? – **An investment vehicle for funding commercially viable greenfield, brownfield and stalled infrastructure projects**
- Which three funds are managed by NIIF? - **Master Fund, Fund of Funds and Strategic Investment Funds**
- How many cities are targeted to be developed under Smart City Mission? – **100**
- Which is the only bridge in India with steel concrete composite truss? **- Bogibeel Bridge in Assam**
- Which bridge is located on the railway line of Udhampur-Srinagar-Baramulla railway project? **- Chenab Bridge**
- Which tunnel is known as Dr. Shyama Prasad Mukherjee Tunnel? **- Chenani-Nashri Highway Tunnel**
- Dr. Shyama Prasad Mukherjee Tunnel is located on which national highway? **- NH-1A**
- What is the length of the Dr. Shyamaprasad Mukherjee Tunnel? **- 9.28 km**
- Which tunnel has been built on Manali-Leh highway in Himachal Pradesh? **- Atal Tunnel**
- Which structure has been established by India in the Antarctic and Arctic regions with the efforts of Ministry of Earth Sciences, Department of Space and Electronics Corporation of India Limited? **- Polar Research Infrastructure**
- What is the location of strategic oil reserves in underground rock caverns in India on the eastern coast? **- Visakhapatnam (Andhra Pradesh)**

Weather Forecast

- What is the total number of weather forecast done by India Meteorological Department (IMD)? **- Four**
- What are the four types of weather forecast? – **1. Short term (12-48 hours), 2. Medium term (3-7 days), 3. Long term (8 days +) and 4. Hazardous/severe weather forecasts**
- What are the different methods used by India Meteorological Department (IMD) to forecast weather conditions? - **1. Satellite Images 2. Doppler Weather Radar: 3. Ground Observation 4. Numerical Weather Prediction (NWP): 5. Ensemble Forecast**
- What are the three main types of satellite images available? - 1**. Visible, 2. Infrared, 3. Water Vapour**
- What are the applications of the Doppler Weather Radar? **- To measure rainfall intensity, wind shear and velocity and locate a storm centre and the direction of a tornado or gust front.**
- What is Numerical weather prediction (NWP)? **A method of weather forecasting that employs a set of equations that describe the flow of fluids**
- The Multi-Model Ensemble (MME), developed by the India Meteorological Department (IMD), can predict the weather for how many days? **- 10 Days**

NEWS NOTES

Person in News	
Person	**Why in news**
Ram Nath Kovind	• The former president of India has been appointed Chairman of the committee on 'One Nation One Election' - constituted by the Central Government.
Tharman Shanmugaratnam	• He recently won Singapore's presidential election. • He joins a long list of Indian-origin leaders who are dominating politics at important world capitals.
Rajiv Gauba	• Cabinet Secretary Rajiv Gauba has been officially granted a one-year extension by the Central government, making him the longest-serving Cabinet Secretary in India's history.
Sachin Tendulkar	• The Election Commission of India has appointed cricketing legend Sachin Tendulkar as a "national icon" of the poll panel to encourage greater voter participation in elections.
Geetika Srivastava	• The Indian High Commission in Islamabad will soon be headed by a woman diplomat, a first since Independence. Geetika Srivastava, will be India's new charge d'affaires in Islamabad.
Adille Sumariwalla	• Adille Sumariwalla has been elected as one of the four vice presidents of World Athletics, the highest post ever held by an Indian in the global track and field governing body.

Appointments	
Person	**Brief Description**
Jaya Verma Sinha	• She became first woman Chairperson of the Railway Board, the top decision-making body for the Ministry of Railways.
NV Ramana	• Former Chief Justice of India (CJI) NV Ramana has been appointed as a member of the prestigious International Mediator Panel of Singapore International Mediation Centre (SIMC).
Neelkanth Mishra	• Neelkanth Mishra has assumes the role of part-time Chairperson of Unique Identification Authority of India (UIDAI). • The Unique Identification Authority of India (UIDAI) consists of a Chairperson, two part-time Members and the Chief Executive Officer (CEO), who is also the Member-Secretary of the Authority.
Justice Prakash Srivastava	• He has been appointed as the new chairman of the National Green Tribunal (NGT).
Sanjay Kumar Agarwal	• He took the charge as the Chairman of the Central Board of Indirect Taxes and Customs (CBIC).
Subhasis Talapatra	• He has been appointed as the 33rd Chief Justice of the Orissa High Court.
Nisha Biswal	• She has been appointed as the Deputy Chief Executive Officer of the US International Development Finance Corporation (DFC).
R Madhavan	• The Ministry of Information and Broadcasting (MIB) has appointed actor R Madhavan as the president of the Film and Television Institute of India (FTII) Society and chairperson of the governing council. • The tenure of former president director Shekhar Kapur ended on 3 March, 2023.

Obituary	
Person	**Brief Description**
Bindeshwar Pathak	• He was the founder of Sulabh International, an India-based social service organization which works to promote human rights, environmental sanitation, waste management and reforms through education. • He also served as the ambassador for the Government of India's Swachh Bharat Mission.
Bikash Sinha	• A recipient of Padma Shri in 2001 and Padma Bhusan in 2010, he was the former director of the Saha Institute of Nuclear Physics and Variable Energy Cyclotron Centre. • He led the Indian team for the first time to participate in the experiments at the European Organization for Nuclear Research in Geneva.
Dr. John Warnock	• Adobe co-founder Dr. John Warnock passed away at the age of 82. • He founded the revolutionary software company Adobe with his partner, late Dr. Charles Geschke, in 1982.
Mohammed Habib	• He was former India captain and legendary footballer. • He represented India in many international tournaments from 1965-76.
Piloo Reporter	• He was a former Indian umpire who was among the first neutral umpires to officiate in Test cricket. • Reporter officiated in 14 Tests and 22 one-day internationals including in the 1992 World Cup organised in Australia and New Zealand.
N Vittal	• He was former Telecom Secretary and Central Vigilance Commissioner (CVC) who had sown the seeds for the growth of the information technology sector four decades ago. • He initiated the process of liberalisation in the telecom sector and played a major role in getting the National Telecom Policy 1994 approved. • He initiated policies for boosting software, setting up software technology parks and strategic alliance with the industry. This eventually led to the formation of the Software Technology Parks of India (STPI). • He was a Padma Bhushan in 2012.
N Valarmathi	• She was an ISRO scientist and the voice behind the Indian Space and Research Organisation's rocket countdown launches including Chandrayaan-3. • She was the first person to receive the Abdul Kalam Award, instituted in 2015 by the Government of Tamil Nadu.
C. R. Rao	• Calyampudi Radhakrishnan Rao was among the world's most eminent statisticians. • Dr. Rao pioneered several fundamental statistical concepts such as the Cramer–Rao inequality and Rao–Blackwellization, concepts. • He was awarded India's highest honours the Padma Bhushan and Padma Vibhushan in 1969 and 2001, respectively.
V. S. R. Arunachalam	• He was former Scientific Advisor to Defence Minister and former Chairman of Defence Research Development Organisation. • A recipient of the Padma Vibhushan, Dr. Arunachalam was the Chief Architect of many strategic programs like the Integrated Missiles Development Programme which included Agni, Prithvi, Akash and Nag, Light Combat Aircraft now called Tejas and Airborne Early Warning and Control System.
Heath Streak	• He was former captain of Zimbabwe Cricket team.

Places in News	
Place	**Why in News**
Mediterranean Sea	• Recently, a boat carrying migrants sank in Mediterranean Sea. • Geographical Features • Intercontinental sea that stretches from Atlantic Ocean (west) to Asia (east) and separates Europe from Africa. • Bordering Countries include Europe (West to East): Spain, France, Monaco, Italy, Malta, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece and Cyprus. • **Asia (north to south):** Turkey, Syria, Lebanon and Israel. • **Africa (east to west):** Egypt, Libya, Tunisia, Algeria and Morocco. • **Bordering Cities:** Athens, Haifa, Tel Aviv, Beirut, Venice, Rome. • Connected to Atlantic Ocean by Strait of Gibraltar and Red Sea by Suez Canal. • Sea of Marmara (part of Mediterranean Sea,) connected to Black Sea via Bosphorus Strait, and Aegean Sea via Dardanelles Strait. • **Climate:** Wet winters and hot, dry summers • **Largest Island:** Sicily • **Marginal Seas within Mediterranean:** Aegean Sea, Ionian Sea, Adriatic Sea, Sea of Marmara
Ethiopia (Capital: Addis Ababa)	• Recently, Ethiopia's government has declared a state of emergency in its second-largest region, Amhara. • Political Boundaries • Landlocked country on the Horn of Africa. • Bounded by Eritrea (north), Djibouti (northeast), Somalia (east), Kenya (south), and South Sudan and Sudan (west). • Geographical Features • **Highest Point:** Mount Ras Dejen • **Major Rivers:** Blue Nile, Omo, Awash, etc. • **Major Lakes:** Lake Tana (Source of Blue Nile), Lake Ziway
Niger (Capital: Niamey)	• Recently, India's Ministry of External Affairs (MEA) urged Indian nationals to leave Niger, following a military coup that deposed the democratically elected President. • Political Boundaries • It is a landlocked sub-Saharan country in western Africa. • **Bordering Countries:** It is bounded on the northwest by Algeria, on the northeast by Libya, on the east by Chad, on the south by Nigeria and Benin, and on the west by Burkina Faso and Mali. • Geographical Features • Niger consists of mostly desert terrain and sand dunes. More than 80% of its land is part of the Sahara Desert and Tenere Desert. • **Major River:** Niger • **Lowest Point:** Niger River • **Highest Point:** Mont Idoukal-n-Taghes
Red Sea	• Recently, US have deployed new forces and warships to Red Sea. • **Geographical Features** • It is an inlet of Indian Ocean between Africa and Asia. • Lies in a fault depression that separates two great blocks of Earth's crust—Arabia and North Africa. • Boundary countries are Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti. • Connected to Indian Ocean in south through Bab el Mandeb Strait and Gulf of Aden. • Occupies a part of Great Rift Valley (Afro-Arabian Rift Valley). • **Lowest Point:** Niger River, with an elevation of 200 metres (656 ft). • **Highest Point:** Mont Idoukal-n-Taghes

Military Exercises

Name of Exercise	Brief Description
BRIGHT STAR-23	• BRIGHT STAR- 23 is a multinational tri-services joint military exercise that will be led by US CENTCOM and the Egyptian Army spanning from August 27 to September 16, 2023. • This year 34 countries will participate in Exercise BRIGHT STAR-23. It will be the largest-ever joint military exercise in West Asia and North Africa region. • This is for the first time that the Indian Armed Force with 549 personnel are participating in the exercise.
Tarang Shakti	• The Indian Air Force (IAF) is gearing up to host a colossal multilateral military exercise, 'which was originally slated for October, 2023 but has been rescheduled to the middle of 2024. • It is set to draw the involvement of some prominent air forces, including those of France, the United Kingdom, Australia, the United States, and Japan.
MALABAR 2023	• India, Japan, the United States and Australia carried out 27th edition of MALABAR naval exercise from 11-21 August 2023 on the east coast of Australia; Sydney, instead of the west coast. • Traditionally, the exercise has been held in the Indian Ocean, this is the first MALABAR to be undertaken in the Pacific Ocean. • It is also the first time that the Royal Australian Navy (RAN) has hosted the mega naval war game. • MALABAR series of maritime exercise commenced in 1992 as a bilateral exercise between Indian Navy and US Navy and has grown in stature over the years to include four prominent navies in the Indo-Pacific Region.

Awards

Name of the Award	Awardee/Brief Description
'The Grand Cross of the Order of Honour'	• Prime Minister Narendra Modi has become the first Foreign Head of the Government to be awarded 'The Grand Cross of the Order of Honour' by the Greek government. • This recognition was given during Prime Minister Modi's official visit to Greece.
Ramon Magsaysay Award 2023	• Surgical oncologist R Ravi Kannan was named as one of the recipients of the Ramon Magsaysay Award for 2023. • Kannan, who hails from Chennai, won the award for "revolutionising the treatment of cancer in Assam through his people-centered and pro-poor programs".
National Award For E-Governance 2023	• SVAMITVA (Survey of Villages Abadi and Mapping with Improvised Technology in Village Areas) Scheme of Ministry of Panchayati Raj has been conferred with the prestigious National Award for e-Governance 2023 (Gold) for Application of Emerging Technologies for Providing Citizen Centric Services at the 26th National Conference on e-Governance (NCeG) organized by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India on 25th August 2023 in Indore, Madhya Pradesh.
Udyog Ratna Award	• Eminent industrialist Ratan Tata was conferred with inaugural Udyog Ratna Award instituted by the Maharashtra government.

Important Days/Weeks/Month

Date	Day	Theme
1-7 August	World Breastfeeding Week	"Let's make breastfeeding and work, work!"
9 August	International Day of the World's Indigenous Peoples	"Indigenous Youth as Agents of Change for Self-determination"
12 August	International Youth Day	"Green Skills for Youth: Towards a Sustainable World"
20-24 August	World Water Week	"Seeds of Change: Innovative Solutions for a Water-Wise World"
29 August	National Sports Day	"Sports are an enabler to an inclusive and fit society"

Info Bytes

- Who has been re-elected for a second five-year term as the President of Zimbabwe?***-Emmerson Mnangagwa***
- Who is chairing the committee on 'One Nation One Election' constituted by the Central Government? ***- Ram Nath Kovind (Former President)***
- In which state is Unit-3 of the country's largest indigenous 700 MW Electric Kakrapar Nuclear Power Plant operating at full capacity? ***- Gujarat***
- Which medal did Neeraj Chopra win in the Zurich Diamond League Championship 2023? ***- Silver***
- In which country, the Joint Military Exercise Bright Star-23 was conducted from 31 August to 14 September 2023? ***- Egypt***
- With whom will India collaborate to establish a climate change and health hub in Delhi? ***- Asian Development Bank***
- Which country has won the Asia Cup title the most times in cricket? ***- India***
- Who is appointed as the new chairman of Finance Industry Development Council? ***- Umesh Revankar***
- Which Indian warship is the seventh and last stealth frigate of Project 17A? ***- Mahendragiri***
- Who was crowned Miss Earth India 2023? ***- Priyan Sen***
- From which country did FIFA recently lift the ban on the football federation? ***- Sri Lanka***
- When does India annually celebrate National Sports Day? ***- 29th August***
- Who has taken over as Principal Director General of All India Radio and NSD? ***- Dr. Vasudha Gupta***
- In which city will the Miss World 2023 event take place? ***- Kashmir***
- Who is the first woman chairperson and chief executive officer of the Railway Board? ***- Jaya Verma Sinha***
- Which nation recently hosted the inaugural 'Karnataka Cultural Festival'? ***- Sri Lanka***
- Which bank introduced the 'Infinity Savings Account'? **- Axis Bank**
- What is the length of the longest flyover inaugurated in Assam? **- 2.63 km.**
- Whom did Rajya Sabha Chairman Jagdeep Dhankhar nominate as a member of the Standing Committee on Home Affairs? ***- P. Chidambaram***
- On what date is World Sanskrit Day celebrated each year? ***- 31st August***
- With which state has Tata Power Renewable Energy Limited recently partnered for a 28.12 MW green energy project? ***- Maharashtra***
- Which ministry will organise the inaugural Global INDIAai 2023 conference? ***- Ministry of Electronics and Information Technology (MeitY)***
- Which state is associated with the increased funding of Chief Minister Kanya Sumangala Yojana from Rs 15,000 to Rs 25,000 from the financial year 2024-2025.? ***-Uttar Pradesh***
- Who has acquired the right of title sponsorship of domestic matches of the Indian cricket team? ***- IDFC First Bank***
- Who has become the second Indian wrestler to win a gold medal in the U20 World Wrestling Championship? ***- Priya Malik***
- Who has been appointed as the first woman field director of Kaziranga National Park? ***- Dr. Sonali Ghosh***
- Who has been appointed by BPCL as its brand ambassador? ***- Rahul Dravid***
- Who has emerged as India and Asia's highest-earning Instagram personality and ranked 14th globally? ***- Virat Kohli***
- Which Indian player won the bronze medal in the World Badminton Championship 2023?***- H.S. Prannoy***
- The 15th summit of the BRICS group was organized under the chairmanship of which country? ***- South Africa***
- Who has been appointed as the new Managing Director of Life Insurance Corporation of India? ***- R Doraiswamy***
- Who has been selected by the Election Commission of India as a National Icon? ***- Sachin Tendulkar***
- Who has been appointed as the new Chief Justice of Nepal? ***- Bishombhar Prasad Shrestha***
- Who was honored with the first 'Udyog Ratna' award instituted by the Government of Maharashtra? ***- Ratan Tata***
- Who has been appointed as the new chairman of the National Green Tribunal?***- Justice Prakash Srivastava***
- In which city India's first 3D printed post office building has been inaugurated? ***- Bengaluru***
- Who has broken Germany's Gerd Muller's 42-year-old record in football – highest goals through header? ***- Cristiano Ronaldo***