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Message



An officer with a right mindset is an officer that a nation aspires for. A right mindset doesn't necessarily comprise unlimited jargon of knowledge rather a right amount of knowledge and its appropriate execution. Especially, when it comes to UPSC and State PSCs preparation, the crux is not to accumulate the knowledge but its effective implementation and utilization in tackling any situation. The situation here can be anything from UPSC CSE Prelims to the major issues that need to be addressed. The journey is hard but it is worth.

Perfect 7 has been part of many UPSC and State PSCs aspirants in their journey of becoming well reputed officers serving nationally and internationally. The magazine itself had gone through constant ebb and flows of change and improvements. Now, that the magazine is in its monthly era, I hope it becomes your perfect preparation partner and guides you through this ever learning endeavor of Civil Services Preparation.

With Best wishes.

Vinay Singh
Founder
Dhyeya IAS

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Indian Society & Art and Culture

ASER 2024: A Comprehensive Analysis of India's Foundational Learning Landscape

Education is often described as the foundation of a nation's progress, and for a country as diverse and populous as India, ensuring quality education for all remains a formidable challenge. The Annual Status of Education Report (ASER) 2024, released by the Pratham Education Foundation on January 28, provides crucial insights into the state of learning in rural India. Conducted across 17,997 villages in 605 districts, covering 649,491 children, the survey highlights progress in Foundational Literacy And Numeracy (FLN), regional disparities, and the ongoing digital divide in education.

- ❖ While pandemic-induced learning losses are showing signs of reversal, deeper challenges persist, particularly in mathematical proficiency, gender-based learning gaps, and digital accessibility. Government schools have shown remarkable improvement, surpassing private schools in learning recovery, thanks to policy-driven initiatives like the National Education Policy (NEP) 2020 and the NIPUN Bharat Mission. However, issues such as declining government school enrollment, gender disparity in digital literacy, and overall learning deficiencies indicate that much work remains to be done.

About ASER:

- ❖ The Annual Status of Education Report (ASER) is a nationwide, citizen-led household survey that provides a comprehensive assessment of schooling and learning outcomes in rural India.
- ❖ The word 'ASER' means 'impact' in Hindi.
- ❖ It captures data from both school-going and out-of-school children aged 3 to 16 years while

assessing reading and arithmetic skills for children aged 5 to 16 years.

- ❖ The ASER Centre, facilitated by the Pratham network, coordinates the survey.
- ❖ First conducted in 2005, ASER was conducted annually for ten years until 2014, after which it shifted to an alternate-year model:
 - » Basic ASER Survey (every alternate year): Focused on foundational learning.
 - » Gap Years: Focuses on specific themes or age groups (e.g., ASER 2017 focused on youth aged 14-18; ASER 2019 assessed early childhood learning).
 - » ASER 2024 returned to its nationwide 'basic' survey format, covering most rural districts.

Key Findings of ASER 2024:

- ❖ **Post-Pandemic Learning Recovery:** One of the most encouraging takeaways from ASER 2024 is the recovery from COVID-19-induced learning losses. During the pandemic, prolonged school closures resulted in significant setbacks in foundational literacy and numeracy (FLN), particularly in younger students. However, the 2024 report suggests that learning levels in rural India have not only recovered but, in some cases, exceeded pre-pandemic levels.
 - » The proportion of Class 3 children in government schools who can read a Class 2-level text improved from 16.3% in 2022 to 23.4% in 2024—the highest level recorded since ASER's inception in 2005.
 - » The share of Class 5 students who can read at Class 2 level rose from 38.5% in 2022 to

- 44.8% in 2024, approaching the 2018 level (44.2%).
- » In Class 8, reading ability saw marginal improvement, increasing from 66.2% in 2022 to 67.5% in 2024.
 - ❖ In arithmetic, improvements are also visible:
 - » The proportion of Class 3 students who could solve a subtraction problem rose from 25.9% in 2022 to 33.7% in 2024.
 - » The proportion of Class 5 students who could solve a division problem improved from 25.6% to 30.7%.
 - ❖ While reading skills and arithmetic have improved, learning gaps persist, particularly in numeracy skills across all grades.

Assessing reading levels

The table shows the percentage of children in Classes 3 and 5 able to read a Class 2 text in government schools

Class 3: % children reading at Class 2 level

2018	20.9
2022	16.3
2024	23.4

Class 5: % reading at Class 2 level

2018	44.2
2022	38.5
2024	44.8



Government Schools vs Private Schools:

- ❖ A noteworthy trend in ASER 2024 is the stronger learning recovery in government schools compared to private schools. Historically, private schools have outperformed government schools, but the latest findings reveal a turnaround:
 - » In Class 3, the proportion of government school students who can read a Class 2-level text rose by 7.1 percentage points (16.3% in 2022 to 23.4% in 2024). However, in private schools, the increase was only 1.7 percentage points (41.8% to 43.5%).
 - » In Class 5, government school students improved from 38.5% in 2022 to 44.8% in 2024 (a 6.3 percentage point gain), while private school students saw only a 2.5 percentage point rise (56.8% to 59.3%).
- ❖ A similar trend is observed in arithmetic proficiency, where government school students outpaced their private school counterparts in improvement rates.
- ❖ This reversal is largely attributed to NEP 2020 and the NIPUN Bharat Mission, which prioritize foundational learning, along with teacher training programs and structured school-readiness initiatives.

Gender Disparities in Learning and Digital Literacy:

- ❖ ASER 2024 highlights gender-based learning gaps, particularly in mathematics and digital literacy.
 - » In Class 3, 29.4% of boys could solve a subtraction problem compared to 25.8% of girls.
 - » In Class 5, 33.1% of boys could correctly solve a division problem, whereas only 27.9% of girls could do so.
 - » The gap persists through Class 8, where 47.2% of boys demonstrate arithmetic proficiency compared to 44.1% of girls.
- ❖ These disparities reflect deep-rooted societal biases that discourage girls from pursuing numeracy-related skills. Many rural households focus more on literacy for girls, while mathematical education takes a backseat, limiting STEM (Science, Technology, Engineering, Mathematics) opportunities for girls later in life.
- ❖ In digital literacy, boys have greater smartphone access and higher digital awareness than girls:
 - » 36.2% of boys own a personal smartphone, compared to 26.9% of girls.
 - » 62% of boys know how to use digital safety features, compared to 48% of girls.
- ❖ Bridging this gap requires targeted interventions such as gender-sensitive curricula, community engagement programs, and inclusive digital education initiatives.

Declining Enrollment in Government Schools:

- ❖ While government schools have seen improvement in learning outcomes, their overall enrollment is declining. The proportion of children in government schools fell from 72.9% in 2022 to 66.8% in 2024. Possible reasons include:

- » **Perception of Private Schools:** Parents believe private schools offer better discipline, stronger English instruction, and greater accountability.
- » **Teacher Shortages:** Many government schools lack subject-specific teachers, especially in middle school grades.
- » **Parental Economic Recovery:** As incomes stabilize post-pandemic, families that moved children to government schools due to financial constraints are returning to private schools.
- ❖ To reverse this trend, government schools need to further enhance quality, ensure adequate staffing, and strengthen infrastructure.

The Digital Divide in Education:

- ❖ Despite higher smartphone penetration in rural India, digital learning remains limited.
 - » 89% of teenagers (14-16 years) report having smartphones at home, but only 57% use them for education.
 - » 31.4% personally own a smartphone, meaning most depend on shared family devices, limiting digital learning access.
 - » Urban-rural connectivity gaps and poor infrastructure restrict digital education

effectiveness.

- ❖ Bridging the digital divide requires better infrastructure, localized ed-tech solutions, and increased awareness on productive digital learning habits.

Conclusion & Way Forward:

- ❖ ASER 2024 presents a story of recovery and resilience, but challenges remain. NEP 2020 and the NIPUN Bharat Mission have positively impacted government schools, yet gaps in numeracy, gender disparity, and digital access need urgent attention.

Recommendations:

- » Strengthening FLN programs with targeted mathematics interventions.
- » Gender-inclusive learning strategies for STEM education.
- » Teacher training and recruitment to improve quality education.
- » Digital infrastructure development in rural areas.
- ❖ With consistent policy implementation and regional interventions, India can move closer to achieving universal, high-quality education for all.

Comprehensive Development and Healthcare for Tribal Communities: Addressing Challenges and Advancing Solutions

India's tribal communities, known as "Adivasis," represent one of the most ancient and integral sections of Indian society. With unique traditions, cultures, and lifestyles, they form a significant part of the country's demographic fabric. Despite their rich heritage, tribal communities face a multitude of challenges, including socio-economic disparities, limited healthcare access, and threats to their cultural identity. The National Tribal Health Conclave 2025, held at Bharat Mandapam, New Delhi, served as a vital platform to address these issues, focusing on holistic healthcare solutions under the Dharti Aaba Janjatiya Gram Utkarsh Abhiyan.

Understanding Tribal Communities in India

- ❖ Tribal communities in India have a distinct socio-cultural identity, marked by their isolation from mainstream society and unique customs and traditions. They are considered one of the oldest ethnological groups and are internationally recognized as "indigenous," as classified by the International Labour Organization.

Key Facts about Tribes in India

- ❖ **Population and Distribution:**
 - » India has the second-largest tribal population globally, comprising nearly 100 million people

or approximately 8.9% of the country's total population (Census 2011).

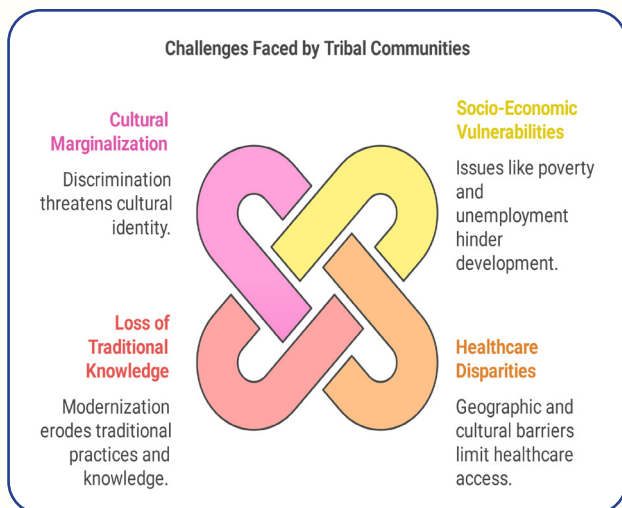
- » While the northeastern states host tribes with distinct ethnicity, the central and southern regions are home to over 80% of the tribal population.
- ❖ **Cultural and Historical Significance:**
 - » Tribes have been an integral part of Indian society since ancient times, with mentions in the Ramayana and Mahabharata.
 - » Tribal heroes like Gond Maharani Veer Durgavati, Rani Kamalapati, and the Bhils played significant roles in India's freedom struggle.
 - » Tribal movements such as the Khasi-Garo, Mizo, and Kol movements are vital chapters in India's history.
- ❖ **Government Recognition:**
 - » To honor the contribution of tribal communities, November 15 was declared Janjatiya Gaurav Divas in 2021, commemorating the birth anniversary of Bhagwan Birsa Munda, a tribal leader and freedom fighter.

- » Tribal areas often lack basic infrastructure and suffer from inadequate economic opportunities.
- ❖ **Healthcare Disparities:**
 - » Geographic isolation and cultural barriers limit access to quality healthcare services.
 - » Diseases like sickle cell anemia are prevalent, and addressing such genetic conditions requires specialized interventions.
- ❖ **Loss of Traditional Knowledge and Resources:**
 - » Rapid modernization and exploitation of natural resources have led to the erosion of traditional knowledge and practices.
 - » Many tribes struggle to protect their land and resources due to limited representation in decision-making processes.
- ❖ **Cultural Marginalization:**
 - » Discrimination and exclusion from mainstream society threaten the preservation of their unique cultural identity.

Government Initiatives for Tribal Development

The Government of India has launched several initiatives to address the socio-economic and healthcare challenges faced by tribal communities:

- ❖ **Healthcare and Welfare Programs:**
 - » **National Tribal Health Conclave 2025:** Organized by MoTA and MoH&FW, the conclave focused on identifying priority areas for policy intervention and creating sustainable healthcare solutions for tribal regions.
 - » **National Sickle Cell Elimination Mission:** Launched by Prime Minister Narendra Modi, this mission aims to eradicate sickle cell anemia by 2047.
 - » **Bhagwan Birsa Munda Chair of Tribal Health and Haematology:** Established at AIIMS Delhi, this initiative promotes research and data collection on tribal health issues.
 - » **Centres of Competence (CoC):** Fifteen CoCs have been established across 14 states to provide advanced diagnosis and treatment for sickle cell anemia.
- ❖ **Economic and Infrastructure Development:**
 - » **TRIFED (Tribal Cooperative Marketing Development Federation of India Limited):**



Challenges Faced by Tribal Communities

Despite their rich heritage, tribal communities face several challenges that hinder their development:

- ❖ **Socio-Economic Vulnerabilities:**
 - » Poverty, unemployment, and limited access to education and healthcare remain widespread.

Established in 1987 under the Ministry of Tribal Affairs, TRIFED supports tribal communities by promoting their products and enhancing their economic opportunities.

- » **Pradhan Mantri Adi Adarsh Gram Yojana (PMAAGY):** This scheme focuses on providing basic infrastructure in villages with a significant tribal population.
- » **Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN):** Launched in 2023, this initiative aims to improve the socio-economic conditions of Particularly Vulnerable Tribal Groups (PVTGs).
- ❖ **Constitutional Provisions** The Indian Constitution includes special provisions to safeguard tribal communities:
 - » Article 275(1) provides funds to states for tribal welfare and development.
 - » The Fifth and Sixth Schedules of the Constitution recognize and protect tribal land rights and self-governance.

National Tribal Health Conclave 2025: Key Outcomes

The National Tribal Health Conclave 2025 brought together stakeholders from various sectors, including health, social justice, education, and non-governmental organizations. The discussions centered on:

- ❖ **Strengthening Healthcare Systems:** Telemedicine, mobile medical units, and capacity building were identified as key strategies to improve healthcare access in remote tribal areas.
- ❖ **Integrating Indigenous Knowledge:** Efforts were made to incorporate traditional healing practices into mainstream healthcare systems.
- ❖ **Nutrition and Adolescent Health:** The conclave emphasized combating malnutrition and improving reproductive health through culturally appropriate interventions.
- ❖ **Addressing Disease-Specific Challenges:** Targeted interventions for sickle cell disease, addiction, and mental health were prioritized.
- ❖ **Cultural Sensitivity in Healthcare Delivery:** A focus on balancing traditional lifestyles with modern health outcomes was underscored.

Way Forward: Sustainable Development for Tribal Communities

To ensure the holistic development of tribal communities, the following measures must be adopted:

- ❖ **Policy Reforms:** Government policies should address the unique challenges faced by tribal communities, including healthcare access, economic opportunities, and cultural preservation.
- ❖ **Community Engagement:** Tribal communities should be involved in decision-making processes related to their lands, resources, and development.
- ❖ **Research and Innovation:** Action-oriented research on tribal health and innovative healthcare delivery models are essential for addressing their specific needs.
- ❖ **Education and Skill Development:** Enhancing access to education and vocational training can empower tribal youth and improve their socio-economic status.
- ❖ **Preservation of Cultural Heritage:** Efforts should be made to protect and promote the rich cultural traditions of tribal communities, ensuring their integration into the national mainstream without compromising their identity.

Conclusion:

Tribal communities are an integral part of India's cultural and demographic diversity. However, their socio-economic and healthcare challenges require urgent attention. Initiatives like the National Tribal Health Conclave 2025 and programs under the Dharti Aaba Janjatiya Gram Utkarsh Abhiyan underscore the government's commitment to empowering these communities. By fostering collaboration, innovation, and inclusivity, India can ensure sustainable development for its tribal population while preserving their unique cultural heritage. Through focused policies and community engagement, tribal regions can achieve equitable growth and contribute meaningfully to the nation's progress.

India's Performance in Global Indices: Challenges & Opportunities in aligning Education, Markets and Employment

India's performance in global indices often highlights the strengths and challenges inherent in its educational and economic systems. A recent example is India's position in the QS World Future Skills Index 2025, where the country ranks second globally for its preparedness to meet the demands of the future job market, just behind the United States. This achievement underscores India's growing capacity to address emerging needs in fields such as Artificial Intelligence (AI) and green skills.

However, the index also reveals significant gaps in other critical areas, especially workforce readiness and economic transformation, offering insights into the challenges India faces in aligning its education system with the rapidly evolving job market.

Key Indicators and India's Rankings:

- ❖ The QS World Future Skills Index evaluates countries based on four major indicators:
 - » Skills Fit
 - » Future of Work
 - » Academic Readiness
 - » Economic Transformation.
- ❖ These parameters assess how well nations are equipped to meet the demands of a global workforce increasingly influenced by technology and sustainability.
- ❖ **Future of Work (Ranked 2nd):** India's ranking in the "Future of Work" category reflects its strong emphasis on technological readiness, particularly in digital proficiency, AI capabilities, and green technologies. The high ranking indicates India's progress in building a workforce aligned with emerging fields. The country's growing tech industry, focus on sustainability, and increasing job postings in AI and related sectors contribute significantly to this result. While India excels in these areas, there is still much to be done in addressing broader workforce challenges.
- ❖ **Skills Fit (Ranked 30th):** India ranks 30th in "Skills Fit," which measures how well graduates' skills align with employer demands. This reflects a significant gap in India's workforce, as many

graduates lack the specialized skills that employers require. A key reason for this shortfall is the inability of India's higher education system to keep pace with the rapidly changing job market. As industries evolve and new technologies emerge, the educational system struggles to equip students with the skills that are in high demand.

- ❖ **Academic Readiness (Ranked 26th):** India's performance in "Academic Readiness" reveals that while its institutions show promise, they are not fully prepared to produce graduates with the necessary skills for future jobs. Although India's higher education system produces a large number of graduates, there is a critical need to integrate skills such as creativity, problem-solving, and entrepreneurial thinking into curricula. This would ensure that students are better prepared for the demands of a fast-changing job market.
- ❖ **Economic Transformation (Ranked 40th):** India ranks 40th in "Economic Transformation," signaling challenges in adapting to future growth and innovation paradigms. While the country performs well in terms of economic capacity, it struggles in fostering future-oriented innovation and sustainability. India lags in supporting industries focused on green technologies and sustainable practices. To improve in this area, India needs to increase investments in innovation and build infrastructure that supports sustainable growth.

Challenges in Aligning Education with Job Market Demands

- ❖ **Workforce Gaps:** A critical challenge India faces is the gap in workforce skills. Despite a large number of skilled workers, the existing workforce is ill-prepared to meet the needs of industries undergoing rapid transformation. Employers frequently report difficulty in finding candidates with the necessary skills, particularly in areas such as entrepreneurship and innovation. The increasing pace of digital transformation, automation, and AI requires workers to adapt

more quickly, a task that the current workforce is not fully prepared for.

- ❖ **Higher Education Limitations:** India's higher education system struggles to align its curricula with the evolving needs of the job market. While India has a significant number of universities and institutions, their curricula often fail to integrate essential real-world skills like creativity, problem-solving, and entrepreneurial thinking. These skills are crucial for preparing graduates for industries that are increasingly focused on digitalization, AI, and sustainability. Without these competencies, graduates may find themselves unprepared for the challenges of a rapidly changing job market.
- ❖ **Sustainability and Innovation:** India's lower performance in the "Economic Transformation" category highlights its struggles with fostering sustainability and innovation. Although India's economic capacity is strong, it falls short in supporting green technologies and sustainable practices in industries. Compared to other regions, such as the G7 and Asia-Pacific countries, India lags in critical sub-indicators such as innovation and investment in sustainable technologies. To ensure long-term economic growth, India must shift toward industries that align with sustainability and green technologies.
- ❖ **Policy and Lifelong Learning:** As technological advancements and automation reshape industries, the need for lifelong learning and continuous reskilling has never been more urgent. The report emphasizes the importance of policies that promote reskilling and upskilling for the workforce. These initiatives will ensure workers remain competitive in an evolving job market. Given the pace of change, India must implement robust reskilling programs to ensure workers' skills are aligned with the demands of the future.

Recommendations to Bridge the Gaps

- ❖ **Curriculum Reform:** To address the "Skills Fit" gap, universities must prioritize embedding essential future skills such as problem-solving, creativity, and entrepreneurial thinking into their curricula. Educational institutions should collaborate more with industry to ensure that academic programs align with market demands. By doing so, they will better equip graduates to meet the expectations of employers, particularly in emerging fields like AI and green technologies.

- ❖ **Focus on Sustainability:** To improve its position in economic transformation, India should invest in future-oriented innovation and sustainability. This includes fostering green technologies and creating infrastructure that supports sustainable industrial growth. Encouraging the development of industries focused on sustainability will position India as a global leader in these sectors.
- ❖ **Lifelong Learning Initiatives:** Policymakers and educational institutions must focus on implementing lifelong learning and reskilling programs. These initiatives will help workers continuously upgrade their skills to meet the evolving demands of the job market. As industries change and new technologies emerge, continuous learning opportunities will ensure workers remain competitive and adaptable.
- ❖ **Industry Collaboration:** Stronger collaboration between academia and industry is essential to address the skill gaps and ensure that graduates meet employer expectations. Industry partnerships can provide valuable insights into the specific skills required in the job market, helping educational institutions design curricula that are more aligned with current industry needs. These collaborations can also facilitate innovation and research, further bridging the gap between education and employment.

Conclusion:

India's performance in the QS World Future Skills Index 2025 highlights the country's potential as a leader in future-oriented skills, particularly in the fields of technology and sustainability. However, challenges in aligning education with employer needs, fostering innovation, and addressing sustainability must be addressed to capitalize on this potential. By reforming higher education, investing in innovation, and promoting lifelong learning, India can strengthen its position as a "future skills contender" and move closer to becoming a global leader in future skills. Through these efforts, India can overcome its current challenges and build a workforce ready for the demands of the rapidly changing global economy.

Short Issues

Study on Mental Health of Adolescents

Why in News:

A recent report by Sapien Labs, titled The Youth Mind: Rising Aggression and Anger, has shed light on the alarming connection between smartphone use and mental health issues in adolescents. Conducted in 2024, the survey examined the mental well-being of over 10,000 adolescents aged 13-17 across India and the United States, revealing a concerning trend linked to early smartphone initiation.

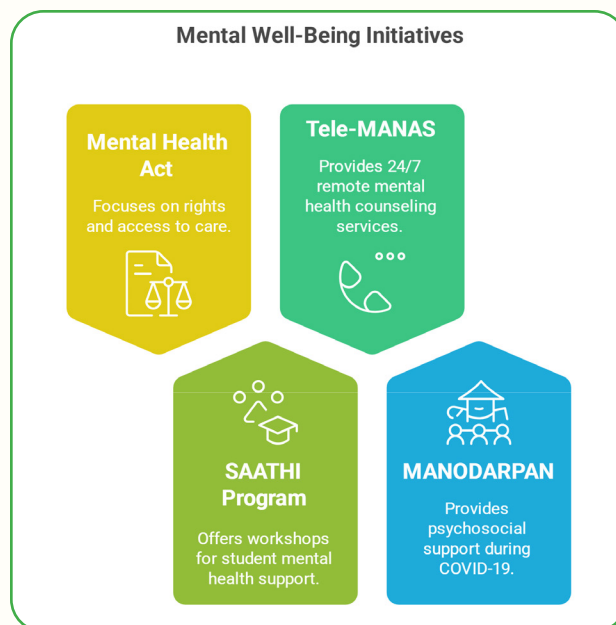
Key findings of the Survey:

- The report documented the responses of Internet-enabled adolescents in both India and the United States, highlighting a rise in negative mental health symptoms, particularly aggression, anger, irritability, and even hallucinations.
- A key finding from the report is that earlier exposure to smartphones correlates with a greater decline in mental well-being, especially among adolescents who began using smartphones at a younger age.
- The report suggests that the introduction of smartphones around 2008 coincided with the rise in mental health issues among younger generations.
- This shift has seen a transformation in the nature of mental health challenges, with more adolescents reporting feelings of detachment from reality, unwanted intrusive thoughts, and an increasing sense of isolation.

Comparison between the U.S. and India:

- Interestingly, the study found that while both U.S. and Indian adolescents are affected by the rise in smartphone usage, the mental health decline is more pronounced in U.S. teens.
- The deterioration in mental health is not as steep in India, especially among males.
- For females in India, however, there was a notable decline in overall mental well-being, though it was slower compared to their U.S. counterparts.
- Adolescent females in India, who start using smartphones at a younger age, are more likely to experience long-term sleep and health issues. In contrast, Indian males exhibited less consistent deterioration in mental health, with some areas

improving.



Mental Well-Being Initiatives for Adolescents

- » **Mental Health Care Act 2017:** This act focuses on protecting the rights of individuals with mental illness, ensuring access to mental health care and treatment.
- » **SAATHI Program:** The Central Board of Secondary Education (CBSE) introduced the SAATHI Program, which offers workshops and online sessions to support mental health among students.
- » **Tele-MANAS:** A 24/7 tele-mental health service offering counseling, psychotherapy, and referrals in multiple languages, helping individuals access mental health support remotely.
- » **MANODARPAN:** Launched under the Atmanirbhar Bharat Abhiyan, this initiative by the Ministry of Education provides psychosocial support to students, teachers, and families, especially during the COVID-19 pandemic.
- Globally, several initiatives also focus on adolescent mental health. The Helping Adolescents Thrive (HAT) Initiative, a joint WHO-UNICEF effort, works to strengthen policies and programs for adolescent mental health. The Global Coalition for Youth Mental Health, launched by UNICEF in 2022,

tackles the increasing mental health challenges among youth. Despite these efforts, only 2.1% of government health expenditure globally is allocated to mental health.

Conclusion:

This study highlights the critical need to monitor and address the mental health of adolescents in the digital age. With smartphones becoming integral to daily life, understanding their impact on mental well-being is essential for parents, educators, and policymakers alike. As the debate continues, it remains clear that early intervention, including regulated smartphone use, could play a crucial role in safeguarding the mental health of future generations.

10th Anniversary of the Beti Bachao Beti Padhao Scheme

Why in News:

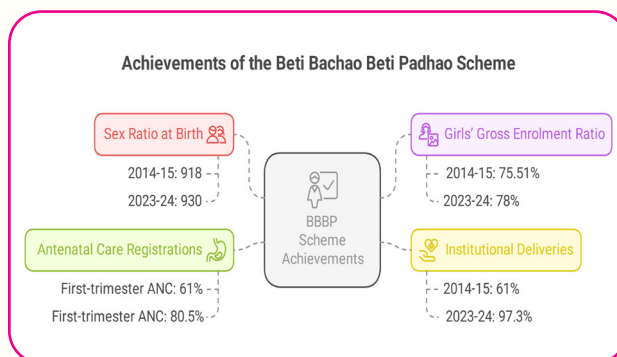
The Ministry of Women and Child Development is celebrating the 10th anniversary of the Beti Bachao Beti Padhao (BBBP) scheme, commemorating a decade of efforts dedicated to protecting, educating, and empowering the girl child in India.

About the Scheme:

- Launched on January 22, 2015, by Prime Minister Narendra Modi in Panipat, Haryana, the BBBP scheme was designed to tackle the declining Child Sex Ratio (CSR), prevent gender-biased sex-selective practices, and promote the survival, protection, and education of the girl child.

Key Objectives:

- The BBBP scheme is guided by the following primary objectives:
 - Improve the Sex Ratio at Birth (SRB) by at least two points annually.
 - Sustain institutional deliveries at 95% or higher.
 - Increase first trimester antenatal care (ANC) registrations by 1% per year.
 - Promote the enrollment and retention of girls in secondary education and skill development programs.
 - Enhance awareness about safe Menstrual Hygiene Management (MHM).
 - Reduce dropout rates among girls at secondary and higher secondary levels.



Key Achievements:

Over the past decade, the BBBP scheme has led to significant progress across multiple fronts:

- Sex Ratio at Birth (SRB):** Improved from 918 in 2014-15 to 930 in 2023-24.
- Girls' Gross Enrolment Ratio (GER) at Secondary Level:** Increased from 75.51% in 2014-15 to 78% in 2023-24.
- Institutional Deliveries:** Increased from 61% to 97.3%, reflecting better healthcare access for women.
- Antenatal Care Registrations:** First-trimester ANC registrations rose from 61% to 80.5%.

Contributions to Women's Empowerment:

- BBBP has been instrumental in advancing the empowerment of women and girls through:
 - Raising awareness about gender equality and the protection of the girl child.
 - Promoting education and skill development opportunities for girls and women.
 - Facilitating economic participation by enabling skill-building and employment prospects.
 - Ensuring improved healthcare access through increased institutional deliveries and timely antenatal care.
- The BBBP scheme stands as a testament to India's commitment to fostering gender equality and building a society where girls can thrive. By focusing on education, healthcare, and skill development, the program has laid a strong foundation for empowering women and transforming societal attitudes toward the girl child.

Denotified, Semi-Nomadic and Nomadic Tribes in India

Why in News:

In a significant development, the Anthropological Survey of India (AnSI) and Tribal Research Institutes (TRIs) have completed one of the most extensive ethnographic studies on India's diverse communities, categorizing 268 denotified, semi-nomadic, and nomadic tribes. This study, commissioned by a panel from NITI Aayog, began in February 2020 and concluded in August 2022.

About the Study:

- Led by the Anthropological Survey of India, in collaboration with Tribal Research Institutes in states such as Odisha, Gujarat, and Arunachal Pradesh, the study spanned over three years.
- It focused on understanding and documenting the socio-economic conditions of these tribes, many of whom face significant challenges due to their migratory lifestyles and historical marginalization.
- The study's findings revealed that a significant portion of the 268 communities surveyed had either been partially categorized in state lists or appeared in the central lists of some states.
- However, 63 communities were classified as "not traceable," meaning they likely assimilated into larger communities, changed their names, or migrated across regions. This highlights the challenges researchers faced in locating and studying some of these communities.
- A major recommendation emerging from the study is the inclusion of 179 communities in the Central lists of SC, ST, and OBC categories across 26 states and union territories. Among these, 85 communities are proposed for fresh inclusion, marking a historic shift in recognizing their socio-economic needs.

Recommendations for SC, ST, OBC Inclusion

- The study recommended the inclusion of various communities in the Central lists, broken down as follows:
 - » 46 communities are recommended for inclusion under the OBC category.
 - » 29 communities are recommended for inclusion under the SC category.
 - » 10 communities are recommended for inclusion under the ST category.
- States like Uttar Pradesh had the highest number of recommended additions, with 19 communities proposed for inclusion. Other states, including Andhra Pradesh, Tamil Nadu, Madhya Pradesh,

and Rajasthan, each have 8 communities recommended for inclusion.

- The study also suggested refining the existing classification of nine communities based on a more accurate understanding of their socio-economic status, thereby ensuring more appropriate representation.

About Denotified Tribes:

- Denotified Tribes (DNTs) refer to communities that were historically labeled as "born criminals" under the British colonial Criminal Tribes Act of 1871, which was repealed in 1952.
- Despite independence the stigma continued, and these communities are now categorized as Denotified Tribes. Nomadic and semi-nomadic tribes are part of these de-notified groups.

Nomadic Tribes:

- Nomadic tribes traditionally move from place to place in search of livelihood, without settling in one location for extended periods. These tribes often engage in activities like herding, hunting, gathering, or trading. Examples of nomadic tribes in India include:
 - » **Van Gujjars:** Primarily pastoral
 - » **Lambadis:** Engaged in trade
 - » **Gujjar-Bakarwals:** Primarily herders

Semi-Nomadic Tribes:

- Semi-nomadic tribes combine settled and nomadic lifestyles. These tribes practice agriculture during certain seasons while also engaging in activities such as herding, trading, or migration during other times of the year. Some examples of semi-nomadic tribes include:
 - » **Raikas:** Primarily pastoral but also practice agriculture
 - » **Banjaras:** Engage in trade and movement while settling temporarily for agriculture
- This comprehensive study not only sheds light on the historical and current challenges faced by these communities but also provides a roadmap for their socio-economic upliftment by recommending appropriate categorizations and inclusion in state and central lists.

Jallikattu

Why in News:

The recent Jallikattu and Manjuvirattu events held in

Tamil Nadu on Kaanum Pongal day have resulted in the deaths of seven people, including spectators and bull owners, with hundreds more injured. These traditional bull-taming events, part of the Pongal harvest festival, have sparked concerns regarding safety and animal welfare.

About Jallikattu:

- Jallikattu is a traditional bull-taming sport where participants attempt to control bulls running freely in a defined area.
- **Location:** It is typically held in Tamil Nadu during the Pongal festival, especially in rural regions like Madurai, Pudukkottai, and Karur.

Objective and Process:

- Tamers attempt to hold onto the bull's hump and tame it, while the bull tries to escape.
- **Prize:** If successful, tamers win a prize; if not, the bull's owner claims it.
- **Cultural Connection:** The sport is deeply linked to Tamil culture, celebrating the bond between humans and animals, and honoring cattle for their contribution to agriculture.

Historical Significance

- **Ancient Roots:** Bull taming has been a part of Indian tradition since the Mohenjodaro civilization (2500–1800 BC).
- **Tamil Literature:** Jallikattu is mentioned in Silappadikaram, a Tamil epic from the Sangam era, indicating its long cultural history.

Significance of Jallikattu:

- **Cultural Heritage:** Jallikattu is a vital aspect of Tamil Nadu's cultural identity, celebrated during Pongal.
- **Community Engagement:** The event fosters community spirit, particularly in rural areas, and strengthens local traditions.
- **Economic Benefits:** The sport supports the rural economy by sustaining native cattle breeds like Pulikulam.
- **Breed Preservation:** It helps preserve indigenous cattle breeds that are crucial for agriculture and rural livelihoods.

Arguments Against

- **Animal Cruelty:** Critics argue that the sport causes unnecessary pain, suffering, and stress to the bulls, violating animal welfare laws.
- **Safety Risks:** The event poses significant risks to human participants and spectators, with multiple

injuries reported each year.

- **Ethical Concerns:** Animal rights activists oppose the exploitation of bulls for entertainment and sport, citing violations of dignity and rights.

Other Traditional Festivals Involving Animals:

- **Kambala (Karnataka):** Buffalo races held in water-filled fields during harvest festivals.
- **Bullock Cart Racing (Maharashtra, Punjab):** Traditional races where bullock carts compete during rural fairs.
- **Cockfighting (Andhra Pradesh, Tamil Nadu):** Rooster fights held during Sankranti festivals.
- **Camel Racing (Rajasthan):** Camel races showcasing speed, often held at the Pushkar Fair.
- **Dhirio (Goa):** Traditional bullfighting sport conducted in rural areas.

Constitutional Provisions Related to Animal and Cultural Protection

- **Article 48A:** States must work to improve animal welfare and safeguard wildlife.
- **Article 51A(g):** Citizens must show compassion for animals and protect wildlife.
- **Article 21:** The right to life also applies to animals, emphasizing their dignity and fair treatment.
- **Article 29(1):** Protects cultural rights, including traditional practices like Jallikattu.
- **Entry 17, List III:** Allows central and state governments to legislate on animal welfare.

Recent Legal Developments:

- **2017 Amendment:** The Tamil Nadu government reinstated Jallikattu by amending the Prevention of Cruelty to Animals Act after it was banned from 2014 to 2016.
- **Supreme Court Verdict (2023):** The Supreme Court upheld Tamil Nadu's law permitting Jallikattu, recognizing its cultural significance.

The Maghi Festival

Why in News:

The Tharu community is recently celebrated their major festival, Maghi Parva, from January 14 to January 20, 2025. This celebration took place at the Tharu Cultural Museum, located in Sundarharaicha Municipality, Morang district, in eastern Nepal.

- This weeklong festival brought together Tharu culture, traditions, cuisine, and arts on a vibrant

national and international stage.

- Featuring over 40 industrial stalls and 30 food stalls, the event highlighted the unique crafts, foods, and cultural practices of the Tharu community, attracting both domestic and international attention.

Significance of the Festival:

- Maghi is a major festival for the Tharu people, marking the first day of the Nepali month Magh. It is a time for the community to celebrate and honor their rich traditions, cultural heritage, and deep connection to the land.
- For the Tharu, it is a moment of unity, reflection, and cultural pride, as families gather to celebrate with food, music, dances, and various social activities. This festival is particularly significant for preserving and promoting the identity and practices of the Tharu community amidst modern influences.
- Maghi also plays a crucial role in economic and cultural exchange, as the festival attracts large numbers of visitors. It offers an opportunity to showcase Tharu handicrafts, traditional dishes, and locally produced goods to a broader audience, fostering appreciation for Tharu culture.
- Additionally, the festival encourages the younger generation to engage with and continue the customs and traditions of their ancestors.

About the Tharu People:

- Tharu is an indigenous tribe that primarily resides in the Terai region of Nepal and India, located in the foothills of the Himalayas.
- In Nepal, the Tharu population is estimated at 1.7 million, according to the latest census in 2021. In India, they live mainly in the states of Uttarakhand, Uttar Pradesh, and Bihar.
- The Tharu community is known for its deep-rooted traditions in agriculture, handicrafts, and cultural practices. Their unique lifestyle and customs, such as joint family systems, patrilineal social structures, and distinctive marriage rituals, have made them a culturally rich group that has managed to preserve their identity despite modern challenges.
- Tharu cuisine, clothing, and dance forms are key

aspects of their vibrant cultural life, all of which are prominently featured during the Maghi festival.

Historical Recognition and Language:

- In 1967, the Tharu tribe was officially recognized as a Scheduled Tribe by the Government of India, acknowledging their distinct cultural and social identity.
- They speak Tharu or Tharuhati, a language belonging to the Indo-Aryan subgroup within the Indo-Iranian group of the Indo-European language family.

Maha Kumbh Mela 2025

Why in News:

The Maha Kumbh Mela, one of the largest religious gatherings globally, recently begun in Prayagraj, India on January 13, 2025. This sacred festival, celebrated every 12 years, will run for 45 days concluding on February 26, 2025.

The Mythological Origins of Kumbh Mela:

- The term "Kumbh" means pitcher in Sanskrit and is central to the mythological story behind the festival.
- According to Hindu mythology, during the churning of the ocean to obtain the elixir of immortality (amrita), drops of the elixir fell at four locations: Haridwar, Prayagraj, Ujjain, and Nashik. These sites now host the Kumbh Mela, celebrated every 12 years to mark the 12 days of the gods' churning process, equivalent to 12 human years.

The Historical Evolution of Kumbh Mela:

- The Kumbh Mela's roots lie in ancient scriptures, but its modern form evolved in the 12th century under the influence of Adi Shankaracharya.
- While religious fairs trace back to the 7th century, the Bhakti movement formalized the periodic gatherings at the four sacred sites, uniting ascetics and devotees.

The Four Sacred Cities:

The Kumbh Mela is held at four key locations:

- **Haridwar:** Held when Jupiter enters Aquarius, pilgrims bathe in the sacred Ganga.
- **Prayagraj:** Known for the confluence of the

Ganga, Yamuna, and Saraswati, it hosts the Maha Kumbh every 12 years.

- **Ujjain:** The Kshipra River hosts the Mela when Jupiter is in Leo.
- **Nashik-Trimbakeshwar:** The Godavari River is central when Jupiter aligns in Leo.

Significance of Kumbh Mela:

- **Spiritual Relevance:** The Kumbh Mela is spiritually significant, especially the ritual bath at the Triveni Sangam in Prayagraj. Pilgrims believe this dip in the confluence of the Ganges, Yamuna, and Saraswati rivers purifies their sins and grants moksha (spiritual liberation).



- **Cultural Showcase:** The Kumbh Mela is also a celebration of Indian culture, featuring devotional kirtans, bhajans, and classical dances like Kathak, Bharatanatyam, and Kuchipudi. These performances highlight spiritual unity and divine devotion.
- **Astrological Timing:** The event is timed according to the alignment of the Sun, Moon, and Jupiter, which enhances the spiritual energy of the festival. This astrological connection adds to the Mela's sacred significance, making it a powerful time for spiritual activities.
- **Simhastha Kumbh:** When Jupiter is in the zodiac sign Leo, the Mela at Nashik and Ujjain is known as

Simhastha Kumbh. This rare alignment increases the Mela's spiritual importance, drawing even more pilgrims for a grander celebration.

Kumbh Mela:

- The Kumbh Mela symbolizes national unity and showcases India's rich cultural heritage. In 2017, UNESCO recognized it as an Intangible Cultural Heritage of Humanity, acknowledging its enduring ancient traditions and its significance in fostering spiritual and cultural connections across generations.

Transgender Reservation

Why in News:

A transgender activist supporting horizontal reservation has filed a complaint against another activist for casteist and transphobic behavior, including misgendering and abusive language. The National Commission for Scheduled Castes (NCSC) has instructed the local administration and police to investigate and provide an action report.

About Horizontal vs. Vertical Reservation

Horizontal Reservation:

- Reservation for a specific group within a larger category.
- **Example:** Reservation for women or disabled within SC or OBC groups.
- Addresses sub-categories within a reserved category to address layered discrimination faced by specific groups, like transgender persons from marginalized castes.

Vertical Reservation:

- Reservation for specific categories such as caste, class, etc.
- Entire categories
- **Example:** Reservation for SC, ST, and OBC categories in general.
- Allocates seats to specific castes or communities but doesn't address the layered discrimination faced by transgender persons.

Supreme Court on Horizontal Reservation of Transgenders:

- The 2014 Supreme Court ruling instructed transgender people be treated as Socially and Economically Backward Classes (SEBCs), but

left room for interpretation. States like Madhya Pradesh have included them in the OBC category, while others like Tamil Nadu support horizontal reservations. The ambiguity led to the Supreme Court declining further clarification in March 2023.



Initiatives for Transgender Persons in India:

India has implemented several key initiatives to empower and support transgender individuals, focusing on their rights and well-being:

- **Transgender Persons (Protection of Rights) Act, 2019:** This law aims to end discrimination in education, employment, and healthcare, while recognizing the right of transgender persons to self-perceived gender identity.
- **Transgender Persons (Protection of Rights) Rules, 2020:** These rules operationalize the provisions of the 2019 Act, ensuring transgender persons can access legal support and welfare measures.
- **National Council for Transgender Persons:** Established under the 2019 Act, this council advises the government on policies, programs, and legislation aimed at improving the welfare of transgender persons.
- **Reservation for Transgender Community:** The Union Government is working on providing reservations for transgender individuals under the OBC category in government jobs to address historical marginalization.
- **National Portal for Transgender Persons:** This platform allows transgender individuals to apply for a Certificate and Identity Card online, ensuring a transparent and accessible application process.
- **Garima Greh:** A shelter scheme offering basic

amenities, medical care, and skill development for transgender persons, enabling them to live with dignity and integrate into society.

Way forward:

Transgender individuals, particularly from marginalized castes, experience intersectional discrimination, enduring both gender and caste-based prejudice. Activists assert that horizontal reservations are essential to effectively address these dual forms of discrimination, ensuring equality and fostering inclusion for this vulnerable group. Therefore, implementing steps like horizontal reservations is a necessary step towards a more just and equitable society.

Scholarship Portal Launched Under PM Yashasvi Yojana in Punjab

Why in News:

The Punjab government has launched a scholarship portal for students from the Other Backward Classes (OBC), Economically Backward Classes (EBC), and Denotified Tribes (DNT) categories. This is done under the Pradhan Mantri Young Achievers Scholarship Award Scheme (PM-YASHASVI) by the Ministry of Social Justice and Empowerment. This initiative aims to provide educational empowerment to students from economically backward and disadvantaged sections.

About the PM-YASHASVI Scheme:

- Pradhan Mantri Yashasvi Yojana offers financial assistance to students from socially and economically weaker sections to help them overcome barriers in their education and pursue higher education.
- The scheme seeks to pave the way for a better future for these students by empowering them through education.
- The scheme also subsumes older schemes like the Dr. Ambedkar Post-Matric and Pre-Matric Scholarships, thus offering a more comprehensive approach to educational support for students from disadvantaged backgrounds.
- Under the scheme, students are selected through the Yashasvi Entrance Test (YET), which is conducted by the National Testing Agency (NTA).

Eligibility Criteria

- The scheme is available to students from the

following categories:

- » Other Backward Classes (OBC)
- » Economically Backward Classes (EBC)
- » Denotified Tribes (DNT)
- In addition, the family's total annual income should be up to ₹2.5 lakh to qualify for the scheme.

Sub-Schemes:

- **Pre-Matric Scholarship (Class 9-10):** A scholarship of ₹4,000 will be given to students whose family income is below ₹2.5 lakh.
- **Post-Matric Scholarship (Post-Secondary Education):** Scholarships ranging from ₹5,000 to ₹20,000 will be provided, depending on the type of course pursued by the student.

Additional Facilities:

- The scheme will provide high-quality education at schools and colleges, as well as the construction of hostels for OBC category students. These additional facilities aim to offer a better educational environment, ensuring that students can pursue their studies without facing logistical barriers.

Conclusion:

The PM-Yashasvi scheme is a significant step toward making education more accessible to students from underprivileged sections in Punjab. By reducing financial barriers, it will encourage students to excel academically and ensure a bright future for them.

Indus Valley Civilization

Why in News:

Tamil Nadu Chief Minister M.K. Stalin has announced a \$1 million prize for those who successfully decipher the Indus Valley Civilization (IVC) script, potentially unlocking insights into one of the oldest and most enigmatic writing systems.

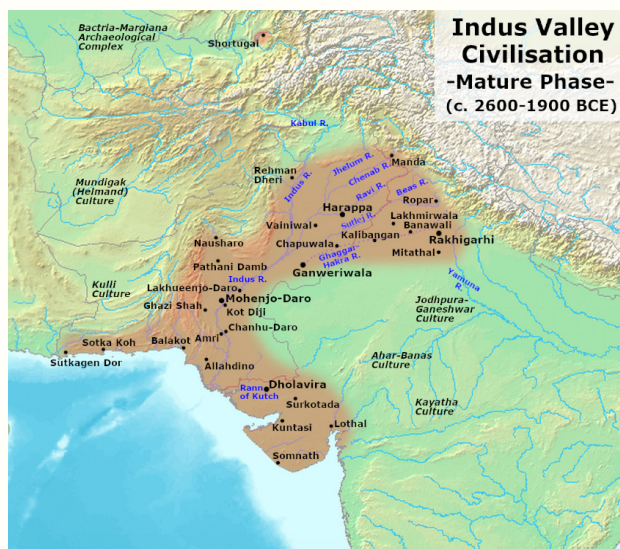
Why Indus valley Civilization script has not been deciphered till date?

- **Absence of multilingual inscriptions:** No bilingual or multilingual inscriptions from the Harappan period, making it difficult to compare symbols to known languages.
- **Unknown language:** The Harappan script represents an undecoded language, complicating the assignment of phonetic values. Various hypotheses (Dravidian, Indo-European) lack conclusive evidence.

- **Limited material evidence:** Only around 3,500 seals with brief inscriptions, limiting the ability to identify patterns. Many potential artifacts remain buried and unexplored.
- **Lack of cultural Why in News:** Little is known about Harappan society, making it challenging to interpret the script without understanding the civilization's culture and structures.
- **Theoretical disagreements:** Competing theories about the script's language (e.g., proto-Dravidian, Indo-European), with no consensus on its meaning.

About the Indus Valley Script:

- The Indus Script, dating back to 2600–1900 BCE, is a crucial but undecoded element of ancient history, offering clues about the socio-economic, cultural, and technological advancements of the Indus Valley Civilization.



Key Features of the Indus Script:

- **Material Use:** Inscribed on seals, pottery, tools, and tablets made of materials like steatite, bone, and copper.
- **Directionality:** Predominantly right to left, with some bidirectional writing.
- **Boustrophedon Style:** Alternating right-to-left and left-to-right writing.
- **Sign Types:** Includes logo-syllabic signs, representing whole words and phonetic sounds.
- **Numerals:** Uses a decimal system, with downward strokes for units and semicircles for tens.
- **Evolution:** Evolved from simple potter's marks to a developed writing system.

Deciphering Challenges:

- **Absence of Bilingual Inscriptions:** Lacking comparative texts, making translation difficult.
- **Short Texts:** Most inscriptions are brief, complicating pattern recognition.
- **Uncertain Linguistic Connections:** The language remains unknown, with theories suggesting links to Dravidian, Indo-European, or other languages.

Decline of the Indus Script:

- The script faded around 1800 BCE, coinciding with the decline of the Indus Valley Civilization. It was not adopted by later civilizations, contributing to its eventual loss.

Maiya Samman Yojana

Why in News:

Recently, Jharkhand Chief Minister Hemant Soren distributed the first increased instalment of Rs 2500 to eligible women under 'Maiya Samman Yojana' in a program organised in at Khoja Toli Army Training Ground in Jharkhand's capital Ranchi.

Key Details of the scheme:

- **Financial Aid Increase:** Under the revised Maiya Samman Yojana, the amount of monthly financial assistance given to women has been increased from Rs 1,000 to Rs 2,500. This move is aimed at financially empowering women in the state.
- **Start Date:** Beneficiaries started receiving the increased amount from December 2024.
- **Beneficiaries:** The scheme currently benefits around 50 lakh women in Jharkhand, all of whom are above the age of 18 years. With the revised amount, the financial burden on the state government is estimated to increase by Rs 9,000 crore annually.

Background on Maiya Samman Yojana:

- The Maiya Samman Yojana was introduced by the Jharkhand government in August 2024. It initially provided Rs 1,000 per month to women above the age of 18 years as part of an initiative to empower women financially.
- **Purpose:** The scheme is designed to support women in managing their household expenses and promoting financial independence, particularly for those without a regular income.

Universal Basic Income (UBI):

- Universal Basic Income (UBI) is a regular,

unconditional cash transfer given to all citizens, regardless of their income or socio-economic status. The goal is to reduce poverty and inequality by offering financial security and giving people more freedom in choosing work.

- **Article 41:** Guarantees the right to work, education, and public assistance in cases of unemployment, old age, sickness, disablement, and other cases of undeserved want
- **Advantages include:**
 - » Economic freedom
 - » Reduced corruption
 - » Equitable distribution of wealth
- However, there are challenges, such as:
 - » High fiscal costs
 - » Inflation risks
 - » Potential reduction in workforce participation
- Economic Survey 2016-17 suggests alternatives, such as targeting women or vulnerable groups, to make UBI more feasible in India.

New Study on Loneliness

Why in News:

A recent study has revealed a significant connection between loneliness, social isolation, and physical health issues, including diseases and even premature death. The study, titled "Plasma proteomic signatures of social isolation and loneliness associated with morbidity and mortality", was published in Nature Human Behaviour.

- It explores how loneliness and social isolation affect the levels of certain proteins in the blood, which are tied to several serious health conditions. The study emphasizes that social isolation is not just a psychological issue but has measurable biological effects that can influence long-term health.

Key Findings from the Study:

- **Proteomic Analysis:** Researchers analyzed blood samples from over 42,000 adults aged 40-69 from the UK Biobank. They compared protein levels in the blood of individuals reporting loneliness or social isolation to those not reporting these conditions.
- **Social Isolation and Loneliness Impact Protein Levels:** The study found that 9.3% of participants reported social isolation, while 6.4% reported loneliness. These individuals exhibited different protein profiles, with around 85% of the proteins

linked to loneliness also associated with social isolation.

- **Proteins Linked to Health Risks:** Elevated protein levels were found in people who experienced loneliness or social isolation. These proteins are associated with inflammation, viral infections, immune responses, cardiovascular diseases, type 2 diabetes, and even early death.
- **Key Proteins Identified:**
 - » **ADM (Adrenomedullin):** Increased in lonely individuals, ADM plays a role in regulating stress hormones and the “love hormone” oxytocin, which helps reduce stress and improve mood.
 - » **ASGR1:** Found at higher levels in isolated individuals, ASGR1 is linked to higher cholesterol and an increased risk of cardiovascular disease.
 - » Additional proteins were identified that contribute to insulin resistance, cancer progression, and other health conditions.
- **Role of Inflammation and Immune Response:** Many elevated proteins are part of the body's inflammatory response, linked to chronic inflammation. This inflammation has been connected to cardiovascular diseases, strokes, and other serious health issues.

Health Implications of Loneliness:

- **Cardiovascular Risk:** Elevated ASGR1 levels increase the risk of cardiovascular diseases, making isolated individuals more susceptible to heart-related issues.
- **Mental and Physical Stress:** Proteins like ADM indicate that loneliness disrupts stress regulation, which can exacerbate both physical and mental health problems.
- **Chronic Conditions:** The elevated protein levels are tied to conditions like type 2 diabetes and cancer, showing how social isolation accelerates the progression of diseases.

Recommendations and Future Directions:

- **Increased Awareness:** There is an urgent need to raise awareness of the health risks associated with loneliness. Both mental and physical health professionals should address social isolation as part of their care.
- **Policy and Community Action:** Governments should promote inclusive communities and social initiatives to reduce isolation, particularly among

the elderly and vulnerable populations.

- **Focus on Holistic Health Care:** Healthcare providers should consider social factors, including loneliness, when diagnosing and treating chronic diseases, encouraging social engagement as part of the treatment process.
- **Technological Solutions:** Advanced technologies like AI and proteomics could revolutionize how we understand and treat loneliness-related health issues by identifying biomarkers that link social isolation to specific diseases.

Pravasi Bharatiya Divas

Why in News:

The Pravasi Bharatiya Divas (PBD) is a significant event that celebrates the contributions of the overseas Indian community to India's growth and development. The 18th edition of PBD was held in Bhubaneswar, Odisha, from January 8 to 10, 2025. The theme for PBD 2025 was “Diaspora's Contribution to a Viksit Bharat,” emphasizing the vital role of the Indian diaspora in the nation's progress.

History of Pravasi Bharatiya Divas:

- PBD was first celebrated on January 9, 2003, to recognize the invaluable contributions of the Indian diaspora. The date also commemorates Mahatma Gandhi's return to India from South Africa in 1915, marking a historic moment in India's freedom struggle.
- The day acknowledges his role as the greatest Pravasi (overseas Indian). Initially an annual event, PBD was revised in 2015 to be held every two years to focus on enhancing engagement with the diaspora community.
- Over time, it has become a major platform for connecting the Indian diaspora with their cultural roots and encouraging their continued involvement in India's development.

Significance of the event:

- **Cultural Significance:** PBD is a celebration of the deep cultural ties between India and its global diaspora. The event provides an opportunity for overseas Indians to reconnect with their heritage and culture. It fosters cultural exchange between India and the countries where these diaspora communities reside, enabling the sharing of traditions, art, and values. This

exchange strengthens bonds and enhances mutual understanding between India and its overseas population.

- **Economic Significance:** The Indian diaspora contributes significantly to India's economy through remittances, which provide vital financial support to families and communities across India. Moreover, PBD encourages overseas Indians to invest in India, boosting the country's economic growth and development. The event serves as a platform to promote business opportunities, entrepreneurship, and innovations that benefit both India and the countries where the diaspora resides.
- **Social Significance:** PBD helps build a sense of community among overseas Indians, facilitating networking and collaboration. Many members of the diaspora contribute to social causes in India, such as education, healthcare, and poverty alleviation. Their charitable activities and investments improve the quality of life for millions of Indians and help address societal challenges.
- **Diplomatic Significance:** PBD strengthens India's diplomatic relations with countries that have large overseas Indian populations. It serves as an example of diaspora diplomacy, where India engages with its diaspora to promote national interests. The event also helps enhance India's influence on the global stage, building goodwill with foreign governments and international communities.
- **Personal Significance:** For overseas Indians, PBD provides a sense of belonging and pride in their heritage. The event inspires them to contribute actively to India's development, whether through investments, social work, or business ventures. It helps the diaspora feel connected to India and encourages their ongoing involvement in the nation's progress.

Polity & Governance

Digital Governance in India: Challenges, Opportunities, and Recommendations

In recent years, India has embarked on an ambitious journey towards digital governance, aiming to enhance citizen services and improve the efficiency of government employees. This transformation underscores a critical reality: the success of public service delivery is inherently tied to the skills and capabilities of the workforce behind it. Despite significant strides, key questions remain: What more can be done to fully realize the potential of this digital shift?

The Foundations of Digital Governance

❖ Governance is a multifaceted process involving diverse stakeholders, including government bodies, non-governmental organizations, local community leaders, and citizens. Chanakya's governance principles, articulated in the Arthashastra, have profoundly influenced South Asian governance, emphasizing statecraft, economic policy, and ethical leadership. In the contemporary context, integrating digital tools has become essential for reimagining governance structures at all levels. Capacity building for participants in governance is crucial to leveraging these tools effectively.

Capacity Building in Digital Governance:

❖ Digital governance marks a paradigm shift in how government employees and intermediaries, such as contractors, engage with their responsibilities. The integration of technology facilitates improved communication, informed decision-making, and streamlined workflows. As public expectations evolve, so must the skill sets of those in governance roles.

Key initiatives for Digital Governance:

- ❖ **iGOT Karmayogi Platform:** Launched in 2020, this online training portal equips government officials with essential skills in data analytics, public administration, and digital technologies. Personalized learning paths foster continuous improvement, crucial in an era defined by adaptability.
- ❖ **e-Office Initiative:** This initiative digitizes government workflows, significantly reducing reliance on paperwork and enhancing operational efficiency. Automation in file management, workflows, and grievance redress promotes real-time communication and transparency.
- ❖ **Government e-Marketplace (GeM):** The digitization of procurement processes through platforms like GeM ensures efficiency and accountability.
- ❖ **Digital Literacy Programs:** Various government programs aim to familiarize employees with e-governance tools, cybersecurity, and digital communication.

Challenges in Digital Governance

Despite these advancements, numerous challenges hinder the successful implementation of e-Governance in India. These can be categorized as follows:

- ❖ **Digital Infrastructure:**
 - » **Limited Broadband Connectivity:** Many rural and remote areas still lack high-speed internet access, affecting consistent e-governance services.
 - » **Power Supply Issues:** Frequent power outages and unreliable electricity in rural areas disrupt the functionality of digital infrastructure.
- ❖ **Interoperability:**

- » **Fragmented Systems:** Different government departments use legacy systems that are not always compatible, hindering seamless data sharing and coordination.
- » **Integration with Legacy Systems:** Upgrading and integrating old systems with modern technologies is both complex and costly.
- ❖ **Data Security and Privacy:**
 - » **Cybersecurity Threats:** Increased digitization heightens the risk of cyberattacks and data breaches. Robust cybersecurity measures are essential.
 - » **Data Privacy Concerns:** The absence of a comprehensive data protection law raises significant concerns about safeguarding personal data.
- ❖ **Digital Literacy:**
 - » **Low Literacy Rates and Digital Divide:** NSSO data shows 24% of rural households have internet access, compared to 66% in urban areas. NFHS-5 reveals that rural men are nearly twice as likely as women to use the internet (49% vs 25%).
 - » The GSMA Mobile Gender Gap Report 2024 highlights that women in India are 11% less likely to own a mobile phone and 40% less likely to use the internet, with only 33% aware of mobile internet.
 - » **Lack of Trained Government Employees:** Ensuring all government employees are proficient in managing e-governance platforms is a continuous challenge.
- ❖ **Technical Support and Maintenance:**
 - » **Inadequate Technical Support:** Skilled personnel for maintaining and troubleshooting e-governance systems are lacking in many regions.
 - » **Scalability Issues:** As user bases grow, systems must scale without performance degradation.
- ❖ **Cost and Funding:**
 - » **High Implementation Costs:** Establishing digital infrastructure, maintaining systems, and training personnel require substantial investment.
 - » **Cost of Advanced Technologies:** Cutting-edge technologies like AI and blockchain are expensive to deploy at scale.
- ❖ **User Accessibility and Inclusivity:**

- » **Language Barriers:** India's linguistic diversity necessitates e-governance services in multiple languages.
- » **Accessibility for Differently-Abled Individuals:** Ensuring inclusivity for differently-abled users requires additional technical considerations.

Recommendations for Overcoming Challenges:

The 2nd Administrative Reforms Commission (ARC) has made key recommendations for addressing these challenges:

- ❖ **Building a Congenial Environment:**
 - » Creating willingness for change within the government.
 - » Providing political support at the highest levels.
 - » Incentivizing e-Governance initiatives.
 - » Raising public awareness to generate demand for change.
- ❖ **Business Process Re-engineering:** Redesigning governmental processes and structures to align with e-Governance needs, supported by procedural, institutional, and legal changes.
- ❖ **Developing Technological Solutions:** Creating a national e-Governance enterprise architecture to standardize and optimize digital governance frameworks.
- ❖ **Monitoring and Evaluation:** Ensuring continuous monitoring of e-governance projects by the implementing organizations.
- ❖ **Public-Private Partnerships (PPP):** Leveraging PPP modes for various components of e-Governance projects.
- ❖ **Protecting Critical Information Infrastructure:** Developing strategies to secure critical infrastructure, supplemented by improved threat analysis and information sharing.
- ❖ **Capacity Building and Knowledge Management:** Establishing systems for knowledge management and skill development to strengthen governance initiatives.

The Way Forward

India's digital governance initiatives have set a robust foundation, but much remains to be done to harness the full potential of this transformation. Key recommendations include:

- ❖ **Infrastructure Development:** Strengthening digital infrastructure, particularly in rural areas, to bridge the digital divide.

- ❖ **Dynamic Training Programs:** Designing adaptive training modules to keep pace with technological advancements.
- ❖ **Incentive Structures:** Implementing mechanisms to reward innovation and successful adoption of digital tools.
- ❖ **Inclusive Policies:** Ensuring accessibility for all citizens, including the differently-abled and

linguistically diverse populations.

With robust infrastructure, continuous capacity building, and inclusive policies, India can establish a global benchmark for digital governance, achieving a model that is accountable, transparent, and inclusive for all.

Ad Hoc Judges: A Solution or a Stopgap for India's Judicial Backlog?

The Indian judiciary is grappling with an overwhelming backlog of cases, a crisis that has persisted for decades. With over 50 million pending cases across various levels of courts, delayed justice has become the norm rather than the exception. The implications are profound—eroding public trust in the legal system, weakening the rule of law, and prolonging the suffering of litigants who seek timely redressal of their grievances. In an effort to expedite case disposal while retaining judicial expertise, the appointment of ad hoc judges has emerged as a potential solution. However, the key question remains: is this a sustainable and holistic approach to judicial reform, or merely a temporary fix that fails to address the structural inefficiencies of the system?

The Judicial Pendency Crisis: Understanding the Scale of the Problem

- ❖ The backlog of cases in India's judiciary is staggering, affecting all tiers of the legal system. The National Judicial Data Grid (NJDG) presents alarming statistics:
 - » The Supreme Court alone has over 71,000 pending cases.
 - » High Courts are burdened with nearly 6 million cases.
 - » Subordinate courts face the most severe crisis, with over 41 million cases awaiting adjudication.
- ❖ Multiple factors contribute to this crisis, including procedural delays, excessive adjournments, and the growing complexity of legal disputes. However, the most critical issue remains the shortage of judges.
- ❖ According to the Law Commission of India, the

country has only around 21 judges per million people, a figure significantly lower than that of developed nations. Successive governments have struggled to fill judicial vacancies on time, creating a bottleneck that chokes the judicial process. In this context, the appointment of ad hoc judges is seen as a pragmatic measure to alleviate the crisis.

Ad Hoc Judges: Constitutional Backing and Appointment Process

- ❖ The provision for appointing ad hoc judges is embedded in Article 224A of the Indian Constitution. It allows for the appointment of retired High Court judges to serve temporarily in order to address judicial pendency. While their role is meant to be supplementary rather than permanent, ad hoc judges provide much-needed assistance in clearing long-pending cases.
- ❖ The process of appointment involves several layers of scrutiny:
 - » The Chief Justice of a High Court (CJHC) recommends a retired judge based on the urgency of pending cases.
 - » The State Government (Chief Minister and Governor) reviews and forwards the proposal.
 - » The Union Law Ministry consults the Chief Justice of India (CJI) before presenting the proposal to the Prime Minister.
 - » The President of India grants final approval.
 - » A formal Gazette notification confirms the appointment.
- ❖ While this process ensures oversight and prevents arbitrary appointments, it also introduces

bureaucratic delays. Given the urgency of the crisis, a streamlined mechanism for appointing ad hoc judges is necessary to make this measure more effective.

The Supreme Court's Evolving Stand on Ad Hoc Appointments:

- ❖ The Supreme Court has played an active role in regulating ad hoc appointments to ensure their effectiveness. In *Lok Prahari v. Union of India* (2021), the Court set clear "trigger points" for appointing ad hoc judges:
 - » If vacancies exceed 20% of the sanctioned strength.
 - » If over 10% of cases have been pending for more than five years.
 - » If the case clearance rate is lower than the filing rate.
- ❖ However, in January 2025, the Supreme Court revised these conditions to address the increasing backlog of criminal cases. A Bench led by Chief Justice Sanjiv Khanna introduced new measures:
 - » Ad hoc judges would primarily focus on criminal appeals.
 - » They would sit alongside permanent judges to ensure judicial oversight.
 - » The 20% vacancy threshold was relaxed, enabling broader appointments.
 - » The number of ad hoc judges would be capped at 10% of a High Court's sanctioned strength.
- ❖ These measures indicate the judiciary's struggle to strike a balance between efficiency and maintaining institutional integrity.

The Promise of Ad Hoc Judges: Benefits and Practical Advantages:

Ad hoc appointments come with several advantages that make them a viable short-term measure:

- ❖ **Expertise and Efficiency:** Retired judges possess extensive legal experience, allowing them to handle complex cases with greater efficiency.
- ❖ **Cost-Effectiveness:** Unlike the lengthy process of recruiting and training new judges, ad hoc appointments save both time and financial resources.
- ❖ **Immediate Backlog Reduction:** By focusing on long-pending cases, ad hoc judges provide immediate relief to an overburdened judiciary.

- ❖ **Flexible Deployment:** The system allows retired judges to be called upon as needed, preventing a permanent expansion of judicial posts.

The Pitfalls: Temporary Relief or Long-Term Dependency?

Despite their advantages, the appointment of ad hoc judges is not a substitute for comprehensive judicial reforms. Several concerns arise from this practice:

- ❖ **Judicial Independence at Risk:** Since the executive plays a role in approving ad hoc judges, there is a potential for political interference.
- ❖ **Continuity Issues:** Temporary judges may not oversee cases to completion, leading to inconsistencies in adjudication.
- ❖ **Delayed Structural Reforms:** Over-reliance on ad hoc judges may reduce pressure on the government to fill permanent judicial vacancies.
- ❖ **Resource Constraints:** The additional allowances and logistical support required for ad hoc judges could divert funds from long-term judicial infrastructure development.

The Way Forward:

For ad hoc appointments to be truly effective, they must be integrated into a broader judicial reform strategy. Some key recommendations include:

- ❖ **Strengthening the Framework for Ad Hoc Judges:**
 - » Establish an independent review board to oversee appointments.
 - » Implement fixed terms (2–3 years) with performance-based extensions.
 - » Develop clear case transition protocols to ensure judicial continuity.
- ❖ **Leveraging Technology for Judicial Efficiency:**
 - » Implement digital case tracking systems to monitor progress in real-time.
 - » Expand virtual hearings, particularly in criminal and commercial cases.
 - » Utilize AI-based legal research tools to assist judges in expediting case reviews.
- ❖ **Enhancing Judicial Capacity:**
 - » Maintain a reserve panel of retired judges for immediate deployment.
 - » Establish mentorship programs where ad hoc judges work alongside permanent judges to maintain consistency in judicial interpretation.
 - » Increase the sanctioned strength of judges in

High Courts and subordinate courts to meet the growing caseload.

- ❖ **Ensuring Judicial Independence:**
 - » Create a Judicial Appointments Commission to prevent executive overreach in the selection of ad hoc judges.
 - » Conduct regular performance reviews to ensure judicial integrity and efficiency.
- ❖ **Policy Integration and Sustainable Funding:**
 - » Align ad hoc appointments with broader legislative and policy reforms to enhance overall judicial efficiency.
 - » Secure sustainable funding to balance judicial salaries, infrastructure expansion, and technological advancements.

Conclusion:

The appointment of ad hoc judges offers a pragmatic yet temporary solution to India's judicial backlog. While their expertise and efficiency make them valuable, they cannot replace the need for systemic reform. Judicial vacancies must be filled promptly, digital infrastructure must be strengthened, and judicial independence must be safeguarded. The judiciary must tread carefully—ad hoc appointments should complement, not substitute, long-term strategies for judicial efficiency. If India fails to address the root causes of case pendency, the nation risks turning a temporary remedy into a permanent crutch, exacerbating the deeper crisis of delayed justice.

Short Issues

One Nation, One Legislative Platform

Why in News:

The 85th All India Presiding Officers' Conference (AIPOC), held in Patna, Bihar, emphasized the need to improve the functioning of India's legislative bodies. A significant announcement from the conference was the One Nation, One Legislative Platform, an initiative set to unify all legislative bodies in India onto a single digital platform. This bold step aims to reshape legislative processes and enhance public engagement with governance.

About One Nation, One Legislative Platform:

- The One Nation, One Legislative Platform is a pioneering initiative designed to integrate India's Parliament, state legislatures, and local bodies into one cohesive digital framework.
- The platform aims to streamline legislative operations by enabling real-time data sharing, fostering transparency, and encouraging greater public participation in legislative processes.

Key Objectives of the Platform:

- **Real-time Legislative Data sharing:** The platform will allow seamless sharing of legislative proceedings, bills, and debates, providing immediate access to vital legislative data across various bodies, ensuring that citizens and

lawmakers stay well-informed.

- **Enhanced Transparency and Accountability:** With real-time updates on legislative activities, the platform will improve the transparency of legislative work, allowing the public to monitor the debate and decision-making processes, leading to greater accountability.
- **Public Participation:** By making legislative information more accessible, the platform will engage citizens more directly in governance. This increased accessibility encourages public participation in democratic activities, strengthening democratic processes.
- **AI and Technology Integration:** The platform will use Artificial Intelligence to optimize legislative functions, analyze data, and streamline decision-making, ensuring that legislative processes are more efficient and data-driven.
- **Paperless Legislatures:** The platform will digitize legislative records, reducing reliance on physical documentation and promoting sustainability through eco-friendly, paperless operations.

About All India Presiding Officers' Conference (AIPOC):

- Established in 1921, the AIPOC brings together presiding officers of India's legislative bodies.
- This year's conference focused on improving legislative decorum, celebrating the 75th

anniversary of the Indian Constitution, and driving digitization initiatives.

RG Kar Rape Case

Why in News:

Sanjoy Roy, convicted of raping and murdering a doctor at RG Kar Medical College in Kolkata, was sentenced to life imprisonment by a sessions court. Despite the CBI's demand for the death penalty and public outcry, the court applied the Supreme Court's principle of reserving the death penalty for the "rarest of rare" cases, considering aggravating and mitigating circumstances.

Rarest of Rare Doctrine:

- The Bachan Singh case (1980) established the "rarest of rare" doctrine, which limits the death penalty's application. It can only be imposed when:
 - » The crime shocks society's collective conscience.
 - » The offender is beyond reform and remains a threat to society.

About Aggravating Circumstances for Death Penalty:

- **Premeditation and Brutality:** If the murder was pre-planned, calculated, and involved extreme brutality.
- **Exceptional Depravity:** If the crime demonstrates extraordinary cruelty.
- **Murder of Public Servants:** If the murder involves a public servant, police officer, or armed forces member on duty, or due to their lawful actions.

Mitigating Factors Against Death Penalty:

- **Mental or Emotional Disturbance:** The offender acted under extreme mental or emotional stress.
- **Age of the Accused:** Younger or elderly offenders may have greater potential for reform.
- **Possibility of Reform:** The offender could be rehabilitated.
- **Acting Under Influence:** If the offender acted under someone's direction or had moral justification.
- **Mental Impairment:** The offender was unable to understand the criminality of their actions due to mental illness.

Evolution of Legal Precedents:

- **Young Age as a Mitigating Factor:** Cases like Ramnaresh v. State of Chhattisgarh (2012) recognized young offenders as having a higher chance of reform.
- **Inconsistent Consideration of Age:** The Law Commission's 262nd Report (2015) called for a more uniform approach to factoring age into sentencing.
- **Comparing Similar Offences:** In Shankar Kisanrao Khade v. State of Maharashtra (2013), the Supreme Court emphasized comparing similar cases to ensure consistency in sentencing.

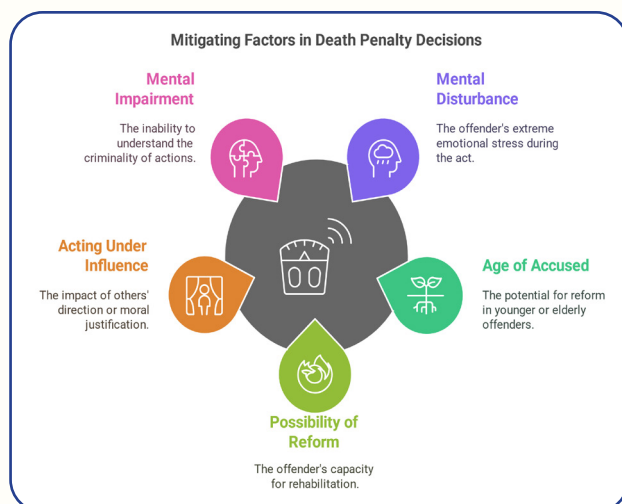
Challenges and Inconsistencies in Sentencing:

Despite the Bachan Singh guidelines, the death penalty's application remains inconsistent:

- **Imbalance in Aggravating and Mitigating Factors:** Aggravating factors are available in case records, while mitigating factors are introduced post-conviction, creating an imbalance.
- **Sentencing Hearing Issues:** In Dattaraya v. State of Maharashtra (2020), the absence of a proper sentencing hearing led to the commutation of the death sentence to life imprisonment. The Court also questioned whether same-day sentencing provides a meaningful opportunity for the convict to present mitigating factors.
- **Need for Uniform Guidelines:** The Supreme Court has referred the matter to a larger Bench to establish uniform guidelines for considering mitigating factors in death penalty cases.

Conclusion:

The death penalty in India remains a subject of legal complexity. The "rarest of rare" principle ensures it is only applied in extreme cases. However,



inconsistencies in how mitigating and aggravating factors are considered and issues with sentencing hearings continue to challenge fairness in the judicial process. The Supreme Court's efforts to establish uniform guidelines aim to create a more balanced approach to capital punishment in India.

Bail under PMLA

Why in News:

The Supreme Court of India recently examined the issue of bail under the Prevention of Money Laundering Act (PMLA), particularly the exception for women under Section 45. This ruling clarifies how women accused of money laundering are treated under the law.

About the case:

- Shashi Bala, a government school teacher, was accused of aiding the Shine City Group in a money laundering scam. The Enforcement Directorate (ED) alleged she received over Rs 36 lakh from the fraud.
- Despite the gravity of her role, the Allahabad High Court denied her bail in September 2024, stating she didn't qualify as a "vulnerable woman" under the exception in Section 45.

The Supreme Court's Stand:

- The Supreme Court, on criticized the ED's argument that the exception for women should not apply to Bala. Justices A S Oka and Augustine George Masih questioned the ED's interpretation of the law, highlighting that women are entitled to bail under Section 45 unless there are exceptional circumstances such as being a flight risk or tampering with evidence.
- The Court granted Bala bail, reinforcing the principle that women are not subject to the same stringent conditions as other accused, unless justified.

The Legal Framework of PMLA Bail Provisions:

- Section 45 of PMLA stipulates strict conditions for granting bail, requiring the accused to prove that there is no prima facie case against them.
- However, the exception allows women, minors, and the sick to be granted bail at the discretion of the Special Court.
- This provision is debated in terms of whether it applies universally to women or if certain women, such as well-placed or educated ones, should be

excluded.

Key Legal Precedents on Women and Bail under PMLA:

- In 2023, Delhi High Court granted bail to Preeti Chandra, rejecting the ED's argument that she was not a "household lady," reaffirming that all women are entitled to the exception unless other factors apply.
- In 2024, Kavitha, a BRS leader, was denied bail by a Delhi trial court for not being a "vulnerable" woman. However, the Supreme Court later granted her bail, reinforcing that the exception applies to all women, barring specific exceptions.

About Prevention of Money Laundering Act, 2002 (PMLA):

- The Prevention of Money Laundering Act (PMLA), 2002 is a law enacted by the Parliament of India to prevent and combat money laundering activities.

Key Provisions of PMLA:

- Section 3 defines money laundering as any attempt, assistance, or involvement in processes connected to the proceeds of crime to project it as untainted property.
- Section 4 underlines punishment for money laundering.
- The offence of money laundering shall be punishable with rigorous imprisonment for a term not less than three years extending to seven years and shall also be liable to a fine.
- **Attachment and Confiscation of Property:** It allows for the attachment and confiscation of property involved in money laundering.
- It mandates entities, such as banks and financial institutions, to maintain records of transactions and report suspicious transactions to the Financial Intelligence Unit (FIU).

Citizenship for Sri Lankan Tamil Refugee

Why in News:

The Madurai Bench of the Madras High Court recently directed the Indian Ministry of Home Affairs to consider the citizenship application of Mathine, a Sri Lankan Tamil refugee who has lived in India since 1984. Mathine had applied for Indian citizenship under Section 5(1)(a) of the Citizenship Act in 2022, but no

action had been taken on her application.

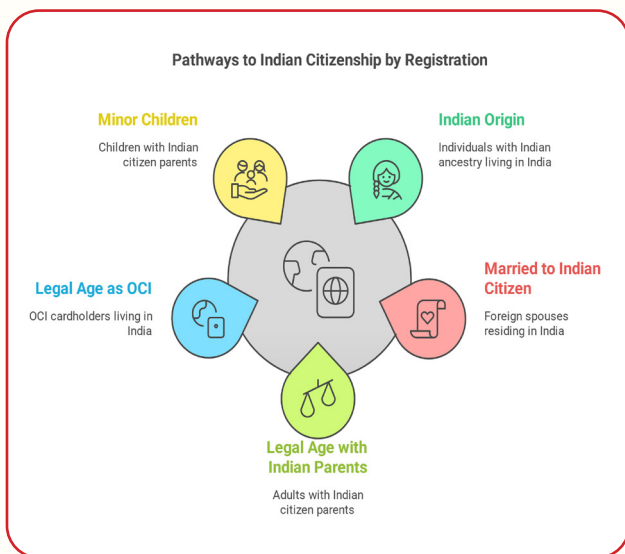
- The court's intervention stresses the need for the timely processing of refugee applications and highlights the issue of statelessness affecting refugees in India.

About Citizenship by Registration:

- The Citizenship Act, 1955 provides provisions for Citizenship by Registration for certain individuals.
- Key categories eligible for registration include:
 - » **Person of Indian Origin:** Must have lived in India for at least seven years before applying.
 - » **Foreign Person Married to an Indian Citizen:** Must have lived in India for seven years before applying.
 - » **Persons of Legal Age:** Parents must be Indian citizens, or the applicant must be registered as an OCI cardholder for five years and have lived in India for twelve months before applying.
 - » **Minor Children:** Parents must be Indian citizens.

Important Notes:

- A person of full age must take an oath of allegiance.
- Individuals who have renounced or lost their Indian citizenship cannot apply for registration.



Historical Background of Citizenship for Indian-Origin Tamils:

- **As Indentured Plantation Workers:** Indian-origin Tamils were brought to Sri Lanka by the British as laborers in the 19th and early 20th centuries. They were socially isolated from native

Sri Lankan communities due to discriminatory colonial policies.

- **Denial of Citizenship and Stateless Population:** After Sri Lanka's independence in 1948, Indian-origin Tamils were marginalized due to rising Sinhalese nationalism. By 1960, around one million Tamils were left stateless, without political rights or recognition.
- **Bilateral Pacts and Grant of Citizenship:** The Sirimavo-Shastri Pact (1964) and Sirimavo-Gandhi Pact (1974) granted citizenship to six lakh Indian-origin Tamils, allowing them to repatriate to India.
- **Civil Wars and the Asylum Crisis:** The Sri Lankan Civil War caused many Tamils to seek refuge in India, leading to a government directive in 1983 halting citizenship grants to refugees arriving after that year.
- **Classified as Illegal Migrants under CAA 2003:** Those who arrived after 1983 were considered "illegal migrants" under the Citizenship Amendment Act (CAA) 2003, worsening their statelessness.

Overcoming Statelessness: Legal Pathways

- **Legal Approaches to Statelessness:** Recent judicial rulings have provided guidance for overcoming the statelessness of Indian-origin Tamils.
- **Key Legal Judgments:**
 - » **P. Ulaganathan vs Government of India (2019):** The Madras High Court ruled that prolonged statelessness violated the fundamental rights under Article 21 of the Constitution, which guarantees the right to life and liberty.
 - » **Abirami S. vs The Union of India (2022):** The court asserted that statelessness should be avoided and recommended extending the CAA 2019 provisions to Sri Lankan Tamil refugees.
 - » **Supreme Court Case:** Committee for C.R. of C.A.P. vs State of Arunachal Pradesh (2015): India's undertakings in the 1964 and 1974 pacts created a legitimate expectation for Indian-origin Tamils to be granted citizenship.
- **Obligatory International Customary Law:** De jure statelessness, recognized by international law, obligates countries to address stateless populations created by policy failures, as seen in the case of Indian-origin Tamils.

Supreme Court Ruling on Suicide Abetment Charges

Why in News:

The Supreme Court recently ruled that charges of abetment of suicide under Section 306 IPC should not be invoked mechanically, especially to soothe the grieving family. It emphasized the need for investigative agencies and courts to adopt a more careful and nuanced approach when framing such charges.

Case Background:

- Mahendra Awase, a bank manager in Madhya Pradesh, was accused of abetting the suicide of Ranjeet Singh, who left a note alleging harassment over loan repayment.
- The court clarified that for Section 306 IPC to apply, there must be clear evidence of instigation, conspiracy, or assistance in the suicide.
- Emotional exchanges in stressful situations cannot automatically be considered instigation, and charges shouldn't be based solely on grieving families' immediate reactions.
- The court dismissed charges against Awase, citing insufficient evidence, delayed FIR, and the need for a practical approach in sensitive cases

Implications:

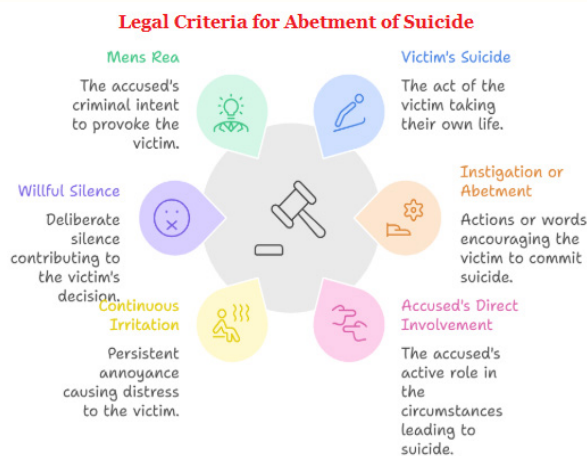
- This ruling call for greater awareness and care in handling suicide abetment cases, urging authorities to consider the true intent behind actions before framing serious charges.
- The Court's decision is seen as a push for more informed, transparent legal proceedings in cases involving suicide.

About Abetment of Suicide:

- Abetment of suicide is the act of encouraging, conspiring, or aiding someone to take their own life. Under Section 306 of the Indian Penal Code (IPC) (and Section 108 of the Bharatiya Nyaya Sanhita, BNS), it is a punishable offence, with penalties including up to 10 years of imprisonment and a fine.
- Section 45 of the Bharatiya Nyaya Sanhita (BNS) defines abetment as:
 - » Instigating someone to commit suicide.
 - » Conspiring with others to do so.
 - » Aiding the act intentionally.
 - » Making false allegations leading to public humiliation.

Notable Supreme Court Cases Related to Abetment of Suicide:

- **M Mohan v. The State (2011):** The Court ruled that abetment of suicide must involve a direct act of incitement, leaving the victim with no choice but to commit suicide.
- **Ude Singh v. State of Haryana (2019):** The Court held that abetment requires either direct or indirect incitement that leaves the victim with no alternative but suicide.



Government Initiatives Exist for Suicide Prevention

- **Mental Healthcare Act (MHA), 2017:** Provides a framework for mental health care and treatment.
- **KIRAN Helpline:** A toll-free helpline for mental health support.
- **Manodarpan Initiative:** Provides psychological support to students and teachers.
- **National Suicide Prevention Strategy (2022):** A strategy to reduce suicides and improve mental health services in India.

Same-Sex Marriage

Why in News:

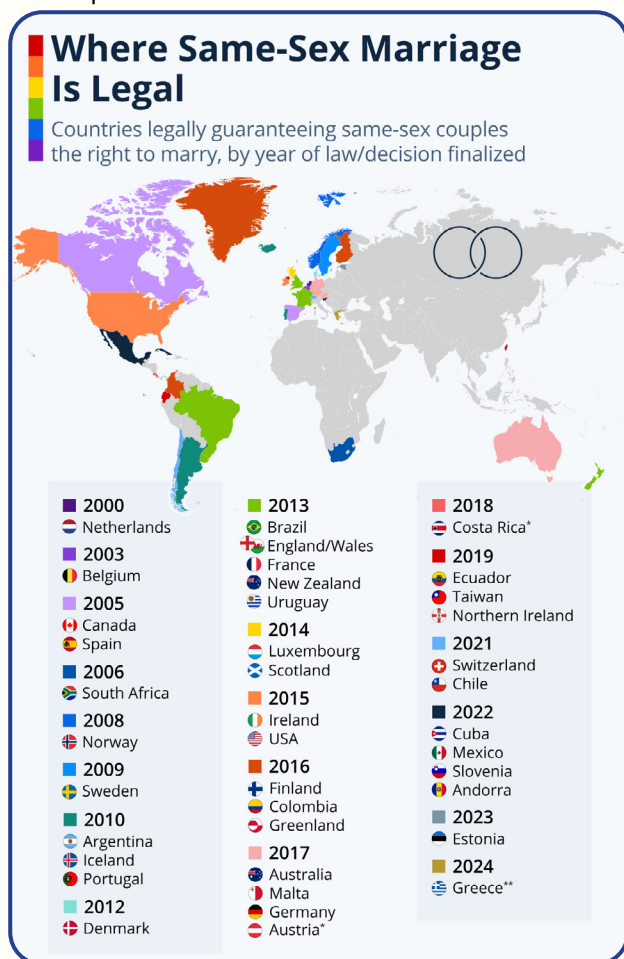
The Supreme Court of India recently dismissed the review petitions filed against its October 17, 2023, ruling, which had rejected the legal recognition of same-sex marriages. The five-judge bench, comprising Justices B R Gavai, Surya Kant, B V Nagarathna, P S Narasimha, and Dipankar Datta, found no error in the majority judgment authored by Justice (retired) S Ravindra Bhat.

2023 Ruling on Same-Sex Marriage:

- In its 2023 ruling, the Supreme Court declined to amend the provisions of the Special Marriage Act, 1954 (SMA), stating that there was no unqualified right to marriage in the Constitution.
- The Court emphasized that same-sex couples could not claim marriage as a fundamental right under the Constitution. The bench left the task of recognizing same-sex unions to Parliament, urging legislative reform instead of judicial intervention.

About Same Sex Marriage:

- Same sex marriage refers to the legal and social recognition of marriage between individuals of the same gender or sexual orientation. In such marriages, two people of the same sex come together in a formal union, just like opposite-sex couples, with the same legal rights and responsibilities.



The Legality of Same-Sex Marriages in India

- In India, marriage is not recognized as a

fundamental right under the Constitution, but it is considered a statutory right. The right to marry has been shaped by judicial rulings, most notably the Supreme Court's decisions over time.

- While the Special Marriage Act, 1954, provides a legal framework for civil marriages irrespective of religion, the Court has yet to extend this to same-sex marriages, emphasizing that marriage is not an absolute constitutional right.
- Same-sex couples currently do not have the same legal recognition, and it remains up to the legislature to amend laws like the Special Marriage Act to accommodate same-sex unions.
- Although, In November 2018, the Supreme Court of India decriminalized homosexuality by striking off parts of Section 377 of the Indian Penal Code (IPC) that criminalized consensual homosexual acts between adults. The judgment recognized that such provisions violated the fundamental rights of the LGBTQ community, particularly their right to equality, privacy, and liberty.
- It affirmed that the rights of LGBTQ individuals are protected under Articles 14, 15, 19, and 21 of the Indian Constitution, which guarantee equality, non-discrimination, freedom of expression, and the right to life and personal liberty.

Future of Same-Sex Marriage in India:

- While the review petition has been dismissed, LGBTQ+ activists and allies continue to push for legislative changes that would grant legal recognition to same-sex marriages.
- As it stands, the onus remains on Parliament to amend existing laws and provide the legal framework necessary to recognize same-sex unions in India.

Cashless Treatment Scheme for Road Accident Victims

Why in News:

The Union Road Transport and Highways Minister Nitin Gadkari recently launched of new cashless treatment scheme for road victims. This scheme covers treatment costs up to ₹1.5 lakh per incident and aims to ensure that victims receive immediate medical attention during the critical "golden hour" after an accident.

Features of the scheme:

- The scheme applies to all road accidents involving

motor vehicles. Victims must be treated at hospitals accredited under the Ayushman Bharat scheme.

- Victims can receive health benefits for trauma and polytrauma cases for treatment duration of up to seven days.
- The treatment will be covered only if a police report is filed within 24 hours of the accident.
- The NHA will oversee the implementation of the scheme, in collaboration with police, hospitals, and state health authorities.
- The NHA will manage the IT platform that integrates the e-Detailed Accident Report (eDAR) application with the Transaction Management System to facilitate seamless processing of claims and medical treatment.

Benefits of the Scheme:

- The scheme ensures that road accident victims receive immediate medical care during the critical "golden hour," improving survival chances.
- It provides financial relief by covering medical expenses up to ₹1.5 lakh, removing the financial barrier to urgent treatment.
- It is implemented nationwide, offering coverage and support for accident victims across all states and union territories.
- Timely medical care through the scheme reduces mortality rates and long-term health complications from road accidents, improving public health outcomes.

Road Safety and Accidents in India (2023):

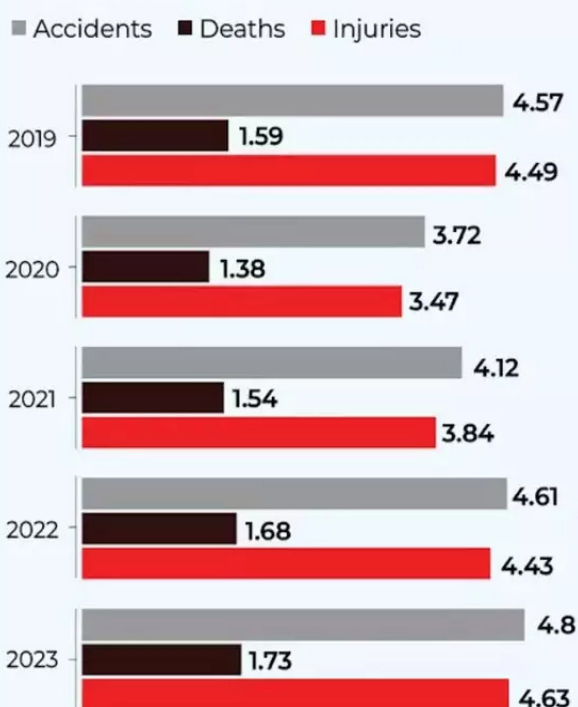
- **Total Accidents:** 4.80 lakh road accidents, a 4.2% increase from 2022.
- **Fatalities:** Over 1.72 lakh deaths, with 1,317 accidents and 474 deaths daily.
- **State with Highest Fatalities:** Uttar Pradesh recorded 23,650 deaths from 44,000 accidents.
- **Primary Cause of Fatalities:** Over-speeding responsible for 68.1% of fatalities.
- **Lack of Safety Gear:** 54,000 deaths due to no helmets; 16,000 deaths due to no seat belts.
- **Driving Violations:** Over 34,000 accidents from unlicensed driving; 12,000 deaths from overloading.
- **Infrastructure Issues:** Potholes, inadequate crossings, and poor vehicle braking systems.
- **Behavioral Issues:** Reckless driving, speeding, and weak traffic law enforcement.
- **Economic Impact:** Road accidents cost 5-7% of

India's GDP annually.

- **Impact on Society:** The financial burden of accidents is disproportionate, especially on the poor.
- **Healthcare Burden:** Increased out-of-pocket expenses due to insufficient health insurance.

Rising Road Deaths

(All Figures in Lakh)



Road Safety Initiatives:

- National Road Safety Policy (2010).
- Supreme Court Committee on Road Safety (SCCoRS)
- Motor Vehicles Amendment Act (2019)
- National Road Safety Month/Week
- Good Samaritan Law to protect helpers
- **Global Road Safety Goals:** India signed the Brasilia Declaration and participates in the UN Decade of Action for Road Safety (2021-2030).

Way Forward:

Improve road infrastructure, enforce traffic laws, promote awareness, and integrate AI-based traffic management systems.

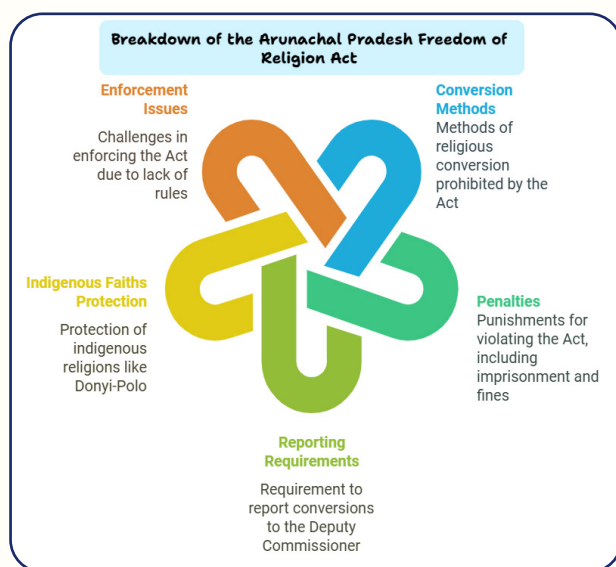
Arunachal Pradesh Revives 1978 Anti-Conversion Act

Why in News:

Arunachal Pradesh is revisiting the Arunachal Pradesh Freedom of Religion Act of 1978, nearly five decades after it was passed but never enforced. The state government is now working to frame the necessary rules for its implementation. The Act, which prohibits forceful or fraudulent religious conversions, has sparked debates about its potential to protect indigenous religions while addressing the rise of conversions, particularly to Christianity.

What is the Arunachal Pradesh Freedom of Religion Act?

- The Act, passed in 1978, makes it illegal to convert someone to another religion through force, inducement, or fraud, with penalties including imprisonment for up to two years and fines of up to Rs. 10,000. It mandates that any conversion must be reported to the Deputy Commissioner of the district.
- The law aims to safeguard indigenous faiths, such as Donyi-Polo (nature worship), practiced by many tribal communities in Arunachal Pradesh. However, the Act has remained dormant for years due to the lack of rules for its enforcement.



Why was the Act introduced?

- The Act was introduced during a time when Arunachal Pradesh, a state with diverse ethnic and

religious groups, was experiencing rapid changes in religious affiliations. Christian missionary activities increased, particularly in areas close to Assam, leading to a growing Christian population.

- Prior to the 1950s, Christianity had been limited due to challenging terrain and colonial restrictions. However, by the 1970s, Christianity spread among communities like the Adis, Nyishis, and Noctes, leading to concerns among tribal communities about the erosion of their traditional beliefs.

Why has the act stayed dormant?

- The Act faced significant opposition, particularly from the Christian community. The Arunachal Christian Forum, formed shortly after the Act's introduction, has criticized the law, claiming it could discriminate against religious minorities and fuel tensions between communities. As a result, successive state governments avoided enforcing the law, wary of worsening religious divides.

Why is the Act being Revived Now?

- The Act's revival follows a 2022 public interest litigation that highlighted the government's failure to implement the law. The Gauhati High Court urged the state to finalize the rules, with an expected deadline of six months. Supporters, such as Maya Murtem from the Indigenous Faiths and Cultural Society of Arunachal Pradesh (IFCSAP), argue the law is essential to protect indigenous cultures amid increasing conversions, with some districts seeing conversion rates as high as 90%.

What are the Concerns?

- The revival has raised concerns about potential religious tension, especially given that Christians now make up about 30% of the state's population. Critics argue that the law could be misused by local authorities, targeting Christians and worsening religious divides. While the Act aims to protect indigenous faiths, some fear it could infringe on individual rights to freely choose their religion, potentially institutionalizing religious exclusivity.

Digital Personal Data Protection (DPDP) Rules

Why in News:

The Ministry of Electronics and Information Technology (MeitY) recently unveiled the draft of the Digital

Personal Data Protection (DPDP) Rules, 2025, which are a critical step toward operationalizing the Digital Personal Data Protection Act (DPDPA) that was notified in August 2023.

Key Features of the Draft Rules

- **Notice Requirements:** Data fiduciaries must inform users about the data they are collecting, the purpose for its collection, and provide a clear account of how to give informed consent for data processing.
- **Consent Managers:** The rules allow for the registration of "consent managers" to work with data fiduciaries. These entities will help ensure that user consent is collected in a specified format for processing personal data.
- **Government Data Collection:** The government can collect personal data for providing subsidies or benefits, subject to certain standards. Data collected for "statistical" purposes is exempt from these requirements.
- **Security Measures:** Data fiduciaries must take reasonable security safeguards, both technical and operational, to protect personal data. In the event of a data breach, the Data Protection Board of India (DPBI) must be informed within 72 hours.

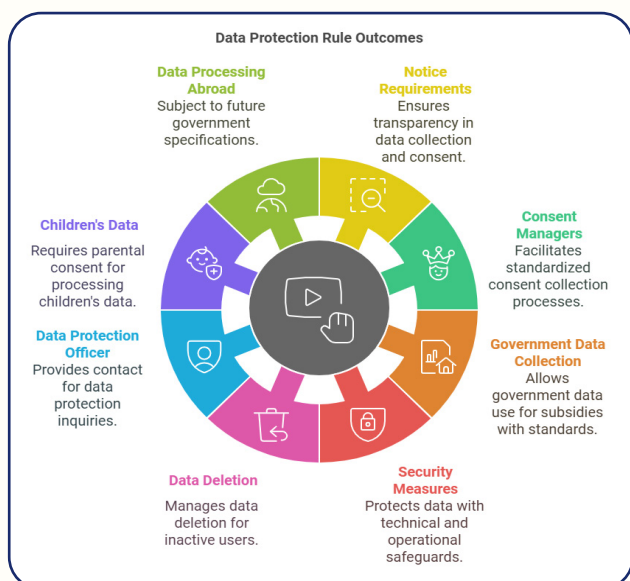
- **Contact Information for Data Protection Officer:** Data fiduciaries must provide contact information for a data protection officer on their website, particularly for significant data fiduciaries who are required to conduct periodic Data Protection Impact Assessments and audits.
- **Children's Data:** The rules emphasize that personal data of children should not be processed without verifiable parental consent. The consent may be collected using identity and age details provided by a trusted authority, such as a Digital Locker service.
- **Data Processing Abroad:** The rules state that data processing outside of India is subject to future requirements that the government may specify through orders.

About Digital Personal Data Protection Act, 2023:

- The Digital Personal Data Protection Act, 2023 (DPDP Act) was enacted on August 11, 2023, after several iterations. It replaces Section 43A of the Information Technology Act, 2000, and the Information Technology Rules, 2011.
- The Digital Personal Data Protection Act (DPDPA) applies to data that is processed digitally, excluding data handled in an analog manner. It aims to protect individuals' privacy rights while providing a framework for the responsible use of personal data by organizations. This Act came after years of discussions and revisions, beginning with recommendations made by a high-level expert group in 2011 under the chairmanship of former Delhi High Court Chief Justice AP Shah.

Importance of Data Protection:

- The rules and Act are in line with the Supreme Court's 2017 ruling on the right to privacy, which recognized privacy as a fundamental right under India's Constitution. With the introduction of these rules, India takes a significant step toward robust data protection, aligning with international standards while addressing the unique challenges of the digital economy.



- **Data Deletion for Inactive Users:** If a user is inactive on a platform (such as an e-commerce site, social media, or online gaming), their data must be deleted after a 48-hour notice period, allowing them time to prevent the deletion.



International Relations

India-Indonesia Relations: A Historical and Strategic Overview

India and Indonesia share deep-rooted civilizational, cultural, and geographical ties that have historically positioned them to develop a robust bilateral relationship. However, despite the potential for cooperation, this relationship has fluctuated over time, influenced by changing geopolitical contexts and leadership priorities. The recent state visit of Indonesian President Prabowo Subianto to India in January 2025 has provided a significant opportunity to further strengthen this partnership.

Historical Foundations of India-Indonesia Relations

- ❖ **Anti-Colonial Support:** India, under Prime Minister Jawaharlal Nehru, supported Indonesia's independence movement against Dutch colonial forces. India took measures like banning Dutch airlines from Indian airspace and boycotting Dutch shipping, and also helped evacuate Indonesian leaders Sutan Sjahrir and Mohammad Hatta.
- ❖ **Formal Diplomatic Relations:** In 1950, Indonesian President Sukarno visited India, marking the start of formal relations. The 1951 Treaty of Friendship promoted "perpetual peace and unalterable friendship." Both countries strongly aligned on non-alignment and anti-imperialism, highlighted by the Bandung Conference in 1955 and the creation of the Non-Aligned Movement (NAM) in 1961.

Divergence and Cooling Relations (1960s-1970s)

- ❖ **Geopolitical Tensions:** India's growing concern over China after the 1962 Sino-Indian War clashed with Indonesia's friendly relations with China. Indonesia sided with Pakistan during the

- 1965 India-Pakistan War, leading to further strain.
- ❖ **Political Tensions:** Sukarno's radical foreign policies and tensions with Nehru led to a need for third-party mediation during the 1961 Belgrade Summit. Following a coup in Indonesia, General Suharto's rise to power shifted Indonesia's foreign policy towards the West, helping thaw relations with India.

The 1990s: A New Era of Engagement

- ❖ **India's "Look East" Policy:** India's economic liberalization and the collapse of the Soviet Union led to its "Look East" policy, strengthening ties with Southeast Asia. Indonesia, as a significant ASEAN member, became a key partner in this initiative.
- ❖ **"Act East" Policy:** In the early 2000s, India's "Act East" policy further enhanced diplomatic, economic, and security cooperation with Indonesia.

Contemporary Relations: A Comprehensive Partnership

- ❖ **Trade and Economic Cooperation:** The economic relations between India and Indonesia have been growing significantly. Indonesia has risen to become the largest trading partner of India in the ASEAN region after Singapore. In 2023-24, Indonesia exported products worth US\$ 23.41 billion to India. The total bilateral trade in 2023-24 reached a record US\$ 29.4 billion. Both countries have set a target of US\$ 50 billion in trade by 2025.
- ❖ **Defense and Security Cooperation:** Both nations focus on maritime security through joint military exercises and defense agreements. They are

committed to a rules-based order in the Indo-Pacific, ensuring freedom of navigation amid China's growing assertiveness.

- ❖ **Cultural and People-to-People Ties:** Cultural exchanges are growing, with 700,000 Indian tourists visiting Indonesia in 2023. The two countries aim to celebrate 2025 as the Indo-Asean Year of Tourism. India is also assisting in the conservation of Indonesia's Hindu Prambanan and Buddhist Borobudur temples.

The 2025 State Visit: A Turning Point in Bilateral Relations

- ❖ **Key Outcomes:** Indonesian President Prabowo Subianto's state visit in January 2025, where he was the chief guest for India's 76th Republic Day celebrations, marked a milestone. High-level discussions were held on defense, trade, and regional security, and five MOUs were signed, including one on maritime security cooperation.
- ❖ **Strengthening the Partnership:** President Subianto praised Indian leadership and emphasized deepening cooperation, particularly in economic ties and defense collaboration.



Key Areas of Cooperation:

- ❖ **Defense and Security:** Maritime security has emerged as a key area of collaboration, given the strategic importance of the Indo-Pacific region for both nations. India and Indonesia have conducted joint military exercises and are committed to enhancing their defense industry cooperation. Although no agreement on the sale of Brahmos missiles was reached during the visit, both countries expressed an intent to continue

discussions on defense cooperation, focusing on supply chains and technological collaboration.

- ❖ **Economic Cooperation:** The economic ties between India and Indonesia have grown steadily. With bilateral trade projected to reach \$50 billion in the coming years, both nations are working to reduce bureaucratic obstacles and streamline regulations to facilitate trade. While India aims to increase exports to Indonesia, Indonesia has shown interest in Indian investments in sectors like infrastructure, healthcare, and digital transformation.
- ❖ **Multilateral Cooperation:** Both countries recognize the importance of multilateral forums like the G20, ASEAN, and BRICS, where they can collaborate to address common geopolitical challenges. The visit also underscored the growing trilateral cooperation between India, Indonesia, and Australia, aimed at ensuring regional security and stability.

The Future of India-Indonesia Relations:

- ❖ Looking forward, the India-Indonesia partnership is set to grow even stronger, especially given the geopolitical shifts in the Indo-Pacific. Both countries are well-positioned to play a key role in ensuring peace, stability, and prosperity in the region. The creation of the Track 1.5 Dialogue mechanism during President Subianto's visit will provide a platform for deeper engagement between political, business, and academic leaders from both countries.
- ❖ The future of their strategic partnership will depend on continued dialogue, particularly in defense, economic cooperation, and regional security. Both nations must also work towards realizing the full potential of their defense industrial cooperation, which remains an untapped area in their relationship.

Conclusion

India and Indonesia share a long and multifaceted history, marked by periods of both cooperation and divergence. Today, as both countries work to strengthen their ties in defense, trade, and cultural exchange, they are positioning themselves as key partners in the Indo-Pacific region. The strategic importance of their relationship cannot be overstated. The recent state visit of President Prabowo Subianto to India is a testament to the growing commitment on

both sides to deepen bilateral cooperation. As India and Indonesia continue to navigate the complexities of global geopolitics, their enhanced partnership

will have significant implications for regional peace, stability, and economic growth.

India-US Relations Under Trump 2.0: Challenges, Opportunities, and Strategic Realignments

As President Donald Trump embarks on his second term, his bold vision of a “revolution of common sense” promises to reshape America’s domestic and foreign policies. This transformative agenda, aimed at countering “liberal extremism” and bolstering American sovereignty, has significant implications for global relations, including the strategic partnership between India and the United States. India, as a critical ally in the Indo-Pacific and a key trading partner, must carefully navigate the opportunities and challenges arising from Trump’s policies.

A Historical Perspective on India-US Relations:

- ❖ India-US relations have witnessed significant evolution over decades, overcoming historical hesitations to build a strong partnership rooted in shared democratic values and strategic interests:
 - » **Prime Minister Atal Bihari Vajpayee:** Declared the two nations as “natural allies,” emphasizing mutual respect and shared geopolitical goals.
 - » **President Barack Obama:** Termed the partnership as “a defining relationship of the 21st century,” highlighting its global significance.
 - » **Prime Minister Narendra Modi:** In 2016, celebrated the transition from historical hesitations to a dynamic and enduring alliance.
- ❖ These milestones underscore the steady strengthening of ties, with both nations collaborating on trade, technology, defense, and global governance.

India-US Relations Under Trump 1.0: Laying a Strong Foundation

During Trump’s first term (2017–2021), India and the US deepened their strategic partnership through significant initiatives:

- ❖ **Geopolitical Cooperation:**
 - » Revived the Quad Initiative with Japan and Australia, emphasizing a free and open Indo-Pacific region.
 - » Renamed the US Pacific Command to the US Indo-Pacific Command, reflecting India’s strategic role.
- ❖ **Personal Diplomacy:** The close rapport between Trump and Modi, highlighted by events like “Howdy Modi” and “Namaste Trump,” fostered a spirit of mutual cooperation.
- ❖ **Defense and Security:**
 - » Designated India as a Major Defense Partner, enhancing defense collaboration and arms trade.
 - » Strengthened counterterrorism cooperation and intelligence-sharing mechanisms.

Economic and Trade Cooperation: A Pillar of Partnership

Economic ties remained a cornerstone of India-US relations:

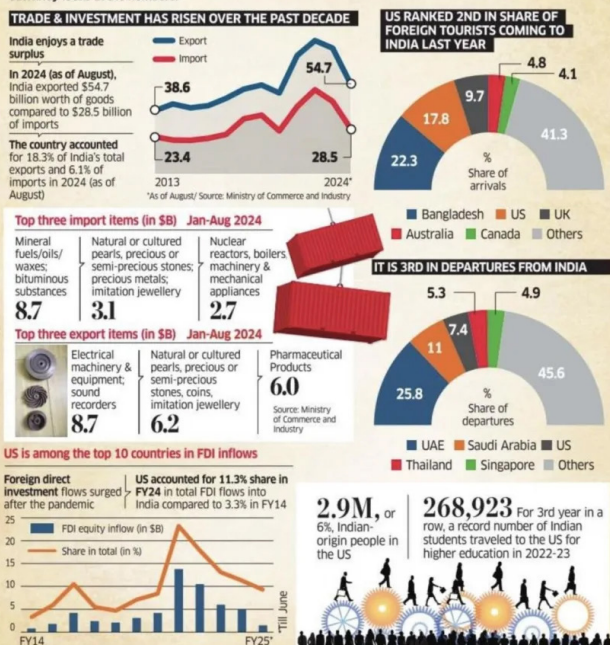
- ❖ **Trade:** The US emerged as India’s biggest trading partner in 2022-23 on account of increasing economic ties between the two countries. According to the provisional data of the Commerce Ministry, the bilateral trade between India and the US increased by 7.65% to US\$ 128.55 billion in 2022-23 as against US\$ 119.48 billion in 2021-22.
- ❖ **Foreign Direct Investment:** U.S.A is the 3rd largest investor in India, with cumulative FDI inflows of US\$ 62.24 billion from April 2000-September 2023. In 2023, the U.S. Embassy and Consulates in India processed a record-smashing 1.4 million U.S. visas. Demand across all visa classes was unprecedented, with a 60% increase in applications compared to 2022.
- ❖ **Technological Advancement:**
 - » India’s elevation to Strategic Trade

Authorization Tier 1 status in 2018 allowed license-free access to critical US technologies.

- » Collaborations in sectors like clean energy, blockchain, cyber sciences, and space exploration reflect a growing technological partnership.

India-US Ties: What Numbers Show

The broad direction of India's relationship with the US is unlikely to see any major shift even if there is a change in the current political dispensation there. While a Harris win could be expected to ensure continuity in ties as seen under the Biden administration, a Trump victory could briefly witness some trade issues and immigration coming into the picture in the initial days. India enjoys a close relationship with the US that covers trade, investment and more. Besides, the US is home to a sizable Indian-origin population. Anoushka Sawhney looks at the numbers.



Trump 2.0: A Vision for Transformation

In his inaugural address for a second term, President Trump outlined an ambitious domestic and international agenda, signaling shifts that will impact global relations:

- ❖ **Economic Revival:** Focused on reducing inflation, promoting energy independence, and expanding domestic manufacturing.
 - » Announced the creation of an External Revenue Service to tax imports, complementing the Internal Revenue Service, with the goal of boosting American industries.
- ❖ **Foreign Policy Realignment:** Emphasized "America First," prioritizing border security over foreign conflicts.
 - » Adopted a transactional approach to alliances, focusing on economic and strategic gains.
- ❖ **Social and Political Transformation:** Pledged to

reverse liberal policies on free speech, identity politics, and environmental mandates, aiming to restore traditional American values.

India-US Relations under Trump 2.0: Opportunities and Challenges

India's relationship with the US under Trump's second term is poised to evolve, with potential benefits and hurdles:

Opportunities

- ❖ **Strategic Collaboration:** Continued focus on the Indo-Pacific region aligns with India's strategic interests, particularly in countering China's influence. The Quad Initiative is likely to gain momentum, enhancing regional security and cooperation.
- ❖ **Technological Innovation:** Joint ventures in emerging technologies such as clean energy, artificial intelligence, and advanced manufacturing can bolster India's innovation ecosystem. Collaboration in space exploration and health security opens new avenues for bilateral engagement.
- ❖ **Economic Gains:** While Trump's protectionist policies pose challenges, India could benefit from the reorientation of global supply chains, particularly as companies look to diversify away from China.

Challenges

- ❖ **Trade and Tariff Policies:** Trump's emphasis on taxing imports to promote domestic industries could adversely affect India's exports to the US. The transactional nature of Trump's trade policies demands meticulous negotiations to avoid unfavorable terms.
- ❖ **Immigration Policies:** Restrictive visa regimes, particularly for H-1B holders, could impact India's IT sector and skilled professionals working in the US.
- ❖ **Strategic Autonomy:** India must balance its growing partnership with the US while maintaining independence in foreign policy, particularly concerning its relations with Russia and other global powers.
- ❖ **Market Uncertainty:** Indian markets remain cautious as Trump's economic policies unfold, with potential impacts on the rupee-dollar exchange rate and investment flows.

A Transformative Foreign Policy Approach:

Trump's foreign policy in his second term reflects an assertive and transactional stance:

- ❖ **Focus on Strategic Interests:**
 - » Prioritizing defense of US borders and national interests over distant conflicts.
 - » Emphasizing fair trade and reciprocity rather than multilateralism and liberal internationalism.
- ❖ **Global Implications:**
 - » Trump's policies on the Indo-Pacific, Eurasia, and the Gulf of Mexico (renamed as the "Gulf of America") could redefine power dynamics.
 - » His emphasis on being a "peacemaker" signals a reluctance to engage in extended conflicts, which may influence India's strategic

calculations.

Conclusion:

India-US relations under Trump 2.0 represent a mix of opportunities and challenges. While shared interests in trade, technology, and defense provide a strong foundation, the transactional nature of Trump's policies requires India to adopt a proactive and balanced approach. By leveraging its strategic strengths, addressing domestic reforms, and maintaining strategic autonomy, India can sustain and enhance its partnership with the US in this transformative era. As the global order continues to shift, the India-US alliance will play a pivotal role in shaping regional and global dynamics, ensuring stability and progress in an increasingly complex world.

India-Taliban Relations: India in Afghan Geopolitics

India's engagement with the Taliban, especially after their return to power in 2021, marks a significant shift in South Asian geopolitics. As global powers grappled with Afghanistan's new regime, India adopted a pragmatic approach to balance humanitarian concerns with regional interests. India's diplomatic recalibration was not merely a response to the Taliban's return to power but also a reflection of India's broader regional aspirations and its need to maintain influence in a rapidly changing neighborhood. The recent meeting between Indian Foreign Secretary Vikram Misri and Taliban Foreign Minister Amir Khan Muttaqi in January 2025 signals a new phase in India's foreign policy.

Background: The Taliban's Return to Power

- ❖ The Taliban's resurgence in Afghanistan in August 2021, after the U.S. withdrawal, marked a crucial moment in South Asian geopolitics. As the Taliban quickly re-established control, countries, including India, were forced to reconsider their diplomatic stances. While India refrained from formally recognizing the Taliban, it acknowledged the need to engage strategically with the regime to protect its interests and address Afghanistan's humanitarian challenges.
- ❖ India initially withdrew its diplomatic mission following the Taliban's return but re-established

a technical presence at its embassy in Kabul in 2022. This cautious engagement allows India to safeguard its strategic interests while contributing to Afghanistan's humanitarian needs.



Geopolitical Dynamics and Pakistan's Role:

- ❖ India's engagement with Afghanistan is intricately linked to the tensions between Kabul and Islamabad. The Taliban's support for the Tehrik-e-Taliban Pakistan (TTP), a militant group that seeks to establish Pashtun nationalism in Pakistan's tribal areas, has exacerbated tensions between Afghanistan and Pakistan. Pakistan's airstrikes

in Afghanistan targeting TTP camps have been condemned by both Kabul and India, intensifying the already volatile security situation in the region.

- ❖ The Taliban's ties with the TTP, alongside the presence of over 6,000 TTP fighters operating from Afghan soil, complicate Pakistan's security landscape. This situation is particularly ironic given Pakistan's historical role in supporting the Taliban during the Soviet occupation of Afghanistan. The presence of these insurgent groups, combined with the Taliban's ties to al-Qaeda, heightens the regional security threat and undermines stability.

India's Strategic Approach to the Taliban:

- ❖ India's approach to Afghanistan is shaped by a combination of humanitarian and geopolitical interests. While the Taliban regime seeks international recognition, India remains focused on its broader regional goals.
- ❖ **Humanitarian Assistance:** India has been a significant provider of humanitarian aid to Afghanistan. Its assistance has included medicines and vaccines for COVID-19, polio, and tuberculosis, along with winter clothing, hygiene kits, and essential food supplies. In the 2024-25 Union Budget, India allocated ₹200 crore for Afghanistan's humanitarian assistance, underscoring its commitment to supporting the Afghan people. Furthermore, following the Misri-Muttaqi dialogue, India has pledged additional support for Afghanistan's health sector and refugee rehabilitation.
- ❖ **Leveraging Regional Partnerships:** India's regional strategy also involves partnerships with neighboring countries. One notable collaboration is with Iran, particularly through the Chabahar Port, which provides India with a strategic route to deliver aid and trade to Afghanistan, bypassing Pakistan. This partnership not only enhances India's influence in Afghanistan but also opens avenues for broader regional mediation, with Iran holding significant sway over Kabul.
- ❖ **Cultural Diplomacy and Soft Power:** India's cultural diplomacy plays a key role in its engagement with Afghanistan. The growing popularity of cricket in Afghanistan has created opportunities for India to connect with Afghan youth, particularly through the Indian Premier League (IPL), where Afghan players like Rashid Khan have made their mark. Additionally, India has continued to support Afghan students, granting over 3,000 scholarships through the Indian Council for Cultural Relations (ICCR) since 2021. These initiatives strengthen people-to-people ties and enhance India's soft power in the region.

Challenges and Opportunities:

While India's engagement with the Taliban presents several opportunities, it is not without challenges.

❖ Challenges

- » **Regional Security Concerns:** The presence of terrorist groups like al-Qaeda, TTP, and ISKP remains a major challenge. These organizations threaten regional stability and complicate India's diplomatic efforts.
- » **Pakistan's Influence:** Pakistan's support for militant groups, including the Taliban, continues to destabilize the region, especially with tensions surrounding the Durand Line, a colonial-era boundary rejected by the Taliban.
- » **Internal Taliban Policies:** The Taliban's treatment of minorities, its human rights record, and its strict interpretation of Islamic law are contentious issues. These policies have drawn global criticism, making international engagement difficult for many countries, including India.

❖ Opportunities:

- » **Strengthening Traditional Ties:** Afghanistan and India share historical, cultural, and economic ties. India can leverage these connections to rebuild and strengthen its relationship with Afghanistan through development projects and humanitarian aid.
- » **Promoting Regional Stability:** By engaging constructively with the Taliban, India has an opportunity to contribute to regional stability and counterbalance the influence of Pakistan and China in Afghanistan.
- » **Expanding "Act West" Policy:** Afghanistan's strategic location makes it an important component of India's "Act West" policy, which aims to strengthen India's relations with West Asia and Central Asia. Integrating Afghanistan into this policy enhances India's

regional presence and influence.

India's Investments in Afghanistan's Infrastructure:

India has made significant investments in Afghanistan's infrastructure, demonstrating its long-term commitment to the country's development. Key projects include:

- ❖ **Salma Dam:** Known as the Afghan-India Friendship Dam, this project, inaugurated in 2016, enhances Afghanistan's power generation capacity and fosters regional cooperation.
- ❖ **Zaranj-Delaram Highway:** Built by India's Border Roads Organization, this highway connects Afghanistan to Iran's Chabahar Port, providing a vital trade route that bypasses Pakistan. This infrastructure project is key to enhancing Afghanistan's connectivity with global markets.

Why India's Engagement with Afghanistan is Important:

- ❖ **Geopolitical Interests:** India seeks to maintain its influence in Afghanistan to counterbalance Pakistan's role in the region and to secure access to Central Asia, a region of growing economic and geopolitical importance.
- ❖ **Regional Stability:** India is concerned about the instability in Afghanistan spilling over into

the broader South Asian region. The resurgence of the Taliban and the ongoing insurgencies in Pakistan highlight the region's fragile security situation.

- ❖ **Securing Investments:** India has heavily invested in infrastructure and development projects in Afghanistan, and it is crucial for India to safeguard these investments to secure its long-term interests in the region.

Conclusion:

India's engagement with the Taliban is a pragmatic response to a complex geopolitical situation. While the country has refrained from formally recognizing the Taliban, its multifaceted approach—focused on humanitarian assistance, regional partnerships, and cultural diplomacy—reflects India's commitment to Afghanistan's welfare and its strategic interests in the region. Despite the challenges posed by terrorist groups, Pakistan's influence, and the Taliban's controversial internal policies, India's proactive diplomacy offers a framework for constructive engagement in an increasingly volatile environment. By balancing humanitarian aid with geopolitical considerations, India seeks to contribute to regional stability while preserving its interests and strengthening its influence in Afghanistan.

Short Issues

Birthright Citizenship

Why in News:

President Donald Trump recently issued an executive order aiming to limit birthright citizenship. This order was temporarily blocked by a federal judge citing a violation of the 14th Amendment, which guarantees citizenship to all individuals born on US soil.

History of Birthright Citizenship in the US:

- Initially, after the US gained independence, citizenship was determined by state laws, but there was a general understanding that children born in US territory were citizens. The US Constitution (1788) acknowledged "natural born citizens" but did not define it clearly.
- Over time, the 14th Amendment (1866) granted

citizenship to all born or naturalized in the US. The Dred Scott decision (1857), which excluded slaves and their descendants from citizenship, was rectified by this amendment.

- **Supreme Court's Role:** The 14th Amendment sparked debates, particularly regarding the phrase "subject to the jurisdiction" of the US.
- The 1898 SCOTUS case (United States v. Wong Kim Ark) clarified that even children of Chinese immigrants were entitled to citizenship, affirming that being born on US soil suffices for citizenship. This ruling has stood as the law of the land.
- **Impact of Supreme Court Rulings:** The Plyler v. Doe (1982) case further reinforced that children of undocumented immigrants were entitled to education, asserting their citizenship rights under the 14th Amendment, regardless of their parents'

legal status.

Birthright Citizenship in India:

- The concept of birthright citizenship was debated during India's independence. B R Ambedkar and Sardar Patel supported birthright citizenship, which was enshrined in Article 5 of the Indian Constitution and later codified in the Citizenship Act, 1955.
- However, in 1986, Parliament amended the Act to address the entry of migrants from "Bangladesh, Sri Lanka and some African Countries".
- All children born after the Amendment came into force would only become citizens if either of the parents were Indian citizens, marking the end of birthright citizenship in India.
- In 2003, the Act was amended again to effectively state that a child would not become a citizen at birth if one of her parents was an illegal immigrant when she was born.

Impact of the End of U.S. Birthright Citizenship on India:

- **Shift in Immigration Preferences:** The policy change may lead Indian professionals and students to reconsider the U.S. as a destination, potentially opting for countries with more immigration-friendly policies, such as Canada and Australia.
- **Challenges for H-1B Visa Holders:** Indian professionals working in the U.S. on H-1B visas, as well as those awaiting Green Cards (permanent residency), will no longer have the assurance that their U.S.-born children will automatically become citizens.
- **Temporary Visa Holders:** Indian students—who form one of the largest groups of international students in the U.S.—and families on temporary visas will face additional hurdles in securing citizenship for children born on U.S. soil.
- **"Birth Tourism":** The move might prevent foreign nationals from traveling to the U.S. solely to give birth, ensuring their children gain citizenship by birthright.

Conclusion:

The birthright citizenship debate in both the US and India highlights ongoing concerns about immigration, legal status and national identity, with historical rulings continuing to shape policies today.

India and France Relationship

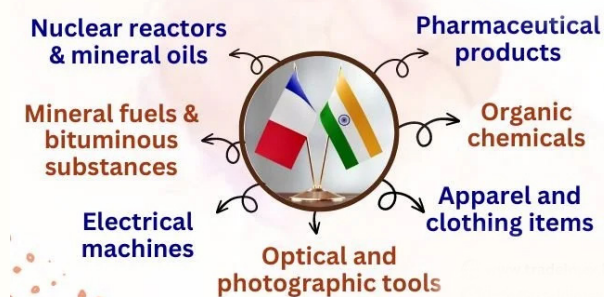
Why in News:

India and France recently agreed to enhance their partnership in high-end technology sectors during the bilateral meeting to review the India-France Horizon 2047 Roadmap. High end technologies refer to complex and Industrial 4.0 technologies such as defence, civil nuclear energy, space, cyber and digital technologies, artificial intelligence (AI).

About India-France Horizon 2047 Roadmap:

- The 'Horizon 2047' Roadmap is a strategic initiative that outlines India's long-term vision for the next two decades.
- It focuses on strengthening global partnerships in three key areas: security and sovereignty, sustainability, and people-to-people connections, with the aim of making India a global leader by 2047.
- The Horizon 2047 Roadmap was unveiled during a meeting between Modi and French President Emmanuel Macron in Paris in July 2023 with the aim of boosting bilateral ties in areas ranging from trade and investment to strategic cooperation.

MAJOR TRADE ITEMS BETWEEN INDIA & FRANCE



About India and France relationship:

- Diplomatic relations between India and France were established shortly after India gained independence in 1947, paving the way for bilateral cooperation across multiple sectors.
- France is India's second-largest arms supplier, accounting for 33% of India's defense imports, according to the Stockholm International Peace Research Institute (SIPRI). Key projects include the purchase of Rafale aircraft and the P-75 Scorpene submarine project.

» **Rafale Aircraft Purchases:** India has

purchased Rafale jets, enhancing its air defense capabilities.

- » **P-75 Scorpene Project:** This involves the construction of advanced Scorpene submarines for India's naval forces.
- » **Maintenance Repair and Overhaul (MRO) facilities:** These will focus on advanced aviation propulsion (LEAP) and Rafale engine maintenance.

Key military exercises between India and France:

- **Bilateral Exercises:** Notable exercises include VARUNA (naval exercises) and FRINJEX-23 (joint military exercises).
- **Multilateral Exercises:** France participates in multilateral exercises such as La Perouse and ORION in collaboration with India and other international partners.

About India-France Indo-Pacific Roadmap:

- The India-France Indo-Pacific Roadmap, released in 2023, broadens bilateral cooperation from the Indian Ocean Region (IOR) to include the entire Indo-Pacific region. This aims to strengthen strategic partnerships and ensure stability and security in the region.

How do India and France collaborate in space?

- France is a key supplier of components for India's space program. The two countries have also agreed to collaborate on future launch vehicles and the TRISHNA Earth Observation mission, expanding their cooperation in space exploration and technology.

About economic cooperation between India and France:

France is one of the largest investors in India, with an FDI inflow of \$659.77 million for FY 2022-23. Notable economic projects include:

- Tata Group and Airbus collaborating on manufacturing civilian helicopters.
- CFM International securing an agreement with India's Akasa Air for the purchase of over 300 LEAP-1B engines.

Digital cooperation between India and France:

- **Unified Payments Interface (UPI):** France launched UPI at the Eiffel Tower, enabling secure and convenient transactions for Indian visitors and NRIs.
- **Supercomputing:** French companies have

developed 14 supercomputers, including Param Siddhi, India's fastest supercomputer at 4.6 petaflops per second.

Multilateral cooperation:

- France has consistently supported India's bid for a permanent seat on the United Nations Security Council (UNSC) and its positions on Kashmir and terrorism at international forums like the United Nations and the Financial Action Task Force (FATF).
- Additionally, France played a crucial role in India's accession to the Missile Technology Control Regime (MTCR), Wassenaar Arrangement (WA), and Australia Group (AG).

Challenges between India-France relations:

- **Bilateral Trade:** While trade is growing, it stood at US\$15.8 billion in 2022, still underperforming compared to other global partnerships.
- **Visa Restrictions:** Increased visa restrictions have been a point of frustration for Indian correspondents in France.
- **Nuclear Agreement Delay:** The Jaitapur nuclear power project faces delays due to technical, financial, and civil nuclear liability issues.
- **Strategic Autonomy Differences:** India's policy of non-alignment contrasts with France's more pragmatic approach to balancing power in the Indo-Pacific region, particularly regarding China's growing influence, presenting a challenge for aligning strategic objectives.

India-EU Trade Talks: A Step towards Strengthening Economic Ties

Why in News:

Commerce and Industry Minister Piyush Goyal recently held discussions with European Commissioner for Trade and Economic Security, Maros Sefcovic, with a focus on critical areas such as the development of advanced technologies, securing critical raw material supply chains, and progressing the Free Trade Agreement (FTA) negotiations. This marks a significant step in enhancing India-EU economic relations.

Areas of Collaboration between India and the EU

- India is poised to collaborate with the EU on several strategic fronts to enhance trade and technological

growth. The primary objectives include:

- » **Developing Advanced Technologies:** Both India and the EU are committed to driving mutual growth through the development of cutting-edge technologies in sectors such as digital innovation, manufacturing, and industrial technologies.
- » **Securing Raw Material Supply Chains:** Another focal point of the discussions is ensuring a steady and secure supply of critical raw materials. These materials are essential for industries like energy, electronics, and defense, with a goal of reducing dependence on non-market economies.
- » **Free Trade Agreement (FTA):** Both sides have expressed a commitment to advancing FTA talks, aiming to address existing trade barriers and simplify processes, thereby making it easier for businesses to operate across both regions.
- These discussions take place at a time when global supply chains are under strain, prompting countries to find ways to reduce vulnerabilities and build a more resilient and diversified trade network.

Key Areas of Economic Cooperation between India and the EU

- **Trade:** European Union (EU) is one of the largest trading partners of India with bilateral trade estimated at over US\$180 billion in 2023-2024. India ranks as the EU's 10th largest trading partner, highlighting the importance of this relationship for both sides.
- **Investment:** EU is a significant source of Foreign Direct Investment, with total FDI estimated at US\$ 117.34 billion. Indian companies, such as the Tata Group, have a notable presence in the EU, particularly in countries like France and Italy.
- **Infrastructure Development:** The EU has played a key role in supporting India's infrastructure modernization. The EU has financed several projects in sectors like energy, transportation, and other critical infrastructure, further deepening economic ties between the two regions.

About the European Union (EU):

- The European Union (EU) is a political and economic union comprising 27 member states, primarily located in Europe.
- It was established by the Maastricht Treaty, which

came into force on November 1, 1993, with the goal of promoting cooperation and integration among its members to foster economic and political stability in Europe.

- The EU uses the Euro as its common currency, which is adopted by 19 of its member states.
- It also operates a single market, allowing the free movement of goods, services, and capital across its member countries.

BRICS Bloc

Why in News:

Nigeria has been officially admitted as a "partner country" of the BRICS bloc, which now includes nine partner nations alongside its full-time members.

About BRICS Bloc:

- BRICS was formally established in 2009, initially as BRIC (Brazil, Russia, India, and China). South Africa joined in 2010, forming BRICS. The group represents more than 25% of the global economy and nearly 45% of the world's population.
- **Headquarters:** BRICS does not have a permanent headquarters but operates on a rotational presidency.
- **Full-Time Members:** The bloc consists of Brazil, Russia, India, China, South Africa, Iran, Egypt, Ethiopia, United Arab Emirates, and Indonesia.
 - » In 2023, BRICS expanded to include Iran, Egypt, Ethiopia, and the United Arab Emirates. Saudi Arabia has been invited but has not yet joined.
 - » Indonesia joined as a full member in 2025.
- **Partner Nations:** Partner nations include Nigeria, Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Thailand, Uganda, and Uzbekistan.

Evolution:

- **2006:** Formed during a G8 Outreach Summit.
- **2009:** First BRIC summit held in Yekaterinburg, Russia.
- **2010:** South Africa joined, making it BRICS.
- **2014:** The New Development Bank (NDB) was established at the Fortaleza Summit.

Functions:

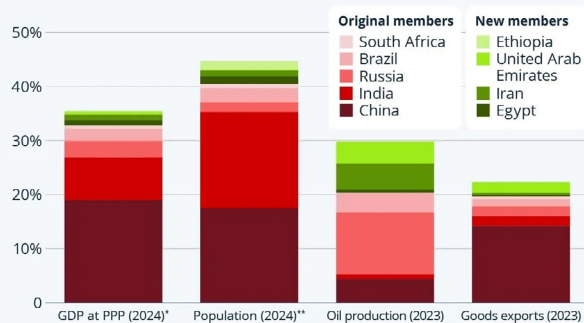
- **Economic Cooperation:** Promote trade and investment among member nations.
- **Global Governance Reform:** Advocate for fairer representation in global institutions like the UN

and IMF.

- **Development Projects:** Fund infrastructure and sustainable development initiatives through the NDB.
- **South-South Cooperation:** Strengthen alliances among developing nations to address global challenges collectively.

The Global Clout of the New BRICS

BRICS countries' share of global GDP, population, oil production and goods exports



* IMF estimates as of April 2024 ** UN estimates, medium variant
Sources: IMF, UN Population Division, Energy Institute, WTO

Initiatives of BRICS:

- **Contingent Reserve Arrangement (CRA):** A financial mechanism providing up to \$100 billion for liquidity support to member countries facing balance of payments difficulties.
- **New Development Bank (NDB):** Mobilizes resources for infrastructure and sustainable development in emerging markets, with \$32.8 billion committed to 96 projects.
- **BRICS Payment System:** Developing an alternative to SWIFT to reduce dependence on the dollar-based payment system.

Importance of BRICS for India:

- **Geo-Politics:** BRICS offers India a platform to balance its strategic interests between the U.S. and the Russia-China axis, playing a key role in global geopolitical dynamics.
- **Global Economic Order:** BRICS countries share a common objective of reforming the international financial system, advocating for a fairer, more balanced global economic order, which helps India in shaping global policies.
- **Voice of Developing Nations:** BRICS represents the voice of the Global South, offering India an opportunity to protect the rights of developing

countries amidst challenges from western policies on issues like trade and climate change.

- **Counter-Terrorism Cooperation:** BRICS serves as a platform for India to enhance its efforts against terrorism, providing a forum for discussions on counter-terrorism strategies and working towards stronger global actions.
- **Global Grouping and Diplomatic Engagement:** As India pursues UNSC and NSG membership, BRICS offers a space for engaging with China, resolving disputes, and garnering support from other member nations in its global diplomatic goals.

Russia and Iran Sign Comprehensive Partnership Treaty

Why in News:

Russian President Vladimir Putin and Iranian President Masoud Pezeshkian recently signed a landmark agreement—the Iranian–Russian Treaty on Comprehensive Strategic Partnership.

- This treaty marks a significant shift in the geopolitical landscape, signaling a deepening of relations between Russia and Iran. It outlines a 20-year partnership designed to foster collaboration in defense, energy, technology, and counterterrorism, among other critical areas.

Key provisions of the treaty include:

- **Economic Cooperation:** The treaty focuses on boosting bilateral trade, which has already seen a 15.5% increase to \$3.77 billion in 2024. Both countries aim to expand trade in energy, finance, and technology, strengthening their economic partnership.
- **Defense and Military Collaboration:** Russia and Iran are strengthening military ties, including joint counterterrorism operations, intelligence sharing, and defense technology exchanges.
- **Cybersecurity and Technology:** Both countries commit to enhanced cooperation in information technology, cybersecurity, and the development of peaceful nuclear energy.
- **Regional and Global Cooperation:** The treaty covers broader regional security issues, with an emphasis on countering terrorism and addressing challenges such as organized crime and money laundering.

- **Cultural Exchange and Diplomacy:** A section of the treaty also focuses on expanding cultural and diplomatic ties between Russia and Iran, promoting mutual understanding and cooperation in various non-political spheres.

Global Implications:

- **Impact on US Sanctions:** One of the primary motivations for this treaty is the desire to mitigate the economic and political effects of US sanctions on both Russia and Iran. The treaty allows the two nations to circumvent sanctions and enhance their economic resilience by bolstering trade and energy exchanges, particularly in sectors where both countries are heavily reliant on external cooperation.
- **Shifting Alliances in the Middle East:** This treaty could alter the power dynamics in the Middle East. As both countries are key players in the region, particularly in Syria, this agreement could embolden their efforts to counter Western influence, particularly that of the United States and its allies in the region.
- **Energy and Technology Spheres:** Iran and Russia are both energy-rich nations, and their growing collaboration in the energy sector, particularly oil and gas, could disrupt global energy markets.
 - » Furthermore, the cooperation in technology and cybersecurity will allow both countries to develop more advanced technological infrastructures, potentially making them less dependent on Western technologies and increasing their influence in the global tech landscape.
- **Regional Security Dynamics:** The treaty's emphasis on defense and counterterrorism has significant implications for the regional security architecture, particularly in relation to their joint efforts in Syria and other conflict zones. Their cooperation in countering terrorism and regional instability could have ripple effects on neighboring countries and international efforts to stabilize the region.
- **Balancing Global Power:** This strategic partnership might also signal the rise of a new geopolitical axis, with Russia and Iran positioning themselves as influential players on the world stage. The treaty could lead to increased cooperation with other non-Western powers, such as China, further reshaping global alliances and

contributing to a shift in the balance of power.

Indonesia Joined the BRICS Group

Why in News:

Indonesia has formally joined the BRICS group, expanding the coalition of emerging economies that includes Russia, China, Brazil, India, and South Africa.

Reasons behind joining this group:

- **Strengthening Global Influence:** Indonesia joined BRICS to enhance its global governance role, as the group represents a significant portion of the world's population and economic power.
- **Economic Growth and Trade Opportunities:** BRICS offers Indonesia expanded trade relationships and improved access to markets, investments, and infrastructure development through increased economic cooperation within the group.
- **De-dollarisation Efforts:** As part of BRICS, Indonesia benefits from efforts to reduce reliance on the US dollar and explore alternative trading mechanisms and currencies, strengthening its economic sovereignty.
- **Reforming Global Institutions:** Indonesia aligns with BRICS in advocating for reforming global institutions like the IMF and World Bank, aiming for a more inclusive and fair global economic order.
- **Global South Cooperation:** Indonesia's membership emphasizes its commitment to working with other developing nations in the Global South, contributing to a collective voice for the needs of emerging economies.
- **Multilateralism and Diplomacy:** BRICS membership aligns with Indonesia's foreign policy, supporting multilateralism and cooperation on global issues such as climate change, poverty, and security.

Significance of BRICS:

- BRICS holds significant economic power, contributing 35% of the world's GDP and comprising 46% of the global population, fostering trade and investment among developing nations. It serves as an alternative to Western influence, providing a platform for emerging economies to reduce reliance on the US and Europe and promote a more balanced global system.

- A key goal is reducing dependence on the US dollar by promoting local currencies in trade, strengthening member economies, and reducing financial vulnerabilities. BRICS also advocates for fairer global policies, pushing for stronger representation of developing nations in global organizations like the UN and IMF.
- Cooperation extends to technology, infrastructure, and environmental protection, with members collaborating on climate change and healthcare challenges. Energy security is another priority, as BRICS nations are key producers and consumers of energy, working together to ensure stable and affordable supplies. By emphasizing global cooperation, BRICS promotes collective problem-solving over unilateral actions.

Challenges Faced by BRICS:

- Diverse economic interests create conflicting priorities, with China and India focused on manufacturing, while Brazil and Russia rely on natural resources. Political differences, including China-India border tensions and Russia's disputes with the West, make it difficult to maintain a unified stance.
- Geopolitical conflicts further complicate decision-making, as rivalries within BRICS and external alliances, such as India's ties with the US, impact cohesion. Additionally, BRICS economies remain dependent on global trade, making it challenging to reduce reliance on Western markets and shift away from the US dollar.
- Despite these challenges, BRICS continues to shape the global economy, pushing for a more inclusive and multipolar world order.

Main initiatives of BRICS:

BRICS has launched several key initiatives:

- **New Development Bank (NDB):** A global financial institution aimed at providing loans for development projects.
- **BRICS Contingent Reserve Arrangement:** A \$100 billion fund to assist member states during financial crises.
- **BRICS Pay:** A digital payment system for facilitating trade among members.
- **BRICS Basket Reserve Currency:** A proposed alternative to the dominance of the US dollar in international trade.

First high-level diplomatic talks between India and Afghanistan

Why in News:

India and the Taliban recently held their first high-level diplomatic talks since the Taliban took control of Afghanistan in 2021. Foreign Secretary Vikram Misri met with Afghanistan's acting Foreign Minister, Amir Khan Muttaqi, in Dubai. This meeting marked a shift from previous lower-level engagements, signaling an upgrade in India-Afghanistan relations. The talks focused on critical issues such as security, humanitarian aid, and trade via Iran's Chabahar port.

What issues were discussed in the Meeting?

- **Security Concerns:** India raised concerns about Afghanistan potentially being used by anti-India terror groups. The Taliban assured India it would address these security threats.
- **Humanitarian Assistance:** India confirmed its commitment to providing essential aid, including food, medicines, and vaccines. The Afghan side appreciated India's previous shipments, which included wheat and earthquake relief materials.
- **Development Projects:** The two sides discussed India's involvement in future development projects to help meet Afghanistan's urgent needs.
- **Trade via Chabahar Port:** The use of Iran's Chabahar port for trade was highlighted as a vital step for regional connectivity. India has been granted a reprieve from US sanctions on this port, facilitating trade with Afghanistan.
- **Sports Cooperation:** The discussion also touched on strengthening cricketing ties, with India supporting Afghan cricketers by providing training facilities.

What is India doing for Afghanistan?

India has been actively involved in aiding Afghanistan through humanitarian support and development initiatives:

- **Humanitarian Assistance:** India has sent shipments of essential supplies, such as wheat, medicines, and winter clothing.
- **Health Sector Support:** India plans to further aid the health sector, including providing medical resources.
- **Refugee Rehabilitation:** India is assisting in the rehabilitation of Afghan refugees, especially those

returning from Pakistan.

- **Development Initiatives:** India is exploring the possibility of engaging in long-term development projects in Afghanistan.

Importance of Afghanistan for India

Afghanistan holds significant importance for India for various reasons:

- **Geopolitical Considerations:** Afghanistan's strategic location, bordering Pakistan, Iran, and Central Asia, is crucial for India's security and counterterrorism strategy.
- **Trade and Connectivity:** India's use of Chabahar port enhances trade ties with Afghanistan and Central Asia, bypassing Pakistan.
- **People-to-People Ties:** India shares deep cultural and historical ties with Afghanistan, which is important for India's influence in the region.

Challenges before India:

India faces several challenges in dealing with the Taliban-led Afghanistan:

- **Security Risks:** Ensuring that Afghanistan does not become a haven for anti-India terror groups is a major concern for India.
- **Political Sensitivities:** India's engagement with the Taliban is sensitive, given concerns over human rights, particularly regarding women and minorities.
- **Regional Dynamics:** India must navigate complex relations with neighboring countries like Pakistan and Iran while engaging with the Taliban.
- **Sanctions Risk:** Although India has been exempted from US sanctions on Chabahar, there is still a risk of future sanctions, particularly with the shifting US political landscape.

India-U.S. Sonobuoy Co-Manufacturing Partnership

Why in News:

India and the United States have launched a historic partnership to co-manufacture U.S. sonobuoys, a critical technology used for undersea domain awareness (UDA) to detect submarines in deep oceans. This move comes amid growing concerns about China's expanding naval presence in the Indian Ocean Region.

About Sonobuoys:

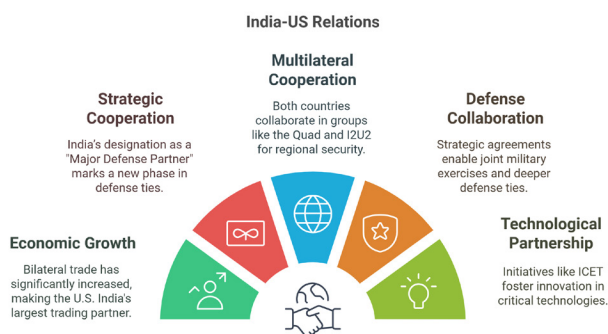
- Sonobuoys are buoy-based devices that detect

submarines through acoustic signals. They play a vital role in undersea warfare, enabling the tracking and neutralizing of submarines.

- These devices are deployed from aircraft such as maritime patrol planes, helicopters, or UAVs, conducting wide-area searches that are crucial for naval defense operations.

Key Players:

- The co-manufacturing initiative involves Ultra Maritime, a U.S. leader in undersea warfare technologies, and Bharat Dynamics Limited (BDL), a state-owned Indian defense company. Ultra Maritime will provide expertise in sonobuoy design and production, while BDL will handle manufacturing and delivery within India.



iCET (Initiative on Critical and Emerging Technologies)

- This collaboration is a significant step under the U.S.-India Initiative on Critical and Emerging Technologies (iCET), launched in January 2023. The initiative focuses on fostering collaboration between the two countries in advanced technologies, especially in defense sectors like undersea domain awareness.

Significance for India:

- The partnership strengthens India's naval capabilities, allowing the Indian Navy to enhance its surveillance and detection abilities in the increasingly contested Indian Ocean Region.
- The sonobuoys produced in India will also be interoperable with U.S. Navy platforms and those of allied forces, including Australia and Japan.
- This interoperability promotes a strong defense ecosystem and strengthens India's strategic position in the Indo-Pacific, ensuring regional stability and maritime security.

India-U.S. Defense Relations: A Strong

Foundation

The strategic defense relationship between India and the U.S. has evolved significantly over the years:

- **2005:** India and the U.S. initiated strategic dialogues, marking the beginning of deeper engagement.
- **2016:** India was designated a "Major Defense Partner," granting access to advanced technologies.
- **2018:** India received Strategic Trade Authorization Tier 1 (STA-1) status, facilitating easier access to U.S. military technology.
- **2018:** The establishment of the 2+2 Ministerial Dialogue further strengthened strategic cooperation.
- **2019:** The first tri-service exercise, "Tiger Triumph," took place, alongside the signing of the Industrial Security Annex (ISA) to allow U.S. companies to participate in India's defense production.
- **2021-2022:** India and the U.S. made progress on major defense deals, including acquiring MQ-9B drones and F-414 fighter jet engines.
- **2023:** The India-U.S. Defense Acceleration Ecosystem (INDUS-X) was launched to foster collaboration among defense companies, investors, and research institutions.

Conclusion:

The co-manufacturing of sonobuoys marks a key milestone in the growing India-U.S. defense collaboration, enhancing India's strategic maritime capabilities and fostering a robust defense ecosystem in the Indo-Pacific region

First India-Malaysia Security Dialogue

Why in News:

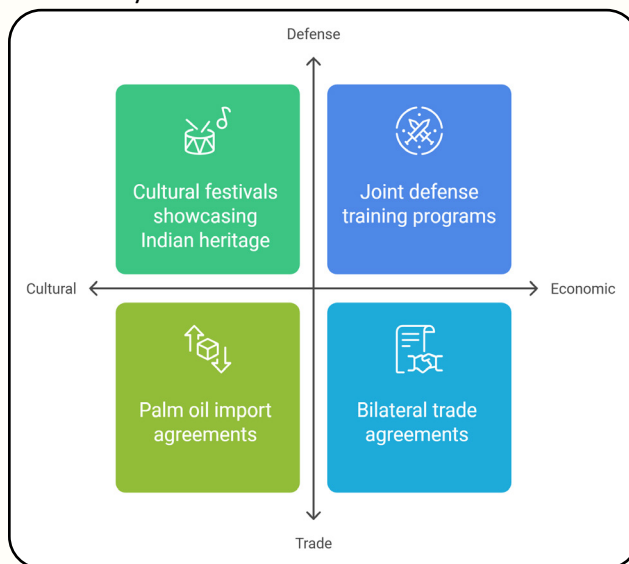
The first-ever India-Malaysia Security Dialogue was recently co-chaired by India's National Security Adviser Ajit Doval and Malaysia's National Security Council Director General, Raja Dato Nushirwan Bin Zainal Abidin. This dialogue marks a significant milestone in bilateral security cooperation, addressing shared global and regional challenges, including counter-terrorism, maritime security, and strategic issues.

Focus Areas of the dialogue:

- The dialogue centered on strengthening cooperation in counter-terrorism and deradicalisation, acknowledging the rising threat

of terrorism in the region.

- Both nations committed to collaborative measures to combat this menace. Securing maritime routes and enhancing maritime security, critical for trade and regional stability, also featured prominently.
- This security dialogue is expected to bolster defense, economic, and technological cooperation, significantly contributing to regional peace and stability.



About India-Malaysia Relations:

- Diplomatic relations between India and Malaysia were established in 1957. Over the years, ties have strengthened across trade, defense, and cultural sectors.
- **Economic Ties:** In FY 2023-24, bilateral trade reached \$20.01 billion, making Malaysia India's 16th largest trading partner. Key initiatives like the Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA), trade in local currencies, and central bank partnerships have enhanced these ties.
- **Oil Palm Diplomacy:** Malaysia supplies a substantial portion of India's palm oil imports, amounting to three million metric tonnes annually. It also supports India's National Mission on Edible Oils through R&D and seed supplies.
- **Defense Cooperation:** Joint ventures, procurement, and training underscore defense ties. The Malaysia-India Defence Cooperation Committee (MIDCOM) holds annual meetings, and Hindustan Aeronautics Limited (HAL) established its first regional office in Kuala Lumpur in 2023.

- **People-to-People Connect:** Malaysia is home to over two million people of Indian origin, fostering cultural, social, and economic bonds.

Challenges in India-Malaysia Relations:

- **Weak Economic Cooperation:** Bilateral trade remains modest compared to Malaysia-China trade ties, while India's export restrictions have affected Malaysia's food security.
- **Defense Geopolitics:** Malaysia's decision to select South Korea's FA-50 jets over India's Tejas highlights challenges in defense deals.
- **Political Tensions:** Disagreements over issues like Kashmir and the Citizenship Amendment Act have caused friction.
- **Extradition Issues:** Malaysia's refusal to extradite Zakir Naik has heightened tensions.
- **China Relations:** Malaysia's quiet diplomacy with China poses challenges for India, particularly in the South China Sea.
- **Labor Exploitation:** Concerns about the treatment of Indian migrant workers in Malaysia persist.

India's Initiatives to Strengthen Relations:

- **Technical and Economic Cooperation (ITEC):** India allocates 100 annual seats for Malaysian nationals, promoting educational exchanges.
- **MICECA:** The platform strengthens bilateral economic cooperation.
- **Cultural Diplomacy:** The Netaji Subhash Chandra Bose Indian Cultural Centre in Kuala Lumpur fosters Indian cultural exchange.
- **Financial Connectivity:** India's UPI payment system is accepted in Malaysia, modernizing financial transactions.

Jaishankar Meets US NSA Jake Sullivan

Why in News:

External Affairs Minister (EAM) S. Jaishankar recently met with the US National Security Adviser (NSA) Jake Sullivan in New Delhi to discuss key strategic, regional, and bilateral issues.

Key highlighting of the Meeting:

- The primary focus of the meeting was to review the India-US Initiative on Critical and Emerging Technologies (iCET), a framework designed to

enhance strategic ties between the two nations. Sullivan's visit included discussions with Indian NSA Ajit Doval and a visit to the Indian Institute of Technology (IIT), Delhi. There, Sullivan interacted with young Indian entrepreneurs and delivered a speech on the bilateral innovation alliance fostered by iCET.

- Both Jaishankar and Sullivan discussed the progress of iCET initiatives, which cover critical areas like space, defence, strategic technology, and security cooperation in the Indo-Pacific region. They also shared insights on emerging technologies, such as Artificial Intelligence (AI) and biotechnology, which are expected to play a pivotal role in the future of bilateral relations.

What is iCET?

- The India-US Initiative on Critical and Emerging Technologies (iCET) is a strategic collaboration aimed at promoting innovation and strengthening the technological partnership between India and the United States.
- Announced in May 2022 and officially launched in January 2023, iCET is being run by the National Security Councils (NSCs) of both countries. The initiative emphasizes cooperation in advanced technological fields, such as Artificial Intelligence (AI), quantum computing, semiconductors, and wireless telecommunications.

Focus Areas of iCET:

iCET identifies six major areas of cooperation, including:

- **AI Research Agency Partnership:** Fostering collaboration between research institutions in both countries to advance AI technologies.
- **Defense Industrial Cooperation:** Strengthening the defense sector through co-development, co-production, and fostering defense startups.
- **Innovation Ecosystems:** Promoting innovation and entrepreneurship by building cooperative frameworks and initiatives.
- **Semiconductor Ecosystem Development:** Supporting the growth of semiconductor industries in both countries, with a focus on supply chain resilience.
- **Human Spaceflight Cooperation:** Collaborative efforts on space exploration and related technologies.
- **Advancements in 5G and 6G Technologies:** Supporting the adoption of cutting-edge wireless technologies like OpenRAN, a non-proprietary

version of the Radio Access Network (RAN) system that allows interoperability between different vendors' equipment.

Importance of the Meeting:

- The meeting holds great significance for the future of India-US relations, especially in light of the strategic and technological partnership formed under iCET. Both sides highlighted how iCET has already driven remarkable advancements in sectors like defence innovation, semiconductors, and AI. The discussions underscored the importance of staying ahead in emerging technologies, with both governments emphasizing support for private sector initiatives to drive innovation.

India – Maldives Relationship

Why in News:

External Affairs Minister (EAM) Dr. S. Jaishankar recently met with the Maldives' Foreign Affairs Minister, Abdulla Khaleel, at Hyderabad House in New Delhi. During this meeting, both leaders exchanged Memoranda of Understanding (MoUs) to strengthen bilateral ties between India and the Maldives.

Key Memoranda of Understandings:

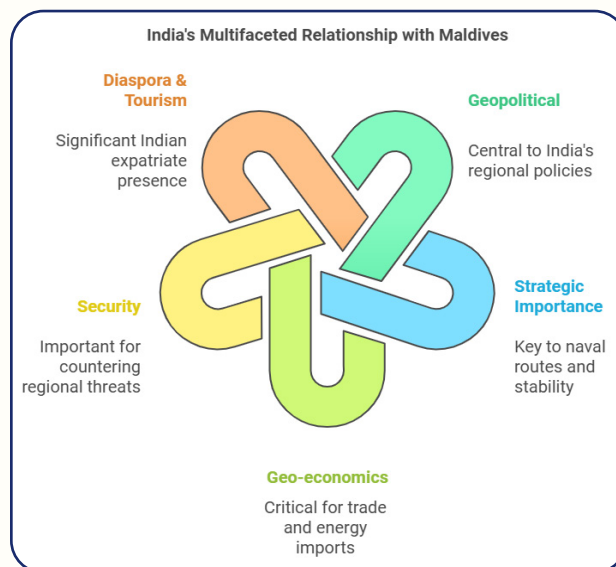
- **MoU on High Impact Community Development Projects:** India and the Maldives signed a Memorandum of Understanding (MoU) for Phase-III of High Impact Community Development Projects (HICDPs), funded by India's grant assistance. This follows up on agreements made during President Muizzu's visit in October 2024.
- **Promotion of Local Currencies for Cross-Border Transactions:** EAM Jaishankar welcomed a new framework agreement to promote the use of local currencies in cross-border transactions, highlighting continued cooperation between the two nations in various sectors.

Implications of this MoUs:

- India implementing High Impact Community Development Projects (HICDPs) in the Maldives, funded through India's grant assistance, will strengthen their ties under India's Neighbourhood First Policy and Vision SAGAR.
- Enhanced India-Maldives cooperation contributes to regional stability and maritime security.
- High-level visits between leaders signify improved relations, focusing on debt relief, economic

cooperation, and peace.

- Strengthened ties enhance India's role in ensuring security and prosperity in the Indian Ocean region.



Significance of Maldives for India

- **Geopolitical:** Maldives is central to India's Neighbourhood First Policy (NFP) and SAGAR, crucial for regional security.
- **Strategic Importance:** Located at key chokepoints in the Indian Ocean, it is vital for safeguarding freedom of navigation and regional stability.
- **Geo-economics:** Maldives is along major sea lanes, critical for India's trade and energy imports. India became Maldives' largest trade partner in 2023.
- **Security:** Maldives is vital for countering terrorism, piracy, and China's strategic influence in the Indian Ocean.
- **Diaspora & Tourism:** Large Indian expatriate workforce and a popular tourism destination.

Challenges in Bilateral Relations

- **Anti-India Sentiments:** Growing calls to reduce Indian military presence and halt infrastructural projects, fueled by the "India Out Campaign."
- **Chinese Influence:** Increased Chinese investments and infrastructure projects like the Sinamale Bridge raise concerns for India.
- **Radicalization:** Growth of Islamist extremist groups, potentially threatening India's security.
- **Misunderstandings:** Speculation over projects like the Uthuru Thila Falhu Harbour fuel mistrust.



Environment & Ecology



Global and Indian Temperature Trends: Implications for Climate Change and India's Vulnerability

The year 2024 has been declared the warmest on record, as confirmed by the World Meteorological Organization (WMO). This announcement marks the culmination of a decade of unprecedented global warming, with 2015-2024 being the ten warmest years ever recorded. The global average surface temperature in 2024 was 1.55°C above pre-industrial levels (1850-1900), surpassing the critical threshold of 1.5°C above baseline temperatures. However, the situation in India presents a different picture, with a temperature increase of 0.65°C above normal levels, although still less than the global average.

Global Temperature Rise: Key Findings by the WMO

- ❖ **Record Global Temperature:** The global average surface temperature in 2024 was 1.55°C above pre-industrial levels, marking the first time the global temperature exceeded 1.5°C. This milestone highlights the continued acceleration of climate change and underscores the urgency of mitigating global warming.
- ❖ **Ocean Heat:** The oceans absorbed a record 16 zettajoules of heat in 2024. This amount of heat is roughly 140 times the total global electricity generation in 2023. Notably, approximately 90% of excess heat from global warming is stored in the oceans, causing long-term warming of ocean waters and affecting marine ecosystems.
- ❖ **Temperature Assessment:** Despite exceeding the 1.5°C threshold, the WMO reassured that the Paris Agreement's climate goals remain

achievable, although every fraction of a degree exacerbates the impacts on ecosystems and human systems. The Paris Agreement aims to limit global temperature rise to well below 2°C, with a target to limit it to 1.5°C.

Temperature Trends in India:

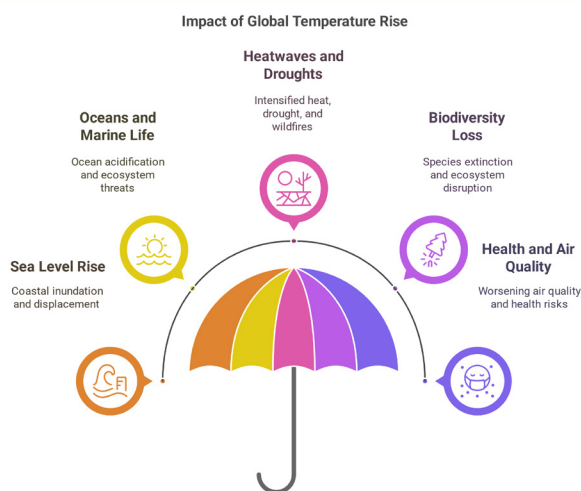
- ❖ India, like the rest of the world, is experiencing significant warming, but the extent of temperature rise is lower than the global average. According to the India Meteorological Department (IMD), India's temperature in 2024 was 0.65°C above the normal, a figure substantially lower than the 1.55°C global rise. IMD data also shows that the temperature in India for 2024 was about 1.2°C higher than the 1901-1910 average, aligning with the long-term warming trend in the country.
- ❖ However, this rise in temperature is still considerably lower than the global land surface temperature increase of 1.59°C since pre-industrial times. The oceans have warmed by approximately 0.88°C during the same period. The disparity between land and ocean warming is a crucial factor in understanding both global and regional climate change trends.

Reasons Behind Lower Warming Over India:

- ❖ **Geographic Location:** India is located in the tropical zone, close to the equator. Unlike polar regions, which are warming at a much higher rate due to atmospheric phenomena such as heat transfer from the tropics, India does not experience similar temperature increases. Higher

latitudes, particularly in the Arctic, have seen temperature increases twice as fast as the global average. This phenomenon is due to the albedo effect, where the loss of ice and snow exposes land and water that absorbs more heat.

- ❖ **Albedo Effect:** The Arctic is experiencing a dramatic rise in temperatures because of a lower albedo effect. The melting of ice exposes darker surfaces that trap more heat than ice-covered surfaces, which reflect sunlight. In contrast, India's albedo effect is largely limited to the Himalayan regions, where snow and ice play a role in reflecting solar radiation.
- ❖ **Aerosols and Pollution:** Aerosols and particulate matter in India's atmosphere have a cooling effect by scattering solar radiation back into space. These aerosols, which also affect cloud formation, help to reduce the amount of sunlight absorbed by the Earth's surface. However, the high levels of air pollution in India, especially in urban areas, have a small but unintended consequence of slowing the rate of temperature increase.
- ❖ **Altitude Variations:** India's landmass is not uniform, and regional variations in temperature rise are significant. Some areas, such as the Himalayan region, are warming more quickly than others due to local geography and climate. However, on the national scale, the overall warming is still lower than the global average.



Consequences of Rising Global Temperatures:

- ❖ **Sea Level Rise:** Global sea levels have risen

by approximately 8 inches since 1880 and are projected to rise by at least one more foot by 2100. This will inundate coastal areas, displacing millions of people and disrupting ecosystems, particularly in low-lying regions like Bangladesh, the Maldives, and parts of India.

- ❖ **Oceans and Marine Life:** The oceans, which have absorbed most of the excess heat from global warming, are also becoming more acidic, with harmful effects on marine life. Ocean acidification, caused by increased CO₂ absorption, threatens coral reefs and the marine food chain.
- ❖ **Heatwaves and Droughts:** Prolonged periods of heat and drought are expected to intensify, exacerbating water shortages, agricultural challenges, and health risks. Conversely, cold waves will become less frequent. The heightened risk of wildfires due to extreme heat and drought poses additional threats to ecosystems and human infrastructure.
- ❖ **Biodiversity Loss:** Rising temperatures and shifting weather patterns are driving many species towards extinction, disrupting ecosystems and biodiversity. The loss of biodiversity has far-reaching effects on food systems, water resources, and the health of the planet.
- ❖ **Health and Air Quality:** Rising temperatures worsen air quality, leading to an increase in heat-related illnesses, respiratory issues, and the spread of vector-borne diseases like malaria and dengue.

India's Path Forward: Strengthening Climate Monitoring and Response

- ❖ **Expansion of Weather Stations:** To enhance climate observation capabilities, India needs to expand its weather stations, particularly in rural areas. A station in every major panchayat, as part of the Viksit Bharat vision for 2047, would help in gathering real-time data for more accurate climate assessments.
- ❖ **Enhancing Computing Capabilities:** India must invest in advanced computing and analysis infrastructure to process climate data effectively. This will help in improving disaster management, agricultural forecasting, and formulating strategies for climate resilience.
- ❖ **Regular Impact Assessments:** India should

conduct regular climate change impact assessments to track evolving risks, such as sea level rise, ecosystem changes, and extreme weather events. These assessments are essential for designing targeted adaptation strategies and policy interventions.

- ❖ **Mission Mausam:** The Mission Mausam initiative, aimed at improving weather prediction and responding to extreme weather events, should be further integrated with national and international systems for better forecasting, especially in coastal and mountainous regions.
- ❖ **Localized Impact Studies:** Conducting localized studies that reflect the unique climate challenges faced by different regions will enable the development of targeted policies and adaptation strategies. These studies will focus on areas like the Himalayas, coastal zones, and urban centers.

Conclusion:

The warming of the planet, as evidenced by the WMO's findings for 2024, presents urgent challenges to both global and national climate resilience. While India's warming is comparatively lower than the global average, the country faces its own set of challenges due to its geographical location, air pollution levels, and regional temperature variations. The need for strengthened climate monitoring, localized impact studies, and improved disaster management systems has never been more critical. By taking proactive measures and investing in the necessary infrastructure and research, India can mitigate the adverse impacts of climate change and build a more resilient future for its population and ecosystems.

Short Issues

Wetland City Accreditation

Why in News:

Indore and Udaipur have become the first Indian cities to join the Global Wetland Cities Network, earning the prestigious Wetland City Accreditation. This global recognition highlights their efforts in wetland conservation and sustainable urban development.

- These two cities are now part of 31 Wetland Accredited Cities worldwide, marking a significant milestone for India in urban environmental conservation.

Significant Wetlands in Recognized Cities:

- » **Indore:** Sirpur Lake, a Ramsar site and bird sanctuary.
- » **Udaipur:** Pichola Lake, Fateh Sagar Lake, Rang Sagar, Swaroop Sagar, and Doodh Talai wetlands.
- Wetlands play a crucial role by providing flood regulation, supporting local livelihoods, and offering recreational and cultural value. They also contribute to climate regulation and ecosystem services, including water purification and biodiversity preservation.
- The government views this achievement as aligning

with its emphasis on sustainable development, ecological conservation, and integrated urban progress.

Wetland City Accreditation Overview:

- The Wetland City Accreditation was approved during the Ramsar Convention COP12 in 2015 under Resolution XII.10. It recognizes cities globally for their effective conservation of wetlands and integration of wetlands into urban planning and community life.
- To qualify, cities must meet six international criteria set by the Ramsar Convention, focusing on wetland conservation, sustainable urban development, and community engagement.
- The primary objectives of the accreditation include conserving urban wetlands, enhancing socio-economic benefits for local communities, and promoting sustainable urban development.

Benefits of Accreditation:

- **Environmental:** Enhances biodiversity, regulates water systems, and prevents floods.
- **Social:** Promotes community education and participation in environmental protection.
- **Economic:** Boosts eco-tourism and supports sustainable livelihoods.

Globally, the accreditation provides international recognition and positive publicity for cities' efforts in wetland conservation. It serves as a platform for sharing best practices and encouraging other cities to prioritize wetland preservation.

Indian Grey Wolf

Context:

The Indian grey wolf recently gave birth to eight pups at the Bankapur Wolf Sanctuary in Karnataka's Koppal district. The Forest Department has implemented stringent safety measures to ensure the survival of the pups, as typically only half of the pups survive in the wild.

About the Indian Grey Wolf:

- **Scientific Name:** *Canis lupus pallipes*.
- **Habitat:** Found predominantly in arid and semi-arid regions across India, including Rajasthan, Gujarat, Haryana, Madhya Pradesh, and parts of Maharashtra.
- **Ecosystems:** Inhabits grasslands, scrublands, and deserts, showcasing adaptability to diverse environments.
- **Physical Characteristics:**
 - » Smaller in size compared to other grey wolves.
 - » Fur coat is greyish-brown with lighter and darker shades.
- **Social Behavior:**
 - » Highly social and family-oriented, living in packs that typically consist of a breeding pair and their offspring.
 - » Skilled hunters preying on small to medium-sized ungulates, with occasional scavenging behavior.
- **Conservation Status:**
 - » Listed as "Endangered" on the IUCN Red List.
 - » Faces threats from habitat loss, human-wildlife conflict, and poaching.
 - » Conservation initiatives are crucial to ensure their survival and protect their natural habitats.

Bankapur Wolf Sanctuary:

- Situated in Koppal district, Karnataka, approximately 15 kilometers from Gangavati town.
- **Area and Terrain:** Spans 332 hectares, encompassing scrub forests, hills, and natural caves, which provide a diverse ecosystem.

- **Wildlife Diversity:** Apart from wolves, the sanctuary is home to species such as leopards, peacocks, blackbucks, foxes, hares, and porcupines.
- **Significant Developments:**
 - » Recently, a female Indian grey wolf gave birth to eight pups, increasing the sanctuary's wolf population to approximately 35-40.
 - » Enhanced safety protocols are in place to protect the pups, minimizing human disturbance.
 - » Authorities have proposed designating the sanctuary as an eco-sensitive zone and are exploring the feasibility of establishing a safari to promote eco-tourism.
 - » **Historical Significance:** Karnataka's first Wolf Wildlife Sanctuary, officially declared at the 15th Wildlife Board meeting.



- **Conservation and Tourism Prospects:** The Bankapur Wolf Sanctuary holds immense potential for conservation and eco-tourism. With its unique ecosystem and rich biodiversity, it can serve as a vital habitat for endangered species like the Indian grey wolf while attracting nature enthusiasts and researchers.

Olive Ridley Turtles

Context:

Around 300-350 Olive Ridley turtles have recently been found washed ashore along the Tamil Nadu coast, particularly in Chennai. While turtle mortality during the nesting season is not uncommon, the high number early in the season has raised concerns among experts.

- Preliminary assessments indicate that many of the turtles likely suffocated and drowned, with bycatch in commercial fishing nets identified as a primary factor. As fish populations increased in areas where turtles typically gather, a rise in trawling activity may have contributed to the issue.

About Olive Ridley Turtles (*Lepidochelys olivacea*):

- The Olive Ridley sea turtle is the second-smallest and most abundant sea turtle species globally. Renowned for their unique mass nesting behavior known as arribadas, where thousands of females gather on the same beach to lay their eggs, these turtles play a significant role in marine ecosystems.
- **Physical Characteristics:**
 - » **Size:** Both males and females reach similar sizes, though females generally have a slightly more rounded carapace (shell).
 - » **Carapace:** The shell is heart-shaped and rounded, which gives the species its common name "olive ridley." The carapace is olive-green, which adds to the turtle's distinct appearance.
 - » **Hatchlings:** When Olive Ridley turtles hatch, their shells are dark grey and appear black when wet.



- **Distribution:**
 - » Olive Ridley turtles are found in warm and tropical waters across the Pacific and Indian Oceans, with some populations also inhabiting warm areas of the Atlantic Ocean.
 - » The most important breeding ground for these turtles is located on Gahirmatha Beach in Odisha, India, which hosts large-scale arribadas.
- **Ecological Significance:**
 - » The mass nesting behavior (arribadas) of Olive Ridley turtles plays a vital role in beach ecosystems, influencing the structure of the beach and the populations of other species.
 - » **Carnivorous:** Olive Ridley turtles are carnivorous, particularly in their early, immature stages. They feed primarily on jellyfish, small fish, and other marine

invertebrates.

- » These turtles contribute to maintaining the balance of marine life by controlling jellyfish populations and providing nutrients to beach ecosystems.

Conservation Status:

- **IUCN Red List:** Olive Ridley turtles are currently listed as Vulnerable due to threats from human activities and environmental factors.
- **CITES:** They are classified under Appendix I, which includes species threatened with extinction and that are prohibited from international trade unless under special circumstances.

Threats

- **Unsustainable Egg Collection:** Human collection of turtle eggs for consumption and trade.
- **Slaughtering on the Beach:** Turtles are sometimes killed by poachers for their meat and shells.
- **Boat Collisions:** The turtles are often struck by boats, leading to injury or death.
- **Marine Debris:** Turtles can get entangled in or ingest marine debris, such as plastic, which poses significant health risks.
- **Natural Disasters:** Storms and natural calamities can damage nesting sites.
- **Climate Change:** Rising sea levels and changing temperatures affect nesting and hatching success.
- **Beach Erosion:** Coastal development and erosion are destroying important nesting habitats.

Mission Mausam

Context:

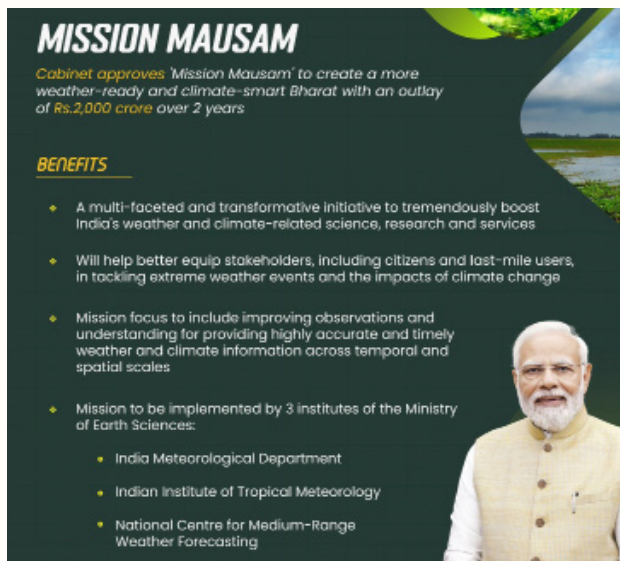
Prime Minister Narendra Modi recently inaugurated Mission Mausam on January 14, 2025, marking a significant step in strengthening India's weather forecasting and disaster management capabilities. The mission was launched during the 150th Foundation Day celebrations of the India Meteorological Department (IMD), which has been serving the nation since its establishment in 1875.

About Mission Mausam:

- Mission Mausam aims to upgrade the capabilities of India's weather department in forecasting, modelling, and dissemination of weather information. With a budget of Rs 2,000 crore for the first two years, this initiative will focus on improving weather surveillance, forecasting, and

modelling across various sectors. These sectors include agriculture, aviation, defence, disaster management, tourism, and health, which all rely heavily on accurate and timely weather information.

- The mission will build on earlier initiatives like Mission Monsoon (2012), which focused on improving long-range monsoon predictions.
- Currently, IMD's forecasting of extreme events such as heatwaves is about 97.99% accurate, while heavy rainfall forecasts stand at approximately 80% accuracy. Mission Mausam aims to push these figures higher, ensuring better preparedness for extreme weather conditions.



MISSION MAUSAM

Cabinet approves 'Mission Mausam' to create a more weather-ready and climate-smart Bharat with an outlay of Rs.2,000 crore over 2 years

BENEFITS

- A multi-faceted and transformative initiative to tremendously boost India's weather and climate-related science, research and services
- Will help better equip stakeholders, including citizens and last-mile users, in tackling extreme weather events and the impacts of climate change
- Mission focus to include improving observations and understanding for providing highly accurate and timely weather and climate information across temporal and spatial scales
- Mission to be implemented by 3 institutes of the Ministry of Earth Sciences:
 - India Meteorological Department
 - Indian Institute of Tropical Meteorology
 - National Centre for Medium-Range Weather Forecasting

Key Objectives of Mission Mausam:

- The mission seeks to cover all aspects of weather services, from routine forecasts to the management of extreme weather events. A significant part of the initiative will be to explore weather modification techniques, such as enhancing or suppressing rainfall, fog, hail, and lightning strikes. To achieve this, India will invest in advanced research on cloud physics.
- India is setting up a first-of-its-kind cloud chamber at the Indian Institute of Tropical Meteorology (IITM) in Pune. This facility will allow scientists to study the cloud formation process under controlled conditions and enhance India's understanding of the monsoon clouds, which are crucial for the country's weather patterns. The cloud chamber will have convection properties, making it unique

globally, as only a few countries have similar facilities.

Who will Oversee Mission Mausam?

- Mission Mausam will be led by three key institutions under the Ministry of Earth Sciences: "the India Meteorological Department (IMD), the Indian Institute of Tropical Meteorology (IITM) in Pune, and the National Centre for Medium-Range Weather Forecasting (NCMRWF) in Noida." These institutions will collaborate to implement the mission's objectives and enhance India's climate resilience.

Conclusion:

Mission Mausam represents a crucial step in ensuring that India is weather-ready and climate-smart. With a focus on upgrading weather forecasting systems, enhancing disaster management, and pioneering new research in cloud physics, the mission will directly benefit various sectors. As India faces the growing impacts of climate change, Mission Mausam will play a pivotal role in minimizing the effects of natural disasters and enhancing the nation's preparedness for future climate challenges.

Winter Storm in the US

Context:

The United States recently experienced winter storm that left at least five people dead, caused widespread school closures, hazardous road conditions, and power outages. The extreme weather was primarily driven by the expansion of the polar vortex, a powerful cold air system that caused temperatures to plummet across large portions of the U.S.

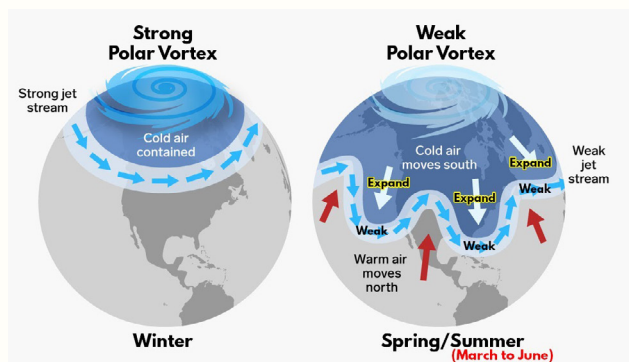
What is the Polar Vortex?

- The polar vortex is a vast area of low pressure and cold air that typically remains over the Earth's polar regions, swirling like a wheel around the North and South Poles. There are two types of polar vortices:
 - » **Tropospheric Polar Vortex:** This occurs at the lowest layer of the atmosphere (about 10 to 15 kilometers above the Earth's surface), where most weather phenomena occur.
 - » **Stratospheric Polar Vortex:** Located around 15 to 50 kilometers above the Earth, this vortex is strongest during autumn and disappears in summer.
- The polar vortex is a natural, recurring feature of

Earth's atmosphere, but when it weakens or shifts from its usual position, it can have a significant impact on global weather patterns, particularly in the U.S., parts of Europe, and Asia.

When does the Polar Vortex cause Extreme Cold?

- The polar vortex typically keeps cold air locked near the poles. However, when the vortex weakens or becomes unstable, cold Arctic air can escape and move southward, causing a drop in temperatures across regions that are usually warmer. This can lead to extreme winter conditions, even in areas as far south as Florida.
- Under normal circumstances, the jet stream—a fast-moving band of wind in the upper atmosphere—plays a crucial role in keeping the cold air trapped near the poles. The jet stream usually follows a circular path around the Earth, helping to maintain a balance between warm air to the south and cold air to the north.
- When the polar vortex weakens, however, the jet stream loses its stability and becomes more "wavy." This fluctuation allows high-pressure systems to push cold air southward, along with the rest of the displaced polar vortex system.
- When the polar vortex is displaced, it can lead to severe winter storms, which are characterized by freezing temperatures, snow, and ice. These storms often disrupt daily life, causing traffic accidents, power outages, and school and business closures.
- They can also lead to dangerous conditions for those who are exposed to the cold for extended periods, increasing the risk of hypothermia and frostbite.



Is Climate Change Impacting the Polar Vortex?

- The relationship between climate change and the behavior of the polar vortex is an area of active

research.

- Some scientists believe that global warming, particularly in the Arctic, may be affecting the strength and stability of the polar vortex.
- In recent years, researchers have observed that the Arctic is warming at a faster rate than other parts of the world—a phenomenon known as Arctic amplification.
- As the Arctic warms more rapidly, the temperature difference between the poles and lower latitudes decreases, weakening the polar vortex and making it more susceptible to disruptions.

Global Water Monitor Report

Context:

The 2024 Global Water Monitor Report, has brought attention to the growing impact of climate change on Earth's water cycle, leading to more frequent and severe extreme weather events, such as intense rainfall, floods, and droughts.

Key Findings of the report

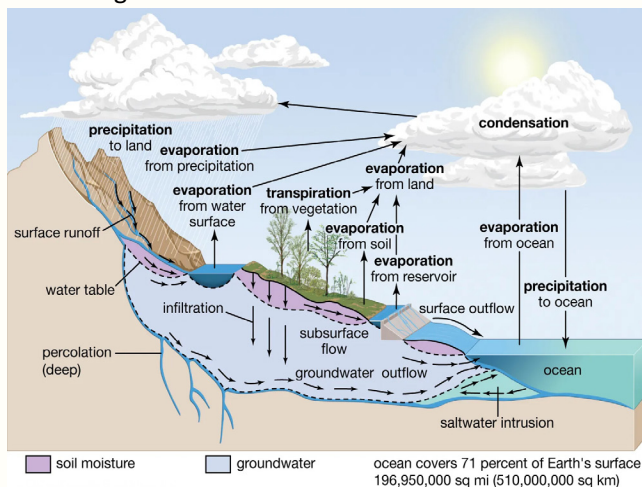
- The 2024 Global Water Monitor Report, prepared by a team of international researchers from universities across Australia, Saudi Arabia, China, and Germany, sheds light on the devastating consequences of climate change on the water cycle. Key findings from the report include:
 - » **Fatalities and Displacement:** Water-related disasters in 2024 caused over 8,700 fatalities and displaced 40 million people, with economic losses exceeding \$550 billion globally.
 - » **Increase in Dry Months:** The frequency of record-dry months in 2024 was 38% higher than the baseline period (1995-2005), reflecting the intensifying dry spells across the globe.
 - » **Rising Rainfall Records:** Rainfall records were shattered more frequently in 2024, with monthly rainfall records being set 27% more often than in 2000, and daily rainfall records occurring 52% more frequently.
 - » **Changes in Water Storage:** Global regions that were traditionally dry experienced a significant decline in terrestrial water storage (TWS), while regions in western, central, and

eastern Africa saw increases in water reserves.

- » **Future Projections:** For 2025, the report forecasts worsening droughts in northern South America, southern Africa, and parts of Asia, alongside heightened flood risks in wetter regions like the Sahel and Europe.

What is the Water Cycle?

- The water cycle, or hydrological cycle, is the movement of water in its solid, liquid, and gas forms through the Earth's atmosphere, oceans, and land. It is driven by solar energy and is essential for water availability and weather regulation. The cycle includes:
 - » **Evaporation:** Water turns into vapor due to the Sun's heat.
 - » **Transpiration:** Plants release water vapor through their leaves.
 - » **Condensation:** Water vapor cools to form clouds.
 - » **Precipitation:** Water returns as rain, snow, etc.
 - » **Infiltration and Runoff:** Water seeps into the ground or flows into rivers and streams.



How is Climate Change Impacting the Water Cycle?

- Climate change is intensifying the water cycle, causing more extreme weather. Higher temperatures increase evaporation, adding more moisture to the atmosphere. This leads to stronger storms and heavier rainfall, causing flooding.
- Conversely, warmer temperatures also increase evaporation from soils, leading to prolonged droughts. As temperatures rise, the water cycle will become more erratic, with wetter regions

experiencing floods and drier areas facing greater droughts.

Implications of Climate Change on the Water Cycle

Climate change's disruption of the water cycle causes:

- **Extreme Weather:** More frequent heavy rainfall and droughts, disrupting food and water supplies, agriculture, and infrastructure.
- **Health Risks:** Floods contaminate water sources, and droughts reduce access to clean water, leading to health issues.
- **Economic Losses:** Water-related disasters cause financial burdens, particularly in agriculture and tourism.
- **Displacement:** Millions are displaced annually due to floods and droughts, especially in vulnerable areas.

Suggestions on How to Address Extreme Rainfall and Floods

To mitigate the effects of climate change on the water cycle, the following actions are recommended:

- **Strengthen Water Management:** Improve forecasting and invest in infrastructure to handle both floods and droughts.
- **Global Emissions Reduction:** Reduce greenhouse gas emissions to slow climate change and its impacts.
- **Adaptation Strategies:** Implement resilient infrastructure, better urban planning, and conservation of natural water systems in vulnerable regions.
- **International Cooperation:** Share resources and technologies globally to protect communities from water-related disasters.

Dynamic Ground Water Resource Assessment Report

Context:

Recently, the Dynamic Ground Water Resource Assessment Report for 2024 was released by the Union Minister of Jal Shakti, Shri CR Patil. It provides an updated assessment of the groundwater resources in India, carried out jointly by the Central Ground Water Board (CGWB) and the States/UTs. The report helps stakeholders, including government bodies, policymakers, and the public, take informed

decisions regarding groundwater management and interventions.

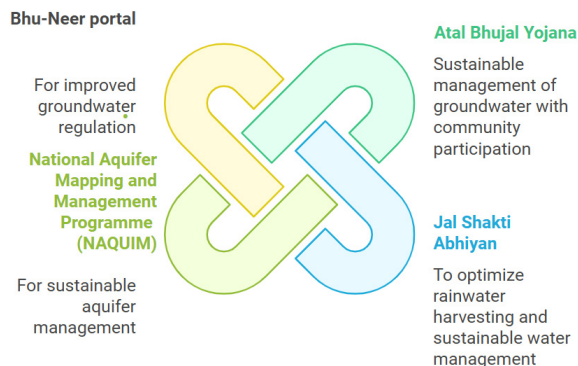
Key Findings:

- **Total Annual Groundwater Recharge:** The total annual groundwater recharge has increased by 15 Billion Cubic Meters (BCM), reaching 446.90 BCM in 2024, compared to previous assessments.
- **Annual Groundwater Extraction:** Groundwater extraction has decreased by 3 BCM from 2017, standing at 245.64 BCM in 2024.
- **Average Stage of Groundwater Extraction:** The average stage of groundwater extraction for India is at 60.47%.

Categorization of groundwater

- **Safe:** 4951 units (73.4% of total units)
- **Semi-critical:** 711 units (10.5%)
- **Critical:** 206 units (3.05%)
- **Over-exploited:** 751 units (11.1%)
- **Saline:** 127 units (1.8%)

Groundwater Conservation Initiatives



Groundwater recharge and extraction findings in last five years:

- **Recharge Increase:** Groundwater recharge has increased by 15 BCM from the 2017 assessment. Specifically, recharge from tanks, ponds, and water conservation structures has grown consistently over the last five years, showing an increase of 0.39 BCM in 2024 compared to 2023.
- **Extraction Decrease:** Groundwater extraction has decreased by 3 BCM from the 2017 assessment.
- The percentage of Safe assessment units has increased from 62.6% in 2017 to 73.4% in 2024, showing positive progress in groundwater management.
- The percentage of Over-exploited units has declined from 17.24% in 2017 to 11.13% in

2024, indicating a reduction in the areas where groundwater resources are being overused.

How the report aids in policymaking?

- The Dynamic Ground Water Resource Assessment Report provides vital data on the status of groundwater resources across the country. It assists policymakers, government agencies, and other stakeholders in:
 - » Identifying regions that require focused conservation efforts.
 - » Implementing strategies to prevent over-exploitation.
 - » Promoting sustainable water management practices.
 - » Making informed decisions on water conservation infrastructure and initiatives.

Disasters in India

Context:

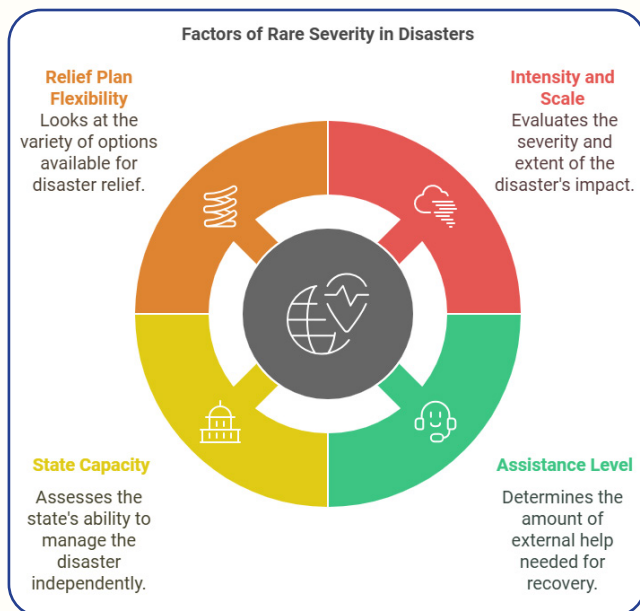
The Union government has recently classified the devastating landslide in Wayanad as a calamity of "severe nature" at the national level. This designation will enable Kerala to access various funding sources, including the local area development funds of MPs, to support rehabilitation efforts. The landslide, which occurred five months ago, resulted in the loss of 254 lives, while 128 individuals remain missing.

Definition of a Disaster in India:

- A disaster is legally defined under the Disaster Management Act, 2005 as a catastrophic event that causes substantial loss of life, human suffering, property damage, or environmental harm. It must overwhelm the capacity of the affected community to cope.
- Disasters can be natural (e.g., earthquakes, floods, cyclones, heatwaves) or man-made (e.g., nuclear, biological, or chemical incidents). They may also result from accidents or negligence.

National Disaster vs. Other Disasters:

- There is no fixed legal provision to declare a disaster as a national calamity. However, a calamity affecting one-third of a state's population and of "rare severity" may be considered a national disaster. The decision depends on factors like the intensity, scale, and the state's ability to manage the disaster.



Factors for Determining "Rare Severity"

- When determining if a disaster is of rare severity, authorities assess:
 - » The intensity and scale of the calamity.
 - » The level of assistance required.
 - » The state's capacity to handle the disaster.
 - » Available alternatives and flexibility in relief plans.

Examples of Severe Calamities

- Examples of disasters deemed severe include the 2013 Uttarakhand floods and the 2014 Cyclone Hudhud in Andhra Pradesh, which received national-level assistance.

Benefits of Declaring a National Disaster:

- When a calamity is declared of "rare severity," the affected state receives national-level support, including:
 - » Additional funding from the National Disaster Response Fund (NDRF).
 - » The Calamity Relief Fund (CRF) with a 3:1 contribution between the Centre and state.
 - » Additional assistance from the National Calamity Contingency Fund (NCCF) if CRF is insufficient.
 - » Loan repayment assistance or concessional loans.

Funding for Disaster Relief

- The funding process follows the National Policy on Disaster Management, 2009:
 - » The National Crisis Management Committee

(NCCM) handles major crises.

- » Central teams assess the damage and the relief needed.
- » The Union Home Secretary leads an inter-ministerial group to review the assessment.
- » A high-level committee approves the financial assistance.

National Critical Minerals Mission (NCMM)

Why in News:

The Indian government has recently approved the National Critical Mineral Mission (NCMM) with an investment of ₹16,300 crore, as part of a total outlay of ₹34,300 crore over seven years. The mission aims to achieve self-reliance in critical minerals and accelerate India's green energy transition.

Key objectives of the National Critical Mineral Mission:

- Promoting exploration and mining of critical minerals both within India and offshore.
- Reducing import dependence by securing domestic resources.
- Developing technologies for the processing of critical minerals.
- Encouraging recycling of these minerals from end-of-life products.
- Supporting public and private sector companies in acquiring critical mineral assets overseas.

About Critical minerals:

- Critical minerals are elements, substances, or materials that are essential for the manufacturing of modern technologies. They are vital for the energy transition to clean energy technologies, such as electric vehicles, wind turbines, and solar panels.

Significance of Critical Minerals:

- Critical Minerals such as copper, lithium, nickel, cobalt, and rare earth elements are vital for:
 - » **Renewable Energy Infrastructure:** Wind turbines, solar panels, and electrical networks.
 - » **Electric Vehicles (EVs):** Batteries and EV infrastructure.
 - » **Electronics & High-Tech Industries:** Smartphones, defense systems, and medical devices.

- With the world transitioning to green energy, the demand for these minerals is surging, making domestic availability crucial for India's economic and technological growth.

Government Strategy and Implementation:

- **Expedited Mining Approvals:** A fast-track regulatory process for mining projects will be introduced to speed up operations.
- **Stockpile Development:** A strategic reserve of critical minerals will be created to safeguard the country's supply chains.
- **Policy Reforms:** The Mines and Minerals (Development and Regulation) Act, 1957 was amended in 2023 to allow the auctioning of 24 strategic mineral blocks.
- **Geological Survey of India (GSI) Exploration Projects:** Over the past three years, 368 mineral exploration projects were initiated, with 227 more projects planned for 2025-26.
- **Import Duty Waivers:** Customs duties on critical minerals were removed in the FY25 budget to promote domestic processing and manufacturing.

Impact on India's Energy Transition:

- Secure supply chains for India's clean energy sector.
- Boost domestic manufacturing of EV batteries and renewable energy components.
- Strengthen India's global position in critical minerals markets.
- Attract foreign and private investment in mining and processing.

Challenges and Way Forward:

- **Geopolitical Risks:** Acquiring mineral assets abroad could be affected by international political dynamics.
- **Environmental Concerns:** Balancing increased mining with environmental conservation remains a challenge.
- **Investment Risks:** Successful private sector participation requires solid policy backing.

Impacts of mining dust on Vegetation

Why in News:

A recent study conducted by the University of Southampton, UK, and the National Institute of Technology in Rourkela, India, reveals how mining dust,

especially from open-cast mines, significantly impacts plant health and growth.

- The study was conducted in Jharsuguda, a coal mining region in Odisha, India, home to 16 active coal mines with vast coal reserves.

Understanding the Impact of Mining Dust:

- Open-cast mining generates large amounts of dust, which settles on nearby vegetation.
- The dust is composed of various metals, including lead, aluminum, and iron, which obstruct vital physiological processes necessary for plant survival.
- Mining dust primarily affects photosynthesis, light absorption, nutrient availability, gas exchange, and plant-pathogen interactions, all essential for plant growth.

How Mining Dust Affects Plant Functions:

- **Stomatal Obstruction:**
 - » Dust particles block the stomata, tiny pores on leaves through which plants exchange gases like carbon dioxide and oxygen.
 - » This blockage disrupts carbon dioxide absorption, essential for photosynthesis, and impairs oxygen release, essential for the plant's growth.
- **Reduced Carbon Uptake:**
 - » The study revealed that for every additional gram of dust per square meter of leaves, carbon uptake decreased by 2 to 3 grams.
 - » This reduction in carbon uptake hinders the plant's ability to grow and thrive.
- **Impeded Transpiration:**
 - » Transpiration, the process by which plants release water vapor through leaves, is also affected by mining dust.
 - » The reduction in transpiration ranged from 0.0005 to 0.0006 mm/m²/day per unit of dust, impairing the plant's ability to regulate its internal temperature, similar to how humans sweat to cool down.

Significance of the Study:

- This research highlights the need for further studies and environmental management strategies to mitigate mining dust's impact on ecosystems.
- As mining activities expand, understanding and addressing dust's effects on plant health is vital for preserving vulnerable ecosystems.



Science & Technology



The SpaDeX Docking Mission: A Landmark Achievement in India's Space Exploration Journey

The Indian Space Research Organisation (ISRO) has made significant strides in space technology with the launch of its Space Docking Experiment (SpaDeX) mission. The mission is set to showcase India's ability to execute a successful space docking operation. By demonstrating advanced in-space docking technology, ISRO aims to solidify India's position as a global leader in space exploration. If successful, the SpaDeX mission will make India the fourth country—after the United States, Russia, and China—to achieve this technological milestone.

What is the SpaDeX Mission?

- ❖ The SpaDeX mission, short for "Space Docking Experiment", is designed to test and demonstrate docking capabilities in space.
 - » Docking technology involves the precise maneuvering and joining of two spacecraft in orbit, enabling them to function as a single unit.
 - » It is essential for a variety of advanced space operations, such as modular assembly, resupply missions, crew transfer, and sample return missions.
- ❖ In the case of SpaDeX, ISRO is using two small satellites, each weighing 220 kg, to test this technology. The mission, launched on December 30, 2024, is aimed at conducting a series of precise maneuvers to bring the two satellites together for docking.

Key steps in Space Docking:

- » **Rendezvous:** The two spacecraft approach each other within a close orbit, minimizing any distance and velocity differences.
- » **Docking:** The spacecraft establish a mechanical connection using specialized docking systems, which allows them to combine their resources and operations.
- » **Power and Resource Sharing:** After docking, the spacecraft can share electrical power, fuel, and other resources, enabling joint operations for extended periods.
- ❖ Space docking is an essential technology for future missions involving human space exploration, space station construction, and interplanetary endeavors. Docking also provides a mechanism for transferring crew, supplies, and scientific payloads between modules in space.

India's Motivation for Space Docking Technology:

- ❖ India's pursuit of space docking technology is part of its broader ambitions to become a prominent player in space exploration. The SpaDeX mission will provide ISRO with the expertise and experience necessary to support future missions such as:
 - » **Establishing the Bharatiya Antariksh Station:** India's long-term goal is to establish its own space station, the Bharatiya Antariksh Station (BAS), by 2035. This space station will require the ability to dock multiple spacecraft

in orbit to assemble modules and enable various operations, including crew transfer, research, and satellite servicing

- » **Supporting Lunar Missions and Chandrayaan-4:** Docking technology will also be vital for the Chandrayaan-4 mission, which aims to bring lunar samples back to Earth. The mission will involve multiple spacecraft launched separately, which will need to be docked in orbit before proceeding toward the Moon.

Historical Context of Space Docking:

- ❖ The concept of space docking was first demonstrated in the 1960s as part of the space race between the United States and the Soviet Union. In 1966, the United States successfully achieved the first space docking when Gemini VIII docked with the Agena target vehicle. Notably, astronaut Neil Armstrong, the first person to walk on the Moon in 1969, was part of the Gemini VIII mission.
- ❖ In 1967, the Soviet Union became the first to demonstrate uncrewed, automated docking with the Kosmos 186 and Kosmos 188 spacecraft. This achievement marked a significant advancement in docking technology, paving the way for more complex missions.
- ❖ In 2011, China joined the ranks of spacefaring nations with successful docking capabilities when the Shenzhou 8 spacecraft docked with the Tiangong 1 space laboratory. The following year, China successfully completed its first crewed space docking with the Shenzhou 9 spacecraft.

Technological Advancements Demonstrated by SpaDeX:

- ❖ The SpaDeX mission showcases several technological advancements that will be crucial for India's future space endeavors. One of the most notable features of the mission is the use of two small satellites, SDX01 and SDX02, each weighing 220 kg. Due to their smaller size, these satellites require highly precise maneuvering to successfully dock, making the mission more challenging than typical spacecraft docking operations.

Advanced Sensors and Navigation Systems:

- ❖ **Laser Range Finders:** These are used to measure the distance between the satellites with high

accuracy.

- ❖ **Rendezvous Sensors:** These sensors assist in guiding the spacecraft toward each other and help maintain alignment.
- ❖ **Proximity and Docking Sensors:** These sensors enable the spacecraft to detect when they are close enough to dock and initiate the locking mechanism.
- ❖ Moreover, SpaDeX also includes the first-ever biological experiments in space with the CROPS (Compact Research Module for Orbital Plant Studies). These experiments will explore how plants grow in microgravity conditions, adding a new dimension to ISRO's space research efforts.



Challenges in Docking and Precise Maneuvering:

- ❖ The docking of two fast-moving spacecraft is an intricate and challenging process. The relative speed and trajectory of the two satellites must be carefully controlled to ensure a successful docking. Even small deviations in alignment can result in the failure of the mission. ISRO is employing advanced onboard sensors to address these challenges and ensure the accuracy of the docking maneuvers.

- ❖ The process involves a series of steps to reduce the distance between the two satellites incrementally. Starting from 5 km, the distance is gradually reduced to 1.5 km, 500 m, 225 m, and 15 m. Finally, at a distance of 3 meters, the docking rings on both satellites will connect, retract, and lock, physically joining the spacecraft together. Once docked, the satellites will share electrical power and operate as a single unit.

Impact on India's Future Space Exploration Goals:

- ❖ The successful completion of the SpaDeX mission will have a lasting impact on India's future space exploration goals. The ability to dock spacecraft will enable more complex missions, including the construction of space stations and interplanetary missions. The technologies developed through SpaDeX will be instrumental in the construction and operation of the Bharatiya Antariksh Station, which is expected to play a central role in India's space activities over the next few decades.
- ❖ Additionally, SpaDeX will facilitate satellite servicing and lunar missions, positioning India

to take a leading role in space exploration. As ISRO continues to refine docking technology, the agency will also focus on developing autonomous systems for future missions. These advancements will make it possible to conduct more sophisticated missions, including those that require the assembly of multiple spacecraft in orbit.

Conclusion:

India's SpaDeX docking mission is a significant milestone for ISRO and the country's growing capabilities in space exploration. By successfully demonstrating docking technology, India will become the fourth nation to achieve this feat, positioning the country as a global leader in space exploration. As ISRO continues to push the boundaries of space exploration, the SpaDeX mission is a critical stepping stone toward achieving long-term goals. With advancements in docking technology and the potential for future collaboration, India is poised to take on increasingly complex missions, shaping the future of space exploration for years to come.

Short Issues

Guillain-Barré Syndrome

Why in News:

Pune is currently witnessing a sharp rise in cases of Guillain-Barré Syndrome (GBS), a rare but serious neurological disorder, with the number of confirmed cases surpassing 100. It is prompting authorities to take immediate action to investigate and control the situation.

What is Guillain-Barré Syndrome (GBS)?

- GBS is a serious autoimmune disorder affecting the peripheral nervous system.
- **Symptoms:** It starts with weakness, tingling, and numbness in the limbs, which can progress to paralysis. The paralysis can last from 6 to 12 months or even longer.
- **Nerve Impact:** The syndrome affects nerves responsible for muscle movement, pain, temperature, and touch sensations.
- **Demographics:** Although more common in adults

and males, GBS can occur in individuals of all ages.



Cause of GBS:

- The exact cause of GBS is not fully understood, but it is often preceded by an infection (either bacterial or viral), which leads the immune system to mistakenly attack the body's own nerves.
- **Vaccination and Surgery:** In rare instances, vaccinations or surgeries might slightly increase the risk of developing GBS, but the risk is generally very low.

- **Infection vs. Vaccine Risk:** Studies indicate that the risk of GBS from infections (like flu) is higher than the risk from vaccines (such as the flu vaccine).

Treatment for GBS

- Treatment for GBS typically involves procedures like plasmapheresis, which removes the patient's plasma and replaces it with other fluids, aiming to reduce the immune attack on the nerves.

Paraquat: A Hazardous Herbicide

Why in News:

A 24-year-old woman was sentenced to death by a Thiruvananthapuram court after being found guilty of poisoning her boyfriend in 2022 using a chemical herbicide called paraquat.

What is Paraquat?

- Paraquat (paraquat dichloride or methyl viologen) is a widely used herbicide for controlling weed growth and desiccating crops before harvest.
- Classified as moderately hazardous by the WHO, paraquat is banned in over 70 countries, including China and the European Union, due to its toxicity.
- Despite this, it remains prevalent in the US and India, with the US usage doubling to 11 million pounds annually between 2014 and 2018. The US EPA warns that even a small sip can be fatal.

How Does Paraquat Poisoning Occur?

- Paraquat poisoning occurs primarily through ingestion but can also happen via skin contact or inhalation. The chemical spreads quickly through the body, damaging organs like the lungs, liver, and kidneys. Paraquat enters cells through "active transport," allowing it to penetrate deeply into tissues.

Symptoms of Paraquat Poisoning:

- The severity of poisoning depends on the amount, exposure method, and pre-existing health conditions.
- **Small Doses:** Symptoms appear over days or weeks, causing damage to vital organs, including the heart, liver, and kidneys.
- **Large Doses:** Immediate symptoms include abdominal pain, swelling in the mouth and throat, bloody diarrhea, and nausea. Acute kidney failure,

rapid heart rate, respiratory failure, and death can follow.

Treatments for Paraquat Poisoning:

- There is no known antidote for paraquat poisoning, but treatments like activated charcoal or Fuller's earth can help bind the chemical if taken immediately.
- Hospital treatments such as immunosuppression and charcoal hemoperfusion have been explored but are not widely available.
- The CDC recommends removing contaminated clothing, avoiding contact with it, and washing the exposed skin with soap and water.

Regulation and Usage Restrictions:

- **In the US:** Paraquat is only available to licensed commercial users, with added safeguards like a blue dye to distinguish it from other liquids and a vomiting agent to reduce accidental ingestion.
- **In India:** Paraquat is regulated under the Insecticides Act of 1968 and approved for use on specific crops. However, its use is often unregulated, with paraquat sold without proper prescriptions. Farmers handle it without protective equipment, increasing exposure risks.

Conclusion:

The unregulated sale, improper storage, and lack of training on safe use increase the risk of poisoning. There is a need for better enforcement of safety measures and education for farmers on the safe handling of paraquat.

Rhodamine B

Why in News:

Rhodamine B, a synthetic dye widely used in textiles, leather, and paper, has come under scrutiny due to its illegal use in food products. Known for its vibrant pink color and fluorescent properties, the dye poses severe health risks, including DNA damage, mutations, and potential carcinogenic effects.

What is Rhodamine B?

- Rhodamine B ($C_{28}H_{31}ClN_2O_3$) is a water-soluble synthetic dye that appears green in powder form and bright fluorescent pink when dissolved in water.
- It is primarily used in industries like textiles, leather, paper, and paints, and in scientific research for its fluorescence. Its persistent nature makes it non-

biodegradable, contributing to environmental pollution.

- Despite its industrial utility, Rhodamine B is classified globally as toxic and banned in consumables.

Harmful Impacts of Rhodamine B:

- Rhodamine B is associated with serious health risks. Studies indicate its carcinogenic properties, linking it to DNA damage, mutations, and tumor growth in animal models.
- Prolonged exposure may harm vital organs like the liver, kidneys, and bladder. It can also cause oxidative stress, leading to cellular damage.
- Children and immunocompromised individuals are particularly vulnerable. Environmentally, the dye contaminates ecosystems through residual traces in wastewater.
- Dermatologists highlight the risks of allergic reactions and chronic pigmentation changes from unregulated use.
- **Global Regulatory Actions:** In the United States, the FDA banned Rhodamine B in consumables decades ago and reinforced the prohibition in January 2025, citing growing evidence of its carcinogenicity.
- Similarly, the European Union has long restricted its use, labeling it a “substance of very high concern.”

India's Actions against Rhodamine B:

- **Tamil Nadu:** Banned colored cotton candy in February 2024 after detecting Rhodamine B, citing violations of the Food Safety and Standards Act (2006).
- **Karnataka:** Prohibited its use in popular street foods like cotton candy in March 2024, with stringent penalties for violators, including ₹10 lakh fines and imprisonment.
- **Puducherry and Himachal Pradesh:** Similar bans were imposed in early 2024 to protect public health.

The Way Forward:

India needs stronger research and enforcement mechanisms to combat harmful additives. Experts suggest proactive funding by FSSAI for studies on food additives, especially synthetic dyes, and increased public awareness about food safety. Ensuring that foods are not only appealing but also safe is crucial for long-term public health.

Space Telescopes Discover Rule-Breaking Black Hole in Early Universe

Why in News:

Astronomers using NASA's James Webb Space Telescope (JWST) and the Chandra X-ray Observatory have discovered LID-568, a black hole that challenges existing theories of black hole formation. Located just 1.5 billion years after the Big Bang, LID-568 is feeding at a rate nearly 40 times faster than the previously thought upper limit, known as the Eddington limit.

The Mystery of Super-Eddington Accretion:

- The Eddington limit defines the maximum rate at which a black hole can accrete matter, balancing the gravitational pull with the outward pressure of radiation.
- If radiation pressure exceeds gravity, the black hole stops feeding.
- However, LID-568 surpasses this limit by 40 times, engaging in super-Eddington accretion, a phenomenon that was previously believed to be impossible on such a scale.

Breaking New Ground:

- LID-568's discovery is significant for two reasons:
 - » It is located farther away than other known super-Eddington black holes
 - » It exceeds the limit by an astonishing factor of 40.
- This is a rare event, as such accretion episodes are usually short-lived, and observing it provides valuable insights into the early growth of supermassive black holes.

What LID-568 Could Teach Us:

- LID-568 challenges traditional models of black hole formation, which suggest that supermassive black holes form from gas cloud collapses or the death of the first stars.
- Its rapid growth during short bursts of super-Eddington accretion could offer a new explanation for how these black holes became so large so quickly after the Big Bang, even with relatively small initial masses.

About Black Holes:

- Supermassive black holes, found at the centers of galaxies, are millions to billions of times the mass of the Sun. LID-568 offers rare insights into

their early formation and growth, reshaping our understanding of these cosmic giants.

About James Webb Space Telescope (JWST) and Chandra X-Ray Observatory:

- The James Webb Space Telescope (JWST) is a next-generation space telescope designed primarily for infrared observations.
- Developed through collaboration between NASA, the European Space Agency (ESA), and the Canadian Space Agency (CSA), it serves as the successor to the Hubble Space Telescope.

Key features of JWST include:

- Infrared optimization for observing distant, faint objects beyond the reach of visible light.
- A 6.5-meter primary mirror with 18 hexagonal gold-coated segments, which fold for launch and unfold in space.
- A five-layer sunshield to protect instruments from solar heat and maintain low temperatures essential for infrared observations.
- Operating from the Lagrange Point 2 (L2), minimizing light interference and fuel consumption for orbital corrections.
- High sensitivity to study the earliest stars and galaxies formed after the Big Bang.
- The main objectives of JWST are to investigate the origins of galaxies, star formation, and planetary systems, and to assess the potential for life in other systems by analyzing their physical and chemical properties.
- Chandra X-Ray Observatory, launched in 1999, is NASA's premier X-ray telescope, studying high-energy phenomena like exploded stars, galaxy clusters, and black holes. It offers unrivaled X-ray resolution, helping scientists explore the universe's most extreme environments.

India Becomes 4th Country to Achieve Space Docking

Why in News:

India recently achieved a major milestone in space exploration, becoming the fourth country in the world to successfully perform space docking. This remarkable feat was carried out using two small spacecraft, SDX01 (Chaser) and SDX02 (Target), as part of ISRO's Space Docking Experiment (SpaDeX) mission.

About Space Docking:

- Space docking refers to the precise process of joining two fast-moving satellites in space.
- The SpaDeX mission involved two spacecraft — SDX01 (Chaser) and SDX02 (Target) — which successfully docked in orbit. This technology is crucial for future space missions and satellite servicing.
- The US, Russia, and China are the only other countries to have performed successful space docking before India. By joining this elite group, India strengthens its position in the global space exploration community.

About the SpaDeX Mission:

- SpaDeX and its 24 PS4-Orbital Experiment Module (POEM-4) payloads were launched by ISRO via the PSLV-C60 rocket from the Sriharikota space centre in December 2024.
- **Mission Purpose:** The main objective was to develop and demonstrate autonomous rendezvous and docking technology using two small spacecraft.
- The mission is expected to last up to two years post-docking operations.
- **Mission Goals:**
 - » **Rendezvous and Docking:** Develop technology for the rendezvous and autonomous docking of SDX01 (Chaser) and SDX02 (Target).
 - » **Controllability Evaluation:** Once docked, the system's ability to maneuver and maintain stability as a single unit will be assessed.
 - » **Power Transfer:** The mission will also test the power transfer between the docked spacecraft.
 - » **Life Extension:** The potential for extending the operational life of the target spacecraft will be explored.
- **Key Technologies Used**
 - » **Inter-Satellite Communication Link (ISL):** Facilitates autonomous communication between the two spacecraft.
 - » **GNSS-Based RODP Processor:** This system determines the relative position and velocity of the spacecraft, crucial for precise docking.
- **Other Indigenous Technologies:**
 - » **Docking Mechanism:** Enables the joining of two spacecraft.
 - » **Sensor Suite:** Provides critical data for

autonomous docking operations.

- » **Autonomous Rendezvous Strategy:** Ensures the spacecraft approach and dock without manual intervention.

Significance of the SpaDeX Mission:

- **Support for Future Missions:** SpaDeX technology will support India's long-term space objectives, such as sample return from the Moon and the development of the Bharatiya Antariksh Station (BAS).
- **Satellite Servicing:** Docking technology allows for the servicing and refueling of satellites, which can extend their operational lifespans and reduce the cost of satellite maintenance.
- **Multiple Rocket Launches:** The technology helps in situations where multiple launches are needed to achieve a single mission goal, such as constructing a space station or conducting a large-scale space experiment.

Other Potential Applications:

- **In-Space Robotics:** Technology for robotic repairs and satellite servicing.
- **Natural Resource Monitoring:** Enhanced capacity for environmental and resource monitoring, including vegetation studies.

Trichophyton Indotinea: A Controversial Fungal Pathogen

Why in News:

Trichophyton indotinea, a skin-disease-causing fungus, has recently been at the center of a debate among dermatologists. More than 30 dermatologists have called for renaming the fungus, as it was originally named after India. They argue that the pathogen, although first identified in India, has now been reported from over 40 countries worldwide, without any confirmation of India being the true country of origin.

About Trichophyton indotinea:

- Trichophyton indotinea is a fungal pathogen that is part of the dermatophyte group, a family of fungi that cause superficial infections of the skin, hair, and nails.
- Dermatophytosis, which is caused by dermatophytes like T. indotinea, results in symptoms such as inflamed, itchy, and widespread skin rashes, typically affecting areas like the groin,

gluteal region and face. The infection can be observed in patients of all ages and genders.

- The fungus was named in 2020 by a Japanese research group after isolating two samples from India and Nepal. As per a common academic practice, pathogens are often named after the country where they were first discovered or isolated. However, since T. indotinea has now been identified in over 40 countries, dermatologists have questioned whether its association with India in the name is still valid.

Transmission and Treatment:

- Trichophyton indotinea spreads primarily through direct skin contact or via contaminated objects such as towels and clothing.
- One of the key concerns with this pathogen is its resistance to the first-line antifungal treatment, terbinafine, which is commonly used to treat dermatophytosis.
- This resistance makes it more difficult to treat the infections caused by T. indotinea, contributing to the growing global health concern.

Current Treatment Options:

- Historically, the first oral treatment used for dermatophyte infections was griseofulvin, which was introduced in 1958. Griseofulvin works by interfering with fungal cell division by disrupting microtubule formation.
- Modern treatment options for dermatophyte infections include antifungal agents such as terbinafine (an allylamine) and itraconazole (a triazole).
- These medications are typically used for oral therapy, although resistance in pathogens like T. indotinea presents a challenge for effective treatment.

Pink Fire Retardant Used Against California Wildfires

Why in News:

Pink fire retardants, including Phos-Chek, are being extensively used in Southern California to combat devastating wildfires. Thousands of gallons of this retardant are being dropped from planes to slow or halt the fires' spread, especially in Los Angeles and surrounding areas.

What is Pink Fire Retardant?

- Pink fire retardant refers to a chemical mixture used to slow or suppress fires, especially in wildland firefighting efforts. The most common brand of fire retardant used in the United States is Phos-Chek.
- **Composition:** Phos-Chek is primarily made up of three components:
 - » **Water:** The primary solvent in the mixture.
 - » **Fertilizer:** Typically contains ammonium salts, such as diammonium phosphate ($[(\text{NH}_4)_2\text{HPO}_4]$) and ammonium polyphosphate ($[(\text{NH}_4\text{PO}_3)_n]$).
 - » **Colorant:** The distinctive pink color added helps firefighters clearly see the areas that have been treated, ensuring precise application and effective fire line creation.
- The salts in Phos-Chek, particularly ammonium polyphosphate, are designed to remain in place longer than water, as they do not evaporate easily. This helps provide extended protection against fires.

How it Works:

- The fire retardant is sprayed ahead of the fire to coat vegetation. The goal is to prevent oxygen from fueling the fire by creating a barrier of non-flammable material. When the retardant reacts with the cellulose in plants, it consumes the heat from the fire, converting the cellulose into non-flammable carbon.

What are the Concerns?

Despite its widespread use, there are several concerns surrounding the use of Phos-Chek as a fire retardant:

- **Toxic Metals:** A study in 2024 revealed that Phos-Chek contains harmful heavy metals, including chromium and cadmium, both of which are known carcinogens. These metals can cause serious health issues such as kidney and liver diseases. Additionally, the release of more than 400 tons of heavy metals between 2009 and 2021 has led to increased environmental pollution.
- **Water Contamination:** Toxic metals from fire retardants can enter local waterways, contributing to pollution in rivers and streams. This poses a significant threat to aquatic life, potentially harming ecosystems.
- **Effectiveness of Retardants:** The effectiveness of aerial fire retardants like Phos-Chek depends on several factors such as slope, fuel type, terrain,

and weather conditions. With climate change altering weather patterns, the narrow windows of conditions in which the retardants are most effective are becoming more limited. This makes fire suppression efforts increasingly challenging.

Causes of Devastating Wildfires:

The frequent and destructive wildfires in Southern California are influenced by multiple factors:

- **Drought Conditions:** The region has experienced prolonged droughts, with little to no rainfall in recent months, creating the perfect environment for wildfires to start and spread rapidly.
- **Santa Ana Winds:** Hot and dry winds, known as the Santa Ana winds, are common in the area and significantly contribute to the ignition and spread of fires.
- **Climate Change:** Climate change has been a significant factor in increasing the frequency, intensity, and season length of wildfires. Rising temperatures, prolonged droughts, and changing weather patterns are all contributing to more devastating wildfires in California.

AnemiaPhone

Why in News:

AnemiaPhone, a technology developed by Cornell University researchers to accurately, quickly, and cheaply, assess iron deficiency, has been transferred to the Indian Council of Medical Research (ICMR) for integration into its programmes for anemia, women's health, and maternal and child health throughout the country.

About AnemiaPhone:

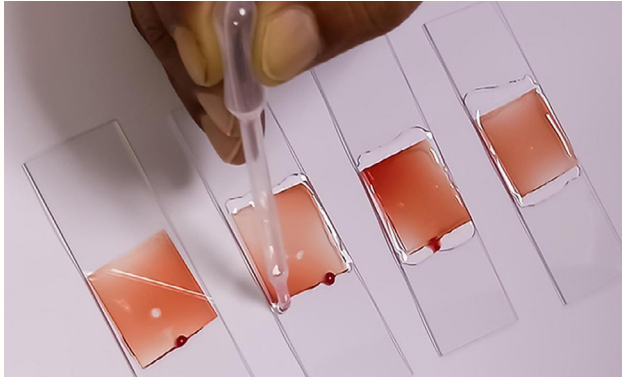
- AnemiaPhone is designed to provide a quick, accurate, and cost-effective method of diagnosing iron deficiency, a primary cause of anemia. This technology will aid in rapid screening and diagnosis, especially in areas where healthcare resources may be limited.
- Iron deficiency anemia is a critical health issue in India, affecting 50% to 70% of pregnant women.

How AnemiaPhone Works:

- The test involves a small finger stick to collect a drop of blood.
- This blood is placed on a test strip similar to a home-use COVID-19 test.
- Within a few minutes, the results are available and

can be uploaded to a clinical database via a mobile phone, wireless tablet, or computer.

- Healthcare workers can easily interpret the results, offering guidance, triage, referral, or immediate intervention on the spot.



Key Advantages of AnemiaPhone:

- The AnemiaPhone offers several advantages that make it an invaluable tool in India's battle against anaemia:
 - » **Affordability:** It is a low-cost alternative to traditional lab tests.
 - » **Portability:** The device is small, making it easy to transport and use in remote areas.
 - » **Quick Results:** It provides results within minutes, enabling immediate action.
 - » **Wireless Integration:** Results are uploaded directly to a clinical database, reducing the need for manual data entry.
 - » **Ease of Use:** The device is simple to operate, and healthcare workers do not require extensive training to use it.

Significance:

- AnemiaPhone's integration into public health programs in India will enhance access to timely diagnosis and help combat iron deficiency anemia, particularly among women and children, contributing to improved maternal and child health outcomes.

About Anemia:

- Anemia occurs when you have low levels of healthy red blood cells, impairing your body's ability to carry oxygen. Common symptoms include fatigue, weakness, and shortness of breath.
- Anemia can range from mild to severe and may be life-threatening in some cases. The condition can have multiple causes, and treatment depends on the underlying cause.

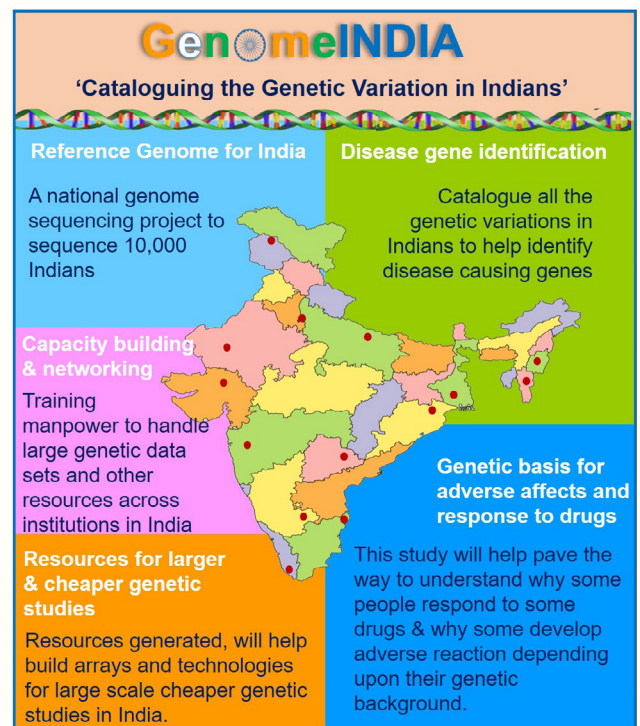
The Iron Deficiency Problem in India:

- Anaemia, particularly iron deficiency anaemia, is a major public health issue in India. According to the National Family Health Survey (NFHS), around 59% of women and 47% of children aged 6-59 months suffer from anaemia.
- The condition leads to severe consequences, including fatigue, shortness of breath, and in extreme cases, organ failure, complications during childbirth, and even death. India's high maternal and child mortality rates are closely linked to anaemia, making it a priority health concern for the country.

Genome India Project

Why in News:

Prime Minister Narendra Modi recently announced the completion of the Genome India Project (GIP), marking a major milestone in India's biotechnology sector. The project unveiled a sequencing database of 10,000 genomes, showcasing India's vast genetic diversity. This database, accessible through managed access at the Indian Biological Data Centre (IBDC), is expected to drive advancements in healthcare, research, and policymaking.

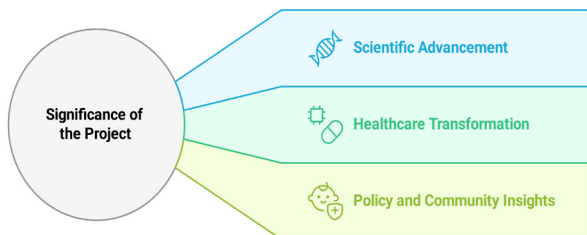


About the Genome India Project:

- Launched in January 2020, the Genome India Project is aimed at building a comprehensive genetic catalogue of India's population. By sequencing the genomes of 10,000 individuals from diverse population groups, it has created a reference database highlighting genetic variations unique to the Indian subcontinent.
- The initiative was executed by a consortium of over 20 institutions, including:
 - » Indian Institutes of Technology (IITs) in Delhi, Madras, and Jodhpur.
 - » Indian Institute of Science (IISc), Bengaluru.
 - » Council of Scientific and Industrial Research (CSIR).
 - » Biotechnology Research and Innovation Centre (BRIC).
- This collaboration underscores India's robust research ecosystem, capable of handling large-scale, multidisciplinary scientific projects.

The Role of Genome Sequencing:

- Genome sequencing, which decodes the complete genetic composition of an organism, is central to the project. It identifies genetic variations that influence traits, disease susceptibility, and adaptations, making it a cornerstone for precision medicine and population-specific research.



Significance of the Project:

- **Scientific Advancement:**
 - » Provides a valuable dataset for researchers to explore genetic influences on health and disease.
 - » Establishes a foundation for understanding the genetic makeup of India's diverse population groups.
- **Healthcare Transformation:**
 - » Facilitates development of precision medicine tailored to Indian genetic profiles.
 - » Supports advancements in the treatment of genetic and infectious diseases.

- **Policy and Community Insights:**
 - » Offers data for evidence-based policymaking.
 - » Enhances understanding of the lifestyles and adaptations of diverse communities, aiding targeted health interventions.

Applications and Future Potential:

- The GIP positions India as a global leader in genomics and biotechnology. Its long-term applications include:
 - » **Precision Medicine:** Customized treatments based on genetic profiles.
 - » **Drug Development:** Identification of new drug targets and therapies.
 - » **Public Health:** Insights to combat diseases more effectively, including genetic disorders.
- Additionally, the project aligns with the increasing integration of Artificial Intelligence (AI) in biotech research, providing a strong foundation for innovative, data-driven solutions.

Conclusion

The Genome India Project is a groundbreaking initiative that showcases India's commitment to harnessing science for societal benefit. By creating a robust genetic database, the project not only elevates India's biotechnology capabilities but also lays the groundwork for significant improvements in healthcare, research, and policymaking. As Prime Minister Modi emphasized, this project symbolizes a transformative step in building an inclusive and scientifically advanced nation.

New method on Nitrogen Use Efficiency

Why in News:

A recent breakthrough by researchers has introduced a promising new method for improving Nitrogen Use Efficiency (NUE) in plants, a key factor in enhancing crop yields sustainably. The study, published by the National Institute of Plant Genome Research (NIPGR), reveals that reducing nitric oxide (NO) levels in plants can significantly boost their nitrogen uptake and overall efficiency.

Understanding Nitrogen Use Efficiency (NUE)

- **Nitrogen's Role in Agriculture:**
 - » Nitrogen is a crucial nutrient for plant growth and crop yields.
 - » Efficient nitrogen use is key to enhancing crop

productivity and maintaining soil health.

- **Challenges with Traditional Methods:**
 - » Current technologies largely depend on agronomic practices like split doses of inorganic nitrogen fertilizers and slow-release formulations.
 - » These methods have drawbacks such as high operational costs for farmers.
 - » They contribute to nitrogen oxide (NO_x) emissions, which are harmful to the environment.
 - » The production and application of synthetic fertilizers also contribute to greenhouse gas emissions, exacerbating climate change.
- **Need for Sustainable Solutions:**
 - » There is a growing need for more sustainable methods to improve NUE and reduce the dependency on synthetic nitrogen fertilizers.

Key highlights of the Research:

- » The researchers found that manipulating nitric oxide (NO) levels in plants could significantly improve nitrogen use efficiency.
- » NO levels regulate the expression of high-affinity nitrate transporters (HATs), such as NRT2.1 and NRT2.4, which are responsible for the uptake of nitrogen from the soil.
- » The team used a pharmaceutical approach by treating plants with NO donors and NO scavengers to observe their effects on NUE.
- » By overexpressing phytohemoglobin, a natural NO scavenger, they were able to increase the expression of HATs, leading to more efficient nitrogen uptake.
- **Results:**
 - » The plants demonstrated enhanced nitrogen absorption, especially under conditions of low NO.
 - » This approach allowed for improved nitrogen uptake even with reduced nitrogen inputs, providing a potential solution for improving crop yields sustainably.
 - » Unlike traditional methods that rely on high quantities of synthetic fertilizers, this new method focuses on genetically and pharmacologically modulating NO levels in plants.
 - » It offers a sustainable way to boost nitrogen uptake while reducing the need for fertilizers, thus minimizing environmental harm.

The Potential Benefits of this Innovation

- **Sustainable Agriculture:** The new method could help reduce dependence on synthetic nitrogen fertilizers, offering a more eco-friendly approach to enhancing crop yields.
- **Cost-Effectiveness for Farmers:** By improving NUE, this method could lower the operational costs for farmers, making it economically beneficial for agricultural sectors worldwide.
- **Environmental Impact:** Reducing the use of nitrogen fertilizers can help mitigate the environmental problems associated with excessive NO_x emissions and the overall ecological footprint of farming practices.
- **Better Crop Productivity:** The ability to increase nitrogen uptake efficiently can lead to improved plant growth, especially in low-nitrogen environments, thus boosting crop yields in a sustainable manner.

CROPS Mission

Why in News:

ISRO (Indian Space Research Organisation) recently made a significant announcement regarding the successful germination of cowpea seeds in space under microgravity conditions. The experiment, part of ISRO's CROPS (Compact Research Module for Orbital Plant Studies) mission, aims to explore how plants grow in space—critical for future long-duration missions.

About ISRO's CROPS Mission:

- The CROPS payload, developed by the Vikram Sarabhai Space Centre (VSSC), is designed to advance ISRO's capabilities for growing and sustaining plants in extraterrestrial environments.

Successful Germination in Space:

- **Launch Details:** The CROPS experiment was launched on December 30, 2024, aboard ISRO's PSLV-C60 mission.
- **Experiment Setup:** Cowpea seeds were housed in the POEM-4 platform, repurposing the PSLV rocket's fourth stage for scientific research.
- **Results:** Within four days, eight cowpea seeds sprouted leaves, demonstrating plant growth potential in space.

Significance of the CROPS Experiment:

- **Understanding Microgravity Effects:** Provides insights into how plants grow in space's unique

environment.

- **Supporting Deep Space Exploration:** Insights from this experiment are crucial for long-duration missions, such as Mars, by developing sustainable life support systems.
- **Contributions to Astrobotany:** Enhances global research on growing food in space.

Future Applications:

- **Ensuring Food Security in Space:** The experiment could pave the way for sustainable agricultural systems, ensuring food for astronauts on long missions.
- **Deep Space Mission Readiness:** Research like CROPS is vital for missions to Mars and beyond.

What is the POEM-4 Platform?

- The POEM-4 (PSLV Orbital Experiment Module) is a space research platform that uses the spent fourth stage of the PSLV for microgravity experiments.
- It's part of the ISRO SpaDeX Mission and the fourth deployment of the POEM platform, with three times more capacity than POEM-3. Some of the payloads on the POEM-4 platform include:
 - » **Walking Robotic Arm (RRM-TD):** A robotic manipulator that can move in an inchworm-like motion for inspection and servicing.
 - » **Debris Capture Robotic Manipulator:** A VSSC innovation that can capture and manipulate debris to help with space clean-up.
 - » **Gradient Control Reaction Wheel Assembly (RWA):** An IISU payload that uses reaction wheels to improve the POEM platform's attitude stabilization.

What is the SpaDeX mission?

- The SpaDeX mission, launched aboard ISRO's PSLV-C60 on December 30, 2024, aims to demonstrate India's first in-space docking. The mission involves two small satellites, SDX01 (Chaser) and SDX02 (Target).
- This will place India alongside the US, Russia, and China in mastering space docking technology, which is essential for future space stations, interplanetary missions, and in-orbit refueling.
- The success of SpaDeX marks a major milestone in India's space capabilities, laying the foundation for advanced space infrastructure.

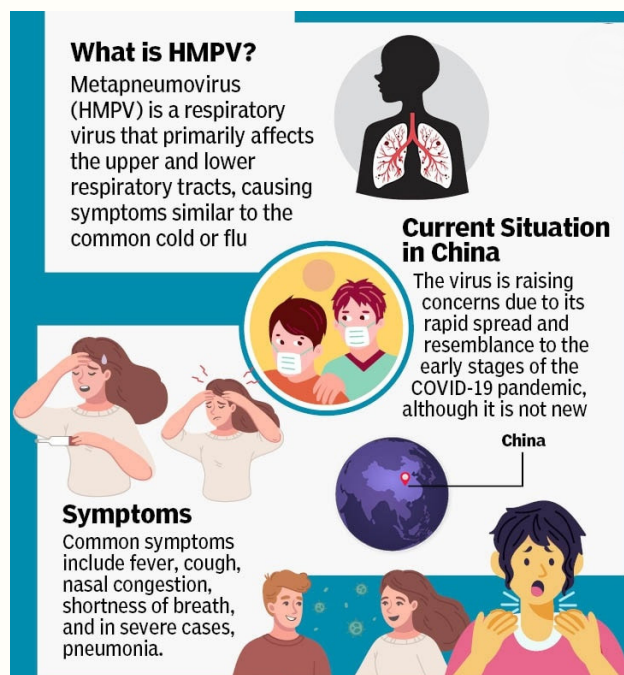
HMPV Outbreak

Why in News:

The Union Ministry of Health and Family Welfare is keeping a close watch on the reported outbreak of Human Metapneumovirus (HMPV) in China. The outbreak has particularly affected children under 14 years of age. However, the Ministry has reassured that, while China has seen a surge in respiratory illnesses related to HMPV, India has registered few cases of HMPV as of now.

The Outbreak in China:

- China is currently experiencing a spike in cases of HMPV, with a noticeable increase in respiratory illnesses, especially in children.



What is HMPV?
Metapneumovirus (HMPV) is a respiratory virus that primarily affects the upper and lower respiratory tracts, causing symptoms similar to the common cold or flu.

Current Situation in China
The virus is raising concerns due to its rapid spread and resemblance to the early stages of the COVID-19 pandemic, although it is not new.

Symptoms
Common symptoms include fever, cough, nasal congestion, shortness of breath, and in severe cases, pneumonia.

China

About Human Metapneumovirus (HMPV):

- HMPV, first identified in 2001, is a member of the Paramyxoviridae family, which also includes the Respiratory Syncytial Virus (RSV).
- The virus can cause both upper and lower respiratory diseases and affects individuals of all ages, though it is particularly serious for young children, older adults, and those with weakened immune systems.
- Symptoms typically include fever, cough, nasal congestion, and difficulty breathing. In severe cases, it can lead to bronchitis or pneumonia.
- The virus spreads through respiratory droplets

from coughing and sneezing, and close personal contact, such as touching infected surfaces and then touching the face. Its incubation period typically lasts from three to six days, with the illness duration depending on the severity.

Comparison of HMPV with Influenza, RSV, and SARS-CoV-2:

Virus Family

- HMPV: Paramyxoviridae
- Influenza: Orthomyxoviridae
- RSV: Paramyxoviridae
- SARS-CoV-2: Coronaviridae

Genomic Material

- HMPV: RNA (single-stranded, negative-sense)
- Influenza: RNA (single-stranded, negative-sense)
- RSV: RNA (single-stranded, negative-sense)
- SARS-CoV-2: RNA (single-stranded, positive-sense)

Transmission

- HMPV: Airborne droplets, close contact
- Influenza: Airborne droplets, close contact
- RSV: Airborne droplets, close contact
- SARS-CoV-2: Airborne droplets, close contact, fomites

Symptoms

- HMPV: Cough, wheezing, fever, congestion, difficulty breathing
- Influenza: Fever, cough, sore throat, fatigue, body aches
- RSV: Cough, wheezing, shortness of breath, fever
- SARS-CoV-2: Fever, cough, shortness of breath, fatigue, loss of taste/smell

Incubation Period

- HMPV: 3 to 6 days
- Influenza: 1 to 4 days
- RSV: 4 to 6 days
- SARS-CoV-2: 2 to 14 days (average 5-6 days)

Seasonality

- HMPV: Typically winter and spring
- Influenza: Winter months
- RSV: Winter months
- SARS-CoV-2: Year-round, with peaks depending on the region

Vaccine Availability

- HMPV: No vaccine available
- Influenza: Annual flu vaccine available
- RSV: No vaccine available
- SARS-CoV-2: Vaccines available (e.g., Pfizer, Moderna)

Treatment

- HMPV: Supportive care (oxygen, antivirals not common)
- Influenza: Antiviral medications (e.g., oseltamivir), supportive care
- RSV: Supportive care, bronchodilators, steroids
- SARS-CoV-2: Antiviral treatments (e.g., remdesivir), monoclonal antibodies, supportive care

H. Pylori

Why in News:

Recently, researchers have introduced a groundbreaking method for detecting *Helicobacter pylori* (*H. pylori*) and its antibiotic resistance mutations, using CRISPR-based technology. This new diagnostic tool, which can be used in resource-limited settings, offers hope for timely and accurate detection of *H. pylori* infections, which can lead to serious gastrointestinal diseases.

What is *H. pylori*?

- *Helicobacter pylori* is a bacterium that infects more than 43% of the global population, often leading to peptic ulcers, gastritis, dyspepsia, and gastric cancer.
- It resides in the stomach lining and can cause chronic infections that lead to long-term health problems. Early detection is key to preventing more severe outcomes, such as cancer.

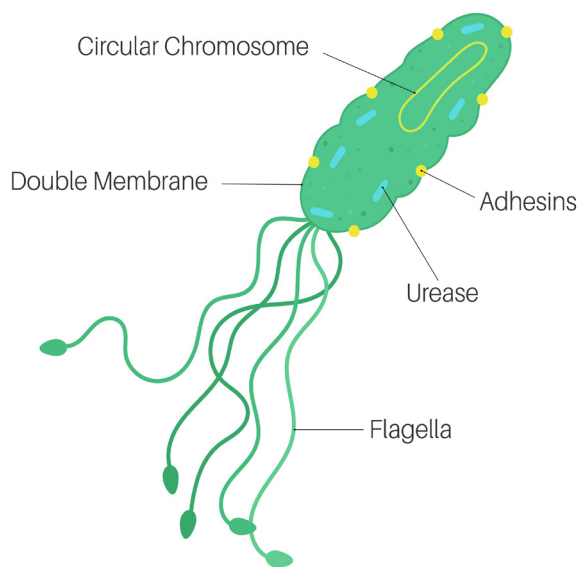
Why is Detecting Mutations Important?

- Mutations in the 23S ribosomal RNA gene of *H. pylori* can result in resistance to common antibiotics, particularly clarithromycin. This resistance complicates treatment, requiring multiple rounds of antibiotics and potentially leading to ineffective treatments.
- Detecting these mutations allows healthcare providers to tailor more effective treatment plans, reducing the risk of complications.

How does the New Diagnostic Method work?

- The new method utilizes an engineered CRISPR protein called en31-FnCas9, which targets specific mutations in *H. pylori* to detect antibiotic resistance. This technique, combined with a lateral flow-based test (FELUDA), allows for a rapid, visual diagnosis.
- It can be deployed in rural or remote areas with minimal infrastructure, making it a promising tool for widespread use.

HELICOBACTER PYLORI



Potential Impact in Remote Areas:

- This cost-effective, easy-to-use diagnostic method is ideal for use in rural or underserved areas, where access to advanced diagnostic equipment is limited.
- By providing quick, accurate results, it can help healthcare professionals make informed decisions about treatment, improving outcomes for patients with H. pylori infections and preventing complications like gastric cancer.

DeepSeek AI

Why in News:

DeepSeek, a Chinese AI startup, has gained global recognition with its high-performance AI models, DeepSeek-V3 and DeepSeek-R1, surpassing ChatGPT in app downloads. Its rapid success contributed to a 3% drop in the Nasdaq stock market, marking its worst performance in two years.

- Unlike OpenAI and Google, which invested hundreds of millions into AI development, DeepSeek achieved this with significantly lower investment, raising questions about the necessity of massive AI funding.

What is DeepSeek?

- DeepSeek was founded by Liang Wenfeng, CEO

of High Flyer, a quantitative hedge fund based in Hangzhou, China. Originally an AI research unit under High Flyer AI in 2019, it has since emerged as a key player in the AI industry.

- It is known for developing open-source AI models that combine cost-efficiency with high performance, making AI more accessible to businesses and developers.

Why is DeepSeek Significant?

- **Challenging AI Industry Norms:** DeepSeek's rise directly challenges the dominance of U.S.-based AI giants like OpenAI, Meta, and Google by offering high-performance AI at a fraction of the cost. This disrupts the traditional belief that AI advancements require massive investments.

Performance of DeepSeek AI Models

- DeepSeek-V3, based on the Mixture-of-Experts (MOE) architecture, has surpassed GPT-4o and Claude 3.5 Sonnet in various benchmark tests.
- DeepSeek-R1, an affordable yet powerful model, competes in areas like math, coding, and general knowledge, challenging the need for expensive AI systems.

Cost-Effective AI Development

- DeepSeek reduces AI development costs through innovative strategies:
 - » **Use of Older GPUs:** Instead of relying on expensive cutting-edge chips, DeepSeek utilizes NVIDIA H800 GPUs, lowering hardware expenses.
 - » **Optimized Training Techniques:** Its Auxiliary-Loss-Free Load Balancing method allows AI models to be trained with minimal resources, maintaining efficiency without sacrificing quality.

What are the Broader Implications?

- DeepSeek's success could reshape the AI industry by proving that high-performance AI can be built affordably. Its open-source approach is democratizing AI, making it accessible to smaller businesses, researchers, and developers who lack the financial backing of major corporations.

Future Impact on AI Development:

- **Industry Standards:** DeepSeek's efficient, cost-effective model development could push AI companies toward more sustainable investment strategies.
- **Investment Trends:** The debate over high-cost vs.

low-cost AI development will intensify, potentially shifting funding priorities in the AI sector.

- **Global AI Competition:** DeepSeek's rise strengthens China's position in AI, intensifying competition with Western tech firms.

The Road Ahead:

DeepSeek is poised to reshape the global AI landscape. As it continues to innovate with minimal resources, it is setting new standards for AI development—proving that affordable AI can still compete at the highest levels. Its growing influence could redefine the industry, making AI cheaper, more accessible, and more efficient.

NVS-02 Satellite

Why in News:

The Indian Space Research Organisation (ISRO) marked another significant milestone in its space exploration journey with the successful launch of the NVS-02 satellite on January 29, 2025. The launch was carried out by the GSLV-F15 rocket from the Satish Dhawan Space Centre (SHAR) in Sriharikota, Andhra Pradesh.

About NVS-02 Satellite and its Role in NavIC System:

- **NavIC System:** NVS-02 is part of the second-generation NavIC system, which enhances India's regional satellite navigation capabilities.
- **Objective:** The second-generation satellites aim to improve the accuracy and reliability of the first-generation NavIC system, initially launched to reduce India's reliance on foreign navigation systems like GPS.
- **NavIC Features:** India's indigenous satellite navigation system, providing highly accurate Position, Velocity, and Timing (PVT) data within India and up to 1,500 kilometers beyond its borders.

Key Features of NVS-02 Satellite

- **Weight and Power:** The NVS-02 satellite weighs 2,250 kg and has a power capacity of around 3 kW, ensuring it can operate efficiently for its intended lifespan.
- **Payload Configuration:** Similar to its predecessor, NVS-01, the NVS-02 is equipped with a navigation payload in three frequency bands: L1, L5, and S bands. It also carries a ranging payload in C-band, enhancing its ability to provide accurate position,

velocity, and timing (PVT) services.

- **Atomic Clock:** A key feature of the NVS-02 is its Rubidium Atomic Frequency Standard (RAFS), which ensures precise timekeeping. This is crucial for accurate navigation and positioning data.
- **Extended Lifespan:** The satellite is designed to have a longer operational lifespan of 12 years, improving the sustainability of India's NavIC system.

ISRO'S 100TH MISSION WITH NVS-02 SATELLITE



ISRO prepares for **GSLV-F15** launch with **NVS-02** satellite, marking **100th mission** from Satish Dhawan Space Centre in Sriharikota on January 29.

- **Indigenous Technology:** The satellite is equipped with indigenously developed atomic clocks, providing greater accuracy compared to older systems. This is part of ISRO's ongoing efforts to bolster self-reliance in space technology.
- **Replacement of Older Satellite:** The NVS-02 will replace the older NavIC satellite, IRNSS-1E, which had been operating in the system. It will be positioned at 111.75°E in orbit, contributing to the continued reliability of the NavIC system.
- **Development and Integration:** The NVS-02 was designed, developed, and integrated at ISRO's U R Satellite Centre (URSC), reflecting the organization's strong capabilities in satellite technology.

Importance of NavIC for India:

- **Technological Advancement:** With the growing

demand for satellite navigation across various sectors (defense, agriculture, transportation, disaster management), NavIC provides a reliable regional alternative.

- **Global Competitiveness:** The NVS-02 satellite strengthens India's ability to offer a self-reliant satellite navigation system that competes with global systems like GPS (USA), GLONASS (Russia), BeiDou (China), and Galileo (EU).
- **Strategic & Civilian Utility:** NavIC's enhanced features offer crucial support for both strategic defense and civilian sectors, providing India with a more dependable navigation option.

The Future of NavIC and ISRO's Vision:

- **Complete Constellation:** NavIC will eventually consist of seven operational satellites, ensuring continuous, accurate, and reliable services for the Indian subcontinent.
- **National Development:** These services will benefit various sectors like urban planning, agriculture, and disaster management.
- **ISRO's Goals:** The NVS-02 satellite launch aligns with ISRO's broader vision to become a global leader in space exploration and technological innovation.

Nano-Formulation for Safer Parkinson's Treatment

Why in News:

On January 27, 2025, scientists at the Institute of Nano Science and Technology (INST), Mohali, announced a breakthrough in Parkinson's disease treatment. The development of a targeted nano-formulation offers a safer and more effective treatment option for Parkinson's disease, a neurodegenerative disorder.

- This innovation addresses the challenges of current therapies and is seen as a potential game-changer for Parkinson's patients.

What is Parkinson's disease?

- Parkinson's disease is a progressive neurological disorder affecting the motor system.
- It is caused by the death of dopamine-producing neurons in the brain, essential for movement control.
- Common symptoms include tremors, stiffness, slowness of movement, and balance issues.
- Existing medications can only alleviate symptoms;

there is no cure, highlighting the need for improved treatments.

About New Nano-Formulation:

- The INST research team developed a targeted nano-formulation focused on the sustained release of the hormone 17beta-estradiol (E2).
- E2 plays a critical role in managing Parkinson's disease, as its imbalance in the brain contributes to neurodegenerative conditions like Parkinson's.
- Traditional E2 treatments are limited by peripheral side effects and an incomplete understanding of its molecular mechanisms.
- The new nano-formulation addresses these issues by using a targeted delivery system, reducing side effects and improving therapeutic outcomes.

How does It Work?

- The formulation involves Dopamine Receptor D3 (DRD3) conjugated to 17beta-estradiol-loaded chitosan nanoparticles, ensuring sustained release of E2 directly to the brain.
- It helps protect neurons by inhibiting the mitochondrial translocation of calpain, a protein involved in cellular damage.
- By preventing calpain from reaching the mitochondria, the formulation shields neurons from damage caused by rotenone-induced mitochondrial dysfunction, a common issue in neurodegenerative diseases.

Significance of the Research:

- Published in the journal Carbohydrate Polymers, this study marks a leap forward in understanding how E2 regulates oxidative stress and neuronal damage in Parkinson's patients.
- The researchers highlight the potential of this nano-formulation to become a safer and more effective drug for Parkinson's patients with further research into long-term safety and better-targeted delivery.
- Earlier, INST researchers also explored a nano-formulation of melatonin, another hormone, as a potential Parkinson's treatment.
- Both innovations underline the growing interest in nano-based therapies for neurological disorders, promising better, long-term solutions for patients.

Economic Survey 2024-25: A Comprehensive Analysis

The Economic Survey 2024-25, presented in Parliament by Finance Minister Nirmala Sitharaman on 31 January, 2025, offers a detailed review of India's economic performance over the past year and projections for the upcoming fiscal year. Prepared by the Department of Economic Affairs under the guidance of Chief Economic Advisor (CEA) V. Anantha Nageswaran, the Survey plays a crucial role in shaping policy decisions, highlighting challenges, and suggesting strategies for strengthening economic resilience.

This year's Survey offers a balanced outlook, emphasizing India's economic stability amidst global uncertainties, while also recognizing structural weaknesses that could limit long-term growth. It stresses the need for deregulation, business reforms, and a more enterprise-friendly environment to maintain India's growth trajectory.

Global Economic Context:

The Economic Survey 2024-25 highlights two major global concerns that could impact India's economic trajectory:

- **Slowdown in Global Trade and Investment:** The global economic environment has become increasingly unfavorable. Global trade and investment have slowed significantly, a trend driven by the rise of protectionism and a decline in globalization. Geopolitical tensions and economic uncertainty have contributed to stagnation in global trade. The Survey warns of the emergence of secular stagnation—a prolonged period of low global economic growth.
- **China's Dominance in Global Manufacturing:** The Survey underscores China's significant role in

global manufacturing, accounting for one-third of total global production, which is more than the next 10 largest manufacturing economies combined. However, geopolitical shifts, economic fragmentation, and concerns over supply chains have led to a reevaluation of global manufacturing strategies. The world's dependency on China for manufacturing—established during the era of globalization—is likely to reset, presenting both challenges and opportunities for India.

State of the Indian Economy:

- **Real GDP Growth:** The Survey projects India's Real GDP growth at 6.4% for FY 2024-25, with growth expected to range from 6.3% to 6.8% for FY 2025-26. This stable growth reflects strong domestic demand, improved private investment, and robust services sector performance.
- **Rising Private Consumption:** Private Final Consumption Expenditure (PFCE), which measures spending by individuals on goods and services, is projected to rise. The share of PFCE in India's GDP is expected to increase from 60.3% in FY24 to 61.8% in FY25. This would mark the highest level of private consumption since FY03, driven by strong consumer confidence, increased disposable income, expanding middle-class consumption, and urbanization.
- **Gross Value Added (GVA):** Aggregate Gross Value Added (GVA) has surpassed pre-pandemic trends and remains above historical levels, indicating consistent growth across key sectors such as manufacturing, services, and agriculture.
- **Inflation Trends:** The Survey notes that headline inflation has moderated, primarily due

to a decline in core inflation (which excludes food and fuel prices). However, food inflation remains a concern, increasing from 7.5% in FY24 to 8.4% in FY25.

- » Factors contributing to rising food inflation include supply chain disruptions, weather-related uncertainties impacting agricultural output, and rising prices of essential commodities like vegetables and pulses.
- » The government aims to stabilize inflation through targeted interventions in food supply chains while maintaining monetary policy flexibility.

Sectoral Growth:

- **Agricultural Growth:** The agricultural sector is expected to grow by 3.8% in FY25. The first half of FY25 saw steady agricultural growth, with Q2 recording an improvement to 3.5%. This growth is supported by healthy Kharif production, favorable monsoon conditions, and high reservoir levels that helped support irrigation and crop productivity. Total Kharif food grain production for FY25 is expected to reach a record 1647.05 lakh metric tonnes (LMT), marking a 5.7% increase compared to FY24. Agricultural resilience is essential for supporting the rural economy and ensuring food security.
- **Industrial Sector Performance:** India's industrial sector is projected to grow by 6.2% in FY25, driven by strong performance in construction activities, electricity, gas, water supply, and other utility services. However, industrial growth faced challenges in FY25's first half, particularly in Q2, due to weaker manufacturing exports, disruptions caused by above-average monsoons, and mixed effects from festive seasons. Despite these challenges, India's manufacturing Purchasing Managers' Index (PMI) remains one of the fastest-growing globally, signaling robust demand and production activity in the domestic market.
- **Services Sector Growth:** The services sector continues to outperform other sectors, with a projected growth rate of 7.2% in FY25. In the first half of FY25, the sector grew by 7.1%. This

growth is driven by financial services, real estate, professional services, public administration, and defense. India's services exports surged by 12.8% between April and November FY25, reflecting the sector's competitiveness in the global market, particularly in IT and business services.

External Sector Performance

- **Trade and Current Account:** India's merchandise exports grew by 1.6% YoY from April to December 2024. While merchandise imports rose by 5.2%, the strong performance in services exports helped offset the imbalance, maintaining India's position as the seventh-largest exporter of services globally. Remittances from abroad have also played a significant role in keeping the current account deficit (CAD) relatively contained at 1.2% of GDP in Q2 FY25.
- **Foreign Direct Investment (FDI):** FDI inflows to India saw a notable revival, increasing by 17.9% YoY, from USD 47.2 billion in FY24 to USD 55.6 billion in FY25. This growth highlights India's appeal as an investment destination, driven by economic reforms, political stability, and a large consumer market.

Infrastructure and Renewable Energy

- **Infrastructure Development:** Infrastructure investment remains a key priority for long-term growth. The government's focus on expanding rail and port capacities is evident, with 2031 km of railway network commissioned and 17 new pairs of Vande Bharat trains introduced between April and November 2024, further enhancing connectivity.
- **Renewable Energy:** India's renewable energy capacity increased by 15.8% YoY by December 2024. The government's emphasis on green investments, such as the National Green Hydrogen Mission and PM-KUSUM, is expected to accelerate the transition to a low-carbon economy.

Employment and Labour Market: Improving Trends

- The Economic Survey reports positive employment trends, supported by post-pandemic recovery, increased formalization of jobs, and

rising workforce participation. According to the 2023-24 Periodic Labour Force Survey (PLFS):

- » The unemployment rate has declined.
 - » The Labour Force Participation Rate (LFPR) has improved, indicating increased job opportunities.
 - » The Worker-to-Population Ratio (WPR) has risen, reflecting greater workforce engagement.
- However, structural challenges in job quality and wage growth persist.

Policy Recommendations:

- **Deregulation for Economic Growth:** The Survey calls for simplifying business regulations, particularly for small and medium enterprises (SMEs). Reducing bureaucratic hurdles will lower the cost of doing business, encourage entrepreneurship, and stimulate investment and job creation.
- **Business Reform Action Plan (BRAP):** The Department for Promotion of Industry and Internal Trade (DPIIT) has introduced the Business Reform Action Plan (BRAP), aiming to foster business-friendly policies. The Survey stresses the importance of implementing BRAP in emerging and aspiring states to boost industrial

growth.

- **Addressing Infrastructure and Investment Gaps:** The Survey highlights India's challenges in producing critical goods at scale and quality. Strengthening domestic manufacturing and infrastructure investments is crucial for long-term economic stability.

Conclusion:

The Economic Survey 2024-25 provides a detailed and nuanced assessment of India's economic trajectory. While GDP growth remains steady, addressing structural challenges such as inflation, regulatory bottlenecks, and industrial capacity constraints will be crucial for maintaining momentum. The key policy priorities are:

- Deregulation to encourage business expansion and job creation.
- Enhancing industrial and infrastructure capacity.
- Stabilizing inflation through supply-side interventions.
- Strengthening the labour market for sustainable employment growth.

India's ability to implement pro-business policies, attract investments, and improve industrial competitiveness will be central to sustaining its economic momentum.

Union Budget 2025-26

The Union Budget for the fiscal year 2025-26, presented by the Finance Minister of India, is a landmark financial roadmap that sets the course for the nation's development with a clear vision of achieving "Viksit Bharat" (Developed India). The budget underscores the idea that 'a country is not just its soil but its people', as articulated by the renowned Telugu poet and playwright, Shri Gurajada Appa Rao. With a focus on inclusive growth and empowerment across all sectors, the budget adopts the theme "Sabka Vikas" (Development for All) to stimulate balanced development, particularly emphasizing agriculture, MSMEs, investment, and exports. It integrates economic reforms to address long-term challenges while ensuring a sustainable

growth trajectory for India.

Key Objectives of Budget 2025-26:

- The Finance Minister's budget speech highlighted the government's commitment to six overarching principles to foster growth:
 - » **Zero Poverty:** Strengthening welfare measures and ensuring economic opportunities for the underprivileged.
 - » **Quality Education:** Expanding access to high-standard education and training facilities.
 - » **Affordable Healthcare:** Ensuring universal access to healthcare infrastructure.
 - » **Employment for Skilled Labor:** Promoting skill development programs and job creation.

- » **Women's Economic Participation:** Targeting 70% women engagement in economic activities.
- » **Agricultural Excellence:** Positioning India as a global leader in food production.
- Through these principles, the government seeks to lay the foundation for an economically self-sustained and inclusive India.

Four Engines of Economic Growth:

The Union Budget's strategic approach rests on four primary engines of growth—Agriculture, MSMEs (Micro, Small, and Medium Enterprises), Investment, and Exports. These sectors are envisioned as the key drivers of India's economy, with targeted reforms and schemes aimed at boosting their potential.

- **Agriculture: Strengthening Rural Prosperity** Agriculture continues to be the backbone of India's economy, particularly in rural areas. The government has announced several initiatives to enhance agricultural productivity, promote diversification, and ensure financial stability for farmers.
 - » **Prime Minister Dhan-Dhaanya Krishi Yojana:** Aiming to cover 100 districts, this scheme will improve productivity, crop diversification, irrigation facilities, and post-harvest storage, ensuring farmers have access to both short- and long-term credit.
 - » **Mission for Aatmanirbharta in Pulses:** A six-year initiative focused on the production of Tur, Urad, and Masoor pulses, with procurement support from NAFED and NCCF.
 - » **Makhana Board:** This newly announced body will focus on the cultivation, processing, and export of Makhana (fox nuts), particularly benefiting farmers in Bihar and other regions.
 - » **Kisan Credit Card (KCC):** The loan limit has been increased from ₹3 lakh to ₹5 lakh, with modified interest subvention, facilitating easier access to credit for farmers.
 - » **Rural Prosperity and Resilience Program:** A targeted program to address underemployment in rural areas, focusing on youth, women, and marginalized farmers.
- Through these initiatives, the government

aims to achieve agricultural self-sufficiency and improve the livelihoods of farmers.

- **MSMEs: Boosting Small and Medium Enterprises:** MSMEs contribute significantly to India's economy, accounting for nearly 45% of exports. The Union Budget 2025-26 proposes several reforms to enhance the competitiveness and scalability of MSMEs:

- » **Enhanced Investment and Turnover Limits:** The classification limits for MSMEs have been increased, allowing for broader growth and greater benefits for smaller businesses.

- » **New Entrepreneurship Scheme:** Term loans up to ₹2 crore will be provided to 5 lakh women, Scheduled Castes, and Scheduled Tribes entrepreneurs over the next five years.

- » **National Manufacturing Mission:** A comprehensive initiative to strengthen the 'Make in India' campaign, focusing on innovation and export potential.

- » **Toy Industry Development:** The government aims to position India as a global hub for toy manufacturing through a dedicated scheme.

- By strengthening MSMEs, the budget seeks to create a more resilient and diversified economy, fostering innovation and job creation.

- **Investment: Infrastructure and Human Capital Development:** Investment plays a crucial role in driving economic growth, and the Union Budget places a strong emphasis on both infrastructure development and human capital.

- » **Human Capital Investment:** The government will establish 50,000 Atal Tinkering Labs in government schools, provide BharatNet broadband access to rural schools and health centers, and digitize Indian language textbooks through the Bharatiya Bhasha Pustak Scheme. Moreover, Five National Centres of Excellence for Skilling will be set up to equip youth with skills suited for global job markets.

- » **Infrastructure Development:** A 3-year pipeline for Public-Private Partnership (PPP) projects will be created, and ₹1.5 lakh crore has been allocated as 50-year interest-free loans to states for capital expenditure.

Additionally, an Asset Monetization Plan targeting ₹10 lakh crore for reinvestment in new projects is proposed.

- » **Urban and Water Infrastructure:** The Jal Jeevan Mission has been extended until 2028, focusing on water quality and infrastructure maintenance, while the Urban Challenge Fund of ₹1 lakh crore will facilitate sustainable urban development.
- These initiatives will ensure that investments are made in both physical and human capital, paving the way for sustainable and inclusive growth.
- **Exports: Expanding India's Global Trade:** India's exports are crucial for economic growth, and the Union Budget outlines measures to enhance India's presence in global markets. The Export Promotion Mission aims to support MSMEs in accessing international markets through:
 - » **BharatTradeNet (BTN):** A unified digital platform for trade documentation and financing, aimed at simplifying trade processes.
 - » **Export Infrastructure Development:** Investment will be made in warehousing and infrastructure, particularly for perishable goods and air cargo, to support export growth.
 - » **Manufacturing for Industry 4.0:** Domestic capacities for high-tech industries, such as electronics and automation, will be enhanced.

Reforms: The Backbone of Growth

- The Union Budget includes critical reforms aimed at improving the ease of doing business and creating a more investor-friendly regulatory environment.
 - » **FDI in Insurance:** The government has raised the Foreign Direct Investment (FDI) cap in the insurance sector from 74% to 100%, encouraging foreign investment in the sector.
 - » **Regulatory Reforms:** The establishment of a High-Level Committee on Regulatory Reforms and the introduction of the Investment

Friendliness Index will streamline regulations and promote competitive governance.

- » **Decriminalization of Laws:** The Jan Vishwas Bill 2.0 will decriminalize over 100 provisions in various laws, reducing the compliance burden for businesses.
- These reforms are intended to enhance India's investment climate, making it easier for businesses to grow and thrive.

Fiscal Consolidation & Taxation

- **Fiscal Deficit:** The fiscal deficit for 2024-25 is estimated at 4.8% of GDP, with a target of 4.4% for 2025-26.
- **Direct Taxation Reforms:** The government has introduced a revised tax structure that offers relief to the middle class:
 - » No income tax on earnings up to ₹12 lakh per annum.
 - » Tax deductions for senior citizens' interest income and rental income have been increased.
- **Customs & Indirect Taxation:** Several reforms have been announced to support domestic manufacturing, including exemptions for critical minerals and life-saving drugs.

Conclusion:

The Union Budget 2025-26 presents a comprehensive blueprint for India's growth, addressing both immediate challenges and long-term objectives. By focusing on agriculture, MSMEs, investment, and exports, the budget lays the foundation for a self-reliant and globally competitive India. With reforms to improve the ease of doing business, enhance fiscal discipline, and promote inclusive growth, the government aims to transform India into a developed nation, achieving the vision of Viksit Bharat. The targeted schemes and strategic investments across sectors will propel India toward sustainable development, ensuring prosperity for all sections of society. This budget is poised to drive India into a new era of economic growth, with a clear focus on social equity, technological innovation, and global competitiveness.

The 8th Pay Commission: An Overview of Objectives, Impact, and Implications

The 8th Pay Commission was recently proposed by the Government of India to revise the salary structures, allowances, and pension schemes for central government employees and pensioners. Constituted approximately every ten years, pay commissions are integral to ensuring equitable and inflation-adjusted remuneration for government employees.

Understanding the Pay Commission:

- ❖ A pay commission is a specialized body set up by the Indian government to review and recommend revisions to the salary and pension structures of government employees. The key objectives of such commissions are:
 - » **Addressing Inflation:** Adjusting salaries to counter rising living costs.
 - » **Parliamentary Parity:** Ensuring government compensation aligns with private-sector standards.
 - » **Job Satisfaction:** Motivating employees by periodically revising remuneration structures.
 - » **Macroeconomic Considerations:** Supporting broader economic growth by increasing purchasing power.
- ❖ Since India's independence in 1947, seven pay commissions have been established. Each has brought about significant changes in compensation structures, addressing the evolving needs of the workforce and the economic landscape.

Historical Trends in Pay Commission Recommendations

- ❖ Historically, the implementation of pay commission recommendations has significantly influenced salary structures and government expenditure. For example:

Pay	Year	Fitment Factor	Impact on Salary
5th Pay	1996	1.40	Moderate Increase

6th Pay	2006	1.86	Significant Increase
7th Pay	2016	2.57	Substantial Increase
8th Pay	2026 (Expected)	2.28–2.86	Projected Significant Hike

- ❖ The 7th Pay Commission introduced significant changes, including raising the minimum basic pay from ₹7,000 to ₹18,000, increasing pensions, and enhancing allowances. The 8th Pay Commission is expected to build upon this foundation, aiming to address new challenges in a rapidly evolving economic environment.

The 8th Pay Commission: Key Details

- ❖ **Constitution and Timeline:** The Union Cabinet recently approved the establishment of the 8th Pay Commission. According to Minister of Information and Broadcasting Ashwini Vaishnaw, the commission's setup process, including appointing a chairman and two members, will commence soon. While its implementation is expected in 2026, preparatory consultations with central and state governments and stakeholders will ensure timely recommendations.

Expected Focus Areas

The 8th Pay Commission is likely to emphasize:

- ❖ **Inflation Adjustment:** Salaries and allowances will be aligned with inflationary trends, improving the quality of life for employees.
- ❖ **Fitment Factor Revisions:** Serving as a multiplier for calculating revised basic pay, the fitment factor under the 8th Pay Commission is speculated to range between 2.28 and 2.86. This could result in a 40–50% hike in basic salaries.
- ❖ **Allowance Revisions:** A restructuring of revenue allowances and other benefits is expected alongside salary hikes.
- ❖ **Multi-Sectoral Impact:** From public sector undertakings (PSUs) to banking and engineering,

the revisions are anticipated to have a far-reaching influence across sectors.

Sectoral Impacts:

- ❖ **Central Government Employees and Pensioners:** Approximately 49 lakh employees and 65 lakh pensioners stand to benefit from the revised salary and pension structures. The proposed reforms will address the growing demands for better compensation amidst rising inflation.
- ❖ **Public Sector Undertakings (PSUs):** Maharatna and Navratna PSUs, such as ONGC and NTPC, are expected to revise salary structures significantly, thereby retaining top talent and ensuring competitive compensation.
- ❖ **Engineers in Government Jobs:** Organizations like ISRO, BARC, and Indian Railways are likely to witness an upward revision in salary packages, enhancing motivation and productivity among engineers.
- ❖ **Banking Sector Employees:** Public sector banks may also adopt pay commission recommendations, leading to better remuneration and benefits for employees in this sector.

Economic Implications:

- ❖ The implementation of the 8th Pay Commission will not only improve employee well-being but also stimulate economic growth through increased consumption.
- ❖ As government employees and pensioners benefit from higher disposable incomes, the multiplier effect will likely boost demand across sectors, contributing to the nation's GDP growth.
- ❖ However, the government must also balance the fiscal burden associated with higher expenditures,

as seen during the implementation of the 7th Pay Commission, which led to a ₹1 lakh crore increase in fiscal outlays.

Challenges and Considerations:

- ❖ **Inflation Management:** While the revised salaries will offset inflation for employees, the increased liquidity in the economy could exert upward pressure on prices, necessitating effective monetary policies.
- ❖ **Fiscal Responsibility:** Balancing the demands of government employees with the need for fiscal discipline remains a critical challenge. The government must ensure that the pay commission's recommendations do not compromise long-term economic stability.
- ❖ **Stakeholder Consultations:** Effective dialogue with central and state governments, employee unions, and other stakeholders will be essential for formulating equitable recommendations that address diverse concerns.

Conclusion:

The 8th Pay Commission represents a pivotal step toward ensuring fair and competitive compensation for central government employees and pensioners. By addressing inflationary pressures, enhancing allowances, and fostering multi-sectoral growth, the commission will play a crucial role in shaping India's economic landscape. However, the government must strike a balance between employee welfare and fiscal prudence to ensure sustainable implementation. As preparations commence, the 8th Pay Commission offers a unique opportunity to realign compensation structures with the nation's developmental aspirations.

Short Issues

NITI Aayog's Fiscal Health Index

Why in News:

NITI Aayog has launched the Fiscal Health Index (FHI) 2025 to offer a detailed assessment of the fiscal performance of Indian states. This index evaluates states' fiscal health and aims to guide reforms for

promoting sustainable economic growth. The report titled 'Fiscal Health Index 2025' ranked States for 2022-23, covering 18 major States that drive the Indian economy in terms of their contribution to India's GDP, demography, total public expenditure, revenues, and overall fiscal stability.

What is the Fiscal Health Index (FHI)?

- The Fiscal Health Index (FHI) is a comprehensive initiative by NITI Aayog to assess and monitor the

fiscal stability of states across India. The index is based on five key sub-indices:

- » Quality of Expenditure
- » Revenue Mobilization
- » Fiscal Prudence
- » Debt Index
- » Debt Sustainability
- The index is derived using data from the Comptroller and Auditor General of India (CAG) for the fiscal year 2022-23 and incorporates trends from 2014-15 to 2021-22. The FHI focuses on states that contribute significantly to India's GDP, demographics, public expenditure, and revenue generation.

Key Highlights:

- **Top Performers (achievers)**
 - » **Odisha:** Ranked first with a score of 67.8, excelling in debt management and sustainability.
 - » **Chhattisgarh:** Secured the second position with 55.2, demonstrating strong fiscal prudence and balanced fiscal policies.
 - » **Goa:** Achieved third place with a score of 53.6, reflecting its balanced approach to fiscal management and revenue generation.
- **Underperformers- (aspirational)**
 - » **Kerala:** Scored 29.7, struggling with poor debt sustainability and low quality of expenditure.
 - » **Punjab:** With a score of 28.4, Punjab faces challenges with low revenue mobilization and high fiscal deficits.
 - » **West Bengal:** Scored 27.8, grappling with issues related to debt index and overall fiscal management.
 - » **Andhra Pradesh:** Ranked last with a score of 26.9, hindered by consistently high fiscal deficits.
- **Top-performing states like Odisha, Chhattisgarh, Goa, and Jharkhand have demonstrated:**
 - » High capital outlay of up to 4% of their Gross State Domestic Product (GSDP)
 - » Effective revenue mobilization
 - » Revenue surpluses
 - » Low interest payments (around 7% of revenue receipts)

Significance of the FHI:

- The Fiscal Health Index promotes fiscal discipline by providing data-driven insights, encouraging healthy competition among states. It also helps in

identifying state-specific challenges and guiding the necessary reforms to address fiscal imbalances.

- It supports cooperative federalism and aligns with India's vision of achieving a "Viksit Bharat @2047" by tracking fiscal health annually and ensuring continuous improvement.

MSP on jute

Why in News:

In a significant move to support farmers and enhance the jute industry, the Union Cabinet has approved an increase in the Minimum Support Price (MSP) for raw jute. The new MSP for the 2025-26 marketing season has been set at Rs 5,650 per quintal, reflecting a Rs 315 rise from the previous year's price.

Comparison to 2024-25 MSP:

- The hike for the 2025-26 surpasses the Rs 285 increase implemented for the 2024-25 marketing season when the MSP was raised to Rs 5,335 per quintal. This latest increase is expected to further incentivize farmers to grow jute, which is seen as a crucial step to boost jute production in the country.
- By raising the MSP, the government is not only providing better returns for jute farmers but is also promoting sustainability in the jute sector, which plays a vital role in the rural economy.

About Minimum Support Price (MSP):

- Minimum Support Price (MSP) is the minimum price at which the government guarantees to purchase certain crops from farmers.
- It is considered a protective measure that ensures farmers receive a price that is remunerative and protects them from market fluctuations that might lead to losses.
- The MSP serves as a safety net for farmers, ensuring they have a guaranteed income for their produce, especially in times of market volatility.

Key Features of MSP:

- **Government Procurement:** The MSP is the price at which government agencies, such as the Food Corporation of India (FCI) and other state agencies, procure crops from farmers. This procurement happens if market prices fall below the MSP, ensuring farmers are not forced to sell their produce at a loss.
- **Recommendations by CACP:** The Commission for Agricultural Costs and Prices (CACP), which

operates under the Ministry of Agriculture, is responsible for recommending MSPs. The commission evaluates the cost of production, trends in market prices, and other factors to determine an appropriate MSP for various crops. It primarily recommends MSPs for 23 crops, including 22 mandated crops and the Fair and Remunerative Price (FRP) for sugarcane. However, MSP is declared for 25 crops, including toria and de-husked coconut.

- **No Statutory Backing:** While MSP plays a critical role in safeguarding farmers' income, there is no statutory backing or law mandating its enforcement. The government is not legally obligated to procure crops at the MSP, even if market prices fall below the announced price. Hence, the MSP acts as a guideline rather than a legally enforceable price.

Conclusion:

MSP is a crucial tool in India's agricultural policy, aimed at ensuring farmers receive a fair price for their produce. While it offers some financial security, the absence of legal backing means the system is dependent on the government's willingness to intervene in the market. This makes MSP a vital, though sometimes controversial, part of the agricultural landscape, ensuring that farmers are protected from drastic price drops and encouraging them to invest in and expand crop production.

Diamond Imprest Authorization (DIA) Scheme

Why in News:

To address declining exports and job losses in India's diamond industry, the Department of Commerce has introduced the Diamond Imprest Authorization (DIA) Scheme, effective from April 2025. This initiative aims to reinforce India's position as a global leader in the diamond trade while providing targeted support to exporters and protecting domestic interests.

About the DIA Scheme:

- The scheme seeks to boost India's diamond exports, promote value addition, and maintain the country's dominance in the global diamond industry.
- **Key Provisions:**
 - » **Duty-Free Imports:** Allows the import of

natural cut and polished diamonds of less than 0.25 carats (25 cents) without paying duty.

- » **Value Addition Mandate:** Exporters must ensure a minimum value addition of 10% to qualify for the benefits of the scheme.

Eligibility Criteria

- **Who Can Apply?**
 - » Only two-star export houses and above are eligible.
 - » Companies with an annual export revenue of \$15 million or more.
- **Definition of Two-Star Export Houses:** Businesses that export goods worth at least \$15 million annually.

Significance of the Scheme:

- **Global Alignment:** The scheme aligns with international practices of beneficiation, as seen in diamond-rich nations like Botswana, Namibia, and Angola, where local processing is mandatory.
- **Enhancing Competitiveness:** Rising costs and competition from mining countries have challenged India's diamantaires. The scheme levels the playing field, preventing companies from relocating operations abroad.
- **Encouraging Innovation:** By reducing input costs and promoting advanced cutting and polishing techniques, the scheme fosters innovation in the diamond industry.

Impact on the Diamond Industry:

- **Export Trends:** India processes 90% of the world's diamonds but has faced a sharp decline in exports. Exports fell to \$32.71 billion in FY24, the lowest in three years, from \$37.96 billion in FY23 and \$38.94 billion in FY22.
- **Employment Creation:** The labor-intensive nature of the diamond industry means the scheme can generate significant employment opportunities across the value chain, from artisans to processing units.
- **Industry Support:** The scheme has potential to reduce costs, encourage innovation, and sustain India's leadership in the global diamond trade.

Challenges and Opportunities

- **Challenges:**
 - » Rising production costs and a decline in demand from key markets like the US and China.
 - » Increasing competition from mining nations

that emphasize local beneficiation and value addition.

- **Opportunities:**
 - » The scheme can encourage India's diamond cutters to adopt advanced technologies and processes, ensuring competitiveness in the global market.
 - » It provides a framework for long-term growth while ensuring job creation and economic stability.

Why the DIA Scheme is Crucial for India

- India's gems and jewellery exports have long been a significant contributor to the country's economy, with major markets including the US, UAE, and Hong Kong. However, the recent decline in exports highlights the need for targeted interventions like the DIA Scheme.
- The initiative not only addresses immediate challenges but also demonstrates India's commitment to fostering innovation and ensuring its continued leadership in the diamond industry.

India: World's Fastest-Growing Major Economy

Why in News:

According to the January 2025 edition of the World Bank's Global Economic Prospects (GEP) report, India's economy is expected to grow at a steady rate of 6.7% in FY26 and FY27, significantly surpassing the global average of 2.7%. This highlights India's economic resilience. India has emerged as the world's fastest-growing major economy, projected to maintain its economic dominance for the next two fiscal years.

About the Report:

- The Global Economic Prospects (GEP) report is a key publication by the World Bank Group, offering insights into global economic trends and projections. It focuses on the growth trajectories and challenges of emerging markets and developing economies.
- Published twice a year—January and June—it serves as a vital resource for policymakers, economists, and researchers.

Key Findings of the Report

- **India's Economic Growth:** India will remain the fastest-growing large economy, with a consistent 6.7% annual growth rate during FY26 and FY27.

- **Sectoral Growth:** India's services sector will continue to thrive, while manufacturing is expected to strengthen, supported by government initiatives.
- **Private Consumption:** Stronger labor markets, increased credit access, and low inflation will drive private consumption in India.
- **Investment Growth:** Investment in India will remain stable, fueled by private investments, better corporate balance sheets, and favorable financing conditions.
- **Global Growth Comparison:** The global economy is projected to grow at 2.7%, with India outpacing this growth.
- **Transformation of Emerging Markets:** Emerging Market and Developing Economies (EMDEs) have transformed significantly, now contributing approximately 45% of global GDP, up from 25% at the beginning of the century.

Initiatives Driving Growth in India:

- **PM GatiShakti National Master Plan:** Focuses on enhancing connectivity across the country through modern roads, railways, ports, and logistics.
- **Startup India:** Aimed at promoting innovation and entrepreneurship, this initiative provides financial support, mentorship, and tax incentives to startups.
- **Production Linked Incentive (PLI) Scheme:** Encourages investment in sectors like electronics, automotive, and textiles by offering financial incentives to increase production.

About the World Bank:

- The World Bank, founded in 1944, is a global financial institution focused on providing financial and technical assistance to developing countries, aiming to reduce poverty and foster shared prosperity. The World Bank Group consists of five institutions:
 - » International Bank for Reconstruction and Development (IBRD)
 - » International Development Association (IDA)
 - » International Finance Corporation (IFC)
 - » Multilateral Guarantee Agency (MIGA)
 - » International Centre for the Settlement of Investment Disputes (ICSID)
- India is a member of the World Bank but not a member of ICSID. The World Bank is a specialized agency of the United Nations, with 189 member countries.

- Notable reports published by the World Bank include the Human Capital Index, the World Development Report, and the Global Economic Prospects.

SEBI's 'Sachetisation' Plan for Mutual Fund Investments

Why in News:

The Securities and Exchange Board of India (SEBI) has launched a new initiative to promote financial inclusion and expand access to mutual funds, particularly among low-income and underserved communities.

- The plan involves offering Systematic Investment Plans (SIPs) starting as low as Rs 250 per month, a move designed to break down the barriers to entry for smaller investors.
- This initiative is referred to as "sachetisation," aiming to make mutual fund investments more accessible to a wider population.

About Sachetisation:

- Sachetisation is a concept borrowed from the Fast-Moving Consumer Goods (FMCG) sector, where small, affordable product sizes cater to price-sensitive consumers.
- This strategy has successfully reached rural and low-income populations who could not afford larger quantities.
- SEBI plans to apply this model to the mutual fund industry, offering small ticket SIPs as a means to provide investment opportunities to those at the economic bottom of the pyramid.

Why Rs 250 SIPs?

- Currently, most mutual funds require a minimum SIP of Rs 500, which is beyond the financial reach of many individuals. SEBI's proposal to reduce this threshold to Rs 250 aims to lower the entry barrier, enabling people from lower-income groups to start investing.
- This move intends to empower these individuals financially and encourage mutual fund companies to expand their services into underserved regions, thus bridging the gap in investment participation.

How will It Work?

- SEBI's consultation paper outlines that the Rs 250 SIPs will primarily target new investors from low-income backgrounds. Existing investors will not be eligible.

- The plan allows up to three Rs 250 SIPs, each with a different Asset Management Company (AMC). These SIPs will be offered at discounted rates, with any additional SIPs beyond the first three being excluded from the discount.
- These small ticket SIPs will be limited to equity schemes only, excluding high-risk options like debt funds, thematic funds, and mid-cap or small-cap equity funds, ensuring that first-time investors are not exposed to excessive risk.
- Additionally, the growth option will be selected, meaning that profits will be reinvested to increase the value of the investment.

Impact on India's Financial Inclusion :

- SEBI's sachetisation plan could bring millions of new investors into the mutual fund market, particularly in underserved sectors. This expansion could lead to more domestic investment in India's equity markets, providing greater stability against the volatility caused by foreign investors.
- By offering smaller, affordable SIPs, SEBI aims to make the financial benefits of India's capital markets more equitable, helping new investors build wealth over time. As mutual funds continue to grow, these small ticket SIPs could serve as the first step for many on their investment journey.

Z-Morh tunnel

Why in News:

PM modi recently inaugurated Z-Morh tunnel in in Sonamarg in Jammu and Kashmir. The Z-Morh tunnel is part of a broader initiative to enhance infrastructure in Jammu & Kashmir, including the Zoji La Tunnel and other significant projects like the Udhampur-Srinagar-Baramulla rail link, which will contribute to making the region more connected and accessible.

About Z-Morh Tunnel:

- The Z-Morh Tunnel is 6.4 km long and located in Ganderbal, Kashmir, designed to bypass avalanche-prone areas along the Srinagar-Leh highway.
- The construction of the Z-Morh tunnel began in May 2015 and was completed in 2024. The tunnel had its soft opening in February 2024, and its official inauguration took place in January 2025.
- The project initially began under BRO in 2015, but the development of the tunnel was later handed

over to the National Highways and Infrastructure Development Corporation Limited (NHIDCL), not BRO.

- The Z-Morh tunnel is equipped with advanced technologies, including real-time traffic updates, an intelligent traffic management system, and other features that ensure seamless connectivity and enhance the overall travel experience.

Significance of the tunnel:

- The Z-Morh tunnel will significantly enhance defense logistics by ensuring easier, all-weather access for defense forces between Sonamarg and Srinagar, which is crucial for strategic operations in Jammu & Kashmir and Ladakh.
- The tunnel is expected to drive economic growth by facilitating smoother transportation of goods, boosting trade, and attracting more tourists to Sonamarg. It will also support the development of tourism and local businesses, especially by making the region accessible year-round.
- By improving connectivity between remote regions of Jammu & Kashmir and Ladakh, the tunnel fosters socio-cultural integration, enhancing mobility and accessibility for local populations and promoting unity across these areas.
- The Z-Morh tunnel will open Sonamarg to year-round tourism, including making it a potential ski destination. This will create new economic opportunities and help develop Sonamarg into a major tourist hub.

What is Zojila Tunnel?

- **Location:** The Zojila Tunnel is under construction at an altitude of 11,578 feet (around 3,500 meters) on the Srinagar-Leh Highway in Jammu & Kashmir.
- The tunnel aims to provide all-weather connectivity between Srinagar and Leh on NH-1, ensuring access throughout the year.
- **Total Length:** The tunnel will be 14.15 km long.
- **Significance:** It will be India's longest road tunnel and Asia's longest bi-directional tunnel.
- **Dimensions:** The tunnel will be 9.5 meters wide and 7.57 meters high, designed in the shape of a horseshoe.

World Economic Situation and Prospects (WESP)

Why in News:

The United Nations has released its World Economic Situation and Prospects (WESP) 2025 report, forecasting global economic growth to remain subdued at 2.8% in 2025, the same as the previous year.

Key Findings of the WESP 2025 Report:

- **Global Growth Remains Subdued:** Global economic growth is projected at 2.8% for both 2024 and 2025, reflecting ongoing uncertainty due to high debt levels, slow productivity growth, and weak investment. The rate is still below the pre-pandemic average of 3.2%.
- **Resilience Despite Shocks:** The global economy has displayed resilience against multiple economic shocks, but underlying structural issues such as slow productivity growth and high debt remain a drag on progress.
- **Regional Growth Variations:** Growth trajectories across regions vary. While developed economies like the US and Europe face slower growth, emerging economies like India, East Asia, and parts of Africa show more promising expansion rates.
- **Inflation and Monetary Policy:** Global inflation is projected to decline slightly from 4% in 2024 to 3.4% in 2025, providing some relief for households and businesses. Many central banks are expected to lower interest rates as inflation eases, although developing countries could still face inflation challenges.
- **Trade and Geopolitical Risks:** Global trade is expected to grow at a modest 3.2% in 2025, with tensions in trade policies and geopolitical conflicts posing risks to stability.

India's Prospective Growth in 2025:

India is one of the standout performers in the WESP 2025 report, with a projected GDP growth rate of 6.6%, making it the fastest-growing major economy in South Asia. Several factors contribute to this positive outlook:

- **Private Consumption and Investment:** India's strong private consumption and increased investment, particularly in infrastructure, are key drivers of its economic growth. The government's push for capital expenditure (CapEx) in infrastructure is expected to yield significant long-term economic benefits, including improved connectivity, industrial growth, and job creation.
- **Rupee Pressure Easing:** The Indian rupee, which has been under pressure due to the strengthening US dollar, is expected to stabilize in the coming

year. The report points to easing depreciation pressures on South Asian currencies, including the rupee, due to a loosening of US monetary policies, which will attract more investments into the region. This could help boost India's foreign exchange reserves and provide some breathing room for the economy.

- **Sectoral Growth Drivers:** India's manufacturing and services sectors are projected to continue expanding. In particular, India's growing presence in pharmaceuticals, electronics, and technology services will provide strong support for the country's export performance. Additionally, the favorable monsoon season in 2024 is expected to improve agricultural productivity in 2025, further bolstering the economy.
- **Labor Market and Gender Gaps:** While labor market indicators in India have remained strong, with urban unemployment stable at 6.6%, gender disparities persist. The report highlights that although women's participation in the labor force has improved, significant gaps remain, limiting the nation's overall productivity potential. Addressing these gender disparities could unlock further economic growth.
- **Critical Mineral Resources:** India possesses untapped reserves of critical minerals, such as rare earth elements, which could play a crucial role in the country's future economic development. The global demand for these minerals, essential for technology and green energy industries, presents India with a significant opportunity to leverage its natural resources for economic growth.

India's GDP Growth Forecast for FY25

Why in News:

The Ministry of Statistics and Programme Implementation (MoSPI) recently released the "First Advance Estimates" (FAEs) for India's GDP growth in FY25. These estimates forecast the country's economic output, based on available data and past trends.

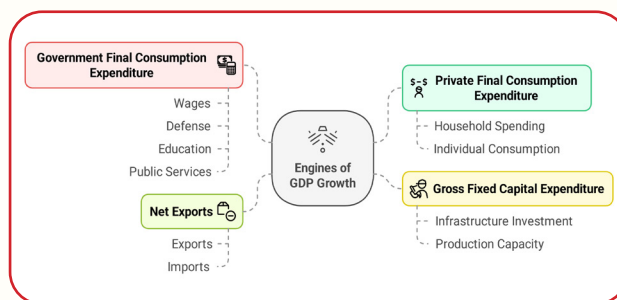
What is GDP?

- Gross Domestic Product (GDP) measures the monetary value of all final goods and services produced in a country within a specific period.

It reflects total economic output, excluding intermediate goods.

Four Key "Engines of GDP Growth":

- **Private Final Consumption Expenditure (PFCE):** Spending by individuals and households on goods and services.
- **Government Final Consumption Expenditure (GFCE):** Government spending on wages, defense, education, and public services.
- **Gross Fixed Capital Expenditure (GFCF):** Investments in infrastructure and production capacity.
- **Net Exports (NX):** Exports minus imports.



Formula for GDP Calculation:

- $GDP = Private\ Consumption + Gross\ Investment + Government\ Investment + Government\ Spending + (Exports - Imports)$

Difference between Nominal GDP and Real GDP

- Nominal GDP represents the total value of all goods and services produced within a country's borders in a specific time period (quarterly or annually), calculated using current market prices, which includes inflation. It is useful for calculating the size of an economy but does not adjust for inflation, potentially distorting views of economic growth.
- Real GDP is the nominal GDP adjusted for inflation, providing a clearer picture of actual growth by removing price increase effects. It is especially important for policymakers to design economic strategies and control inflation.

GDP Forecast for FY25

- India's GDP for FY25 is projected to reach Rs 324 lakh crores, reflecting a 9.7% growth compared to FY24. This places India's nominal GDP at approximately \$3.8 trillion, based on an exchange rate of 85 rupees per dollar. However, this estimate

is lower than the Rs 328 lakh crores projected in the Union Budget.

- **Nominal GDP:** Expected at Rs 324 lakh crores, reflecting a growth of 9.7% compared to FY24.
- **Real GDP:** Estimated at Rs 184.9 lakh crores, accounting for 57% of nominal GDP.
- While nominal GDP growth is positive, it shows signs of deceleration:
 - » Since FY20, India's real GDP has grown at an average rate of 4.8%, which is notably lower than the 7% growth observed after the 1991 economic reforms.
 - » Nominal GDP growth has also slowed, with annual increases falling below 10%, compared to the historical average of 13.5% between 2003-04 and 2018-19.

What's Impacting GDP Growth?

India's GDP is influenced by four main components:

- **Private Consumption (PFCE):** Contributing around 60% to GDP, low growth in private consumption hampers overall GDP expansion. It's expected to grow by 7.3% this year, but since FY20, it has grown at just 4.8%.
- **Government Spending (GFCE):** Accounting for 10% of GDP, government spending grew only 4.2% in FY25, reflecting limited fiscal push despite attempts to stimulate the economy.
- **Investments (GFCF):** Accounting for around 30% of GDP, investments are expected to grow by 6.3% in FY25. However, investment growth has been waning since 2014, with businesses remaining cautious amid low private consumption.
- **Net Exports:** India traditionally imports more than it exports, which negatively impacts GDP. However, the gap between imports and exports has narrowed in recent years.

Rural poverty declines sharply in FY24 at 4.86%: SBI research

Why in News:

A recent research report by the State Bank of India (SBI) has highlighted a significant reduction in rural and urban poverty in India.

Key Findings:

- **Rural Poverty Decline:** Rural poverty has fallen to 4.86% in 2023-24, down from 25.7% in 2011-12. This is mainly due to government support and

higher consumption among the poorest decile.

- **Urban Poverty Reduction:** Urban poverty decreased to 4.09% from 13.7% in 2011-12.
- **Impact of Government Programs:** Government initiatives, especially Direct Benefit Transfers (DBT), rural infrastructure development, and farmer income programs, have been key drivers of poverty reduction.
- **Consumption Inequality Decline:** Consumption inequality in both rural and urban areas has improved compared to the previous year.
- **Food Price Impact:** Fluctuations in food prices significantly affect overall consumption, particularly in rural areas where food expenditure is high.

Implications of the Findings:

- **Positive Trend in Poverty Reduction:** These findings suggest that overall poverty could decrease to 4-4.5%, with minimal extreme poverty.
- **Government Programs and Infrastructure Development:** The government's role in bridging the rural-urban income gap through infrastructure and welfare programs has been crucial.
- **Food Inflation's Role:** Food inflation impacts consumption in rural, lower-income states more than in high-income areas, damping demand.
- **Economic Disparities:** The study also highlights lower savings rates in states like Uttar Pradesh and Bihar, linked to high outward migration, while high-income states show better savings rates.

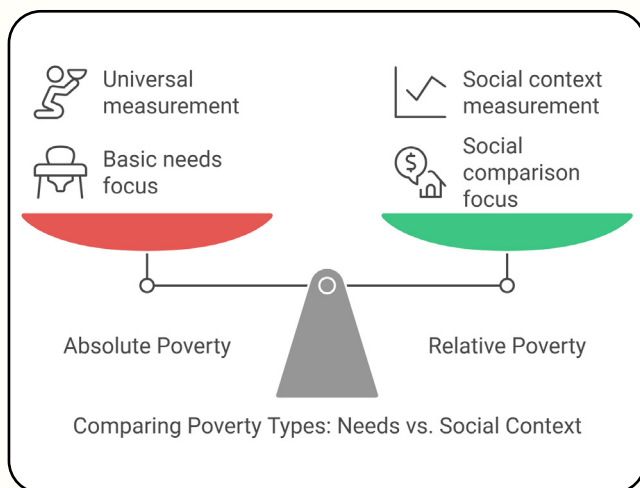
What is the Concern?

- **Rural-Urban Divide:** Despite poverty reduction, disparities in income and access to resources between rural and urban areas remain.
- **Potential Revisions:** Poverty estimates may change when the 2021 census is completed and the new rural-urban population share is available.
- **Vulnerability to Food Inflation:** Rural areas are more affected by rising food prices, impacting their consumption patterns.
- **Sustainability of Government Programs:** The effectiveness and long-term sustainability of government programs are concerns, as these initiatives must continue to adapt to changing economic conditions.

Poverty:

- Poverty refers to the state in which individuals or communities lack the financial resources and essentials necessary for a minimum standard of

living. The World Bank defines it as a condition of deprivation in well-being, encompassing low income, poor health, education, limited access to clean water, and a lack of capacity to improve one's life.



Types of Poverty:

- **Absolute Poverty:** Refers to a condition where household income is insufficient to meet basic living standards, including food, shelter, and housing. Absolute poverty can be measured across countries and over time. The World Bank updated the poverty line in 2022 to \$2.15 per day.
- **Relative Poverty:** Defined from a social perspective, relative poverty measures how individuals or households compare to the living standards of the surrounding population. It is often measured as the proportion of people living below a certain percentage of the median income.

Revision of Wholesale Price Index (WPI) Base Year

Why in News:

The Government of India has constituted a Working Group to revise the current series of the Wholesale Price Index (WPI) from its base year of 2011-12 to 2022-23. The revision aims to adapt the WPI to the structural changes in the economy, ensuring it remains a relevant and reliable indicator of price movements in the country.

Composition of the Working Group:

- The Working Group consists of experts from various

fields, including economic advisors, statisticians, representatives from government departments, economists, and members from industry and academia. Notably, several non-official economists have been included to bring diverse perspectives.

About Wholesale Price Index (WPI)

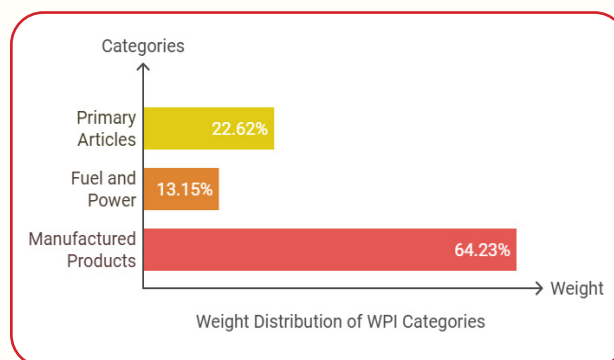
- The Wholesale Price Index (WPI) measures the changes in the prices of goods sold in bulk between businesses before they reach the consumer market.
- Published monthly by the Office of Economic Advisor, Ministry of Commerce and Industry, WPI helps track inflation trends in sectors like manufacturing and construction. A rise in WPI signals inflationary pressure, while a decline reflects lower inflation.

WPI vs. CPI:

- While WPI tracks wholesale price changes of goods, the Consumer Price Index (CPI) tracks the average price that households pay for goods and services.
- WPI is restricted to goods at the wholesale level, whereas CPI includes both goods and services. The Reserve Bank of India (RBI) now uses CPI for setting monetary policy, as it better reflects consumer inflation.

Revisions to WPI:

- In 2017, the WPI base year was revised from 2004-05 to 2011-12 to align with economic indicators like GDP and Index of Industrial Production (IIP). This update improved the accuracy of the WPI in reflecting structural changes in the economy.



Calculation of WPI:

- WPI is calculated using a weighted average of prices from a basket of goods, categorized into three groups:

- » **Primary Articles (22.62%):** Includes raw goods like food and agricultural products.
- » **Fuel and Power (13.15%):** Includes energy products such as oil and coal.
- » **Manufactured Products (64.23%):** Includes industrial products and machinery.
- The WPI tracks 697 items in total, including 117 primary goods, 16 fuel items, and 564 manufactured products.

Significance:

- The revision of the WPI base year is crucial for keeping the index aligned with the evolving structure of the Indian economy. The updated index will offer a more accurate reflection of price changes, supporting better economic decision-making for policy, business, and financial planning.

Cabinet Extends DAP Special Package and Continuation of Crop Insurance Schemes

Why in News:

Union Cabinet recently announced to extend the one-time special subsidy for Diammonium Phosphate (DAP) fertilizer and approved the continuation of two crucial agricultural insurance schemes, ensuring financial support and risk coverage for farmers in the upcoming years.

Key Cabinet Decisions:

- **Extension of DAP Special Package:**
 - » The Union Cabinet decided to extend the one-time special subsidy on DAP at a rate of ₹3,500 per metric tonne, effective from January 1, 2025, until further notice.
 - » The subsidy is aimed at maintaining the affordability of DAP fertilizer, a crucial input for crop production, thus ensuring its smooth availability to farmers.
 - » The tentative budget allocation for this special package is approximately ₹3,850 crore, signifying the government's commitment to farmer welfare despite global challenges.
- **Continuation of Crop Insurance Schemes:**
 - » The government approved the continuation of the Pradhan Mantri Fasal Bima Yojana (PMFBY) and Restructured Weather Based Crop Insurance Scheme (RWBCIS) until 2025-

26, with a substantial financial allocation of ₹69,515.71 crore.

- » These schemes are designed to offer risk coverage to farmers in the event of natural calamities, providing them financial stability during unforeseen crop losses.
- » Additionally, the Cabinet also approved the setting up of the Fund for Innovation and Technology (FIAT), with ₹824.77 crore allocated for improving the technology and effectiveness of these insurance schemes.
- **Weather Information and Network Data System (WINDS):**
 - » To enhance weather-related data accuracy, the WINDS initiative will be implemented in 2024-25. This system will bolster weather forecasting and provide farmers with timely and precise weather updates to aid in better crop planning and risk mitigation.
- **MoU on Non-Basmati White Rice Trade:**
 - » The Cabinet also approved a Memorandum of Understanding (MoU) between India's Ministry of Cooperation and Indonesia's Ministry of Trade for the trade of Non-Basmati White Rice (NBWR). The agreement allows for the trade of up to one million metric tonnes of NBWR annually, based on production and international market prices.

Benefits of the Decisions:

- **Affordability of Fertilizers:** The special DAP subsidy will help farmers manage the rising costs of inputs, particularly fertilizers, ensuring that agricultural production remains economically viable. This will lead to improved crop yields, benefiting both farmers and the agricultural economy as a whole.
- **Financial Protection Against Natural Calamities:** By continuing the PMFBY and RWBCIS schemes, the government is providing farmers with a financial safety net in case of natural disasters. This ensures that farmers do not face crippling losses and can recover from damage to their crops, thus fostering financial stability in rural areas.
- **Technological Advancements in Insurance:** The creation of the FIAT and the implementation of WINDS will enhance the technological infrastructure of agricultural insurance, enabling more accurate weather predictions and smoother insurance claims processing. This ensures that

farmers are better equipped to handle risks associated with unpredictable weather.

Continuation of

PM Fasal Bima Yojana and Restructured Weather Based Crop Insurance Scheme

Cabinet approves continuation of the two schemes till 2025-26

- Overall outlay of ₹69,515.71 Crore from 2021-22 to 2025-26
- Cabinet has also approves creation of Fund for Innovation and Technology with Corpus of ₹824.77 Crore
- Fund to be utilised towards funding technological initiatives under the scheme namely, YES-TECH, WINDS, etc as well as R&D
- Fund to cause
 - Large scale technology infusion in implementation of the scheme
 - Increasing transparency and claim calculation and settlement



- Economic Growth and Global Trade:** The MoU on non-basmati rice trade with Indonesia will open up new markets for Indian rice exporters, increasing trade opportunities and contributing to India's agricultural export growth. This is an important step towards strengthening India's position in global agricultural markets.

Financial Stability Report

Why in News:

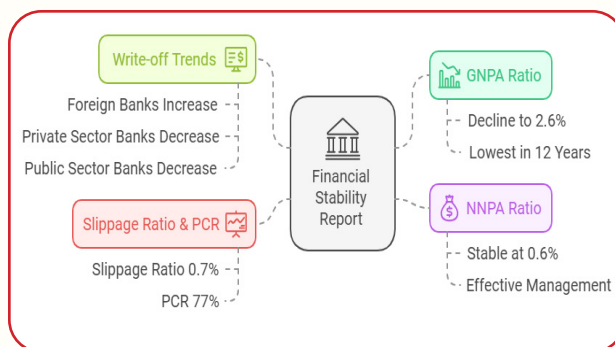
The asset quality of Scheduled Commercial Banks (SCBs) in India has significantly improved, as per the Reserve Bank of India's (RBI) December 2024 Financial Stability Report (FSR). This report sheds light on the key developments in the banking sector, focusing on the progress made in addressing non-performing assets (NPAs) and the resilience of the financial system.

Key Highlights from Financial Stability Report (FSR):

- Decline in Gross Non-Performing Asset (GNPA) Ratio:** The most notable development is the reduction in the Gross Non-Performing Asset (GNPA) ratio, which dropped to 2.6% as of September 2024, the lowest in 12 years. This

marks a significant improvement in managing bad loans, reflecting the overall health of SCBs' loan portfolios.

- Net Non-Performing Asset (NNPA) Ratio:** The Net NPA (NNPA) ratio remained stable at 0.6%, indicating effective management of bad loans by setting aside adequate provisions. This shows that SCBs are maintaining a strong position in handling potential losses from non-performing assets.
- Slippage Ratio and Provisioning Coverage Ratio (PCR):** The slippage ratio, which measures new NPAs as a share of standard advances, slightly increased to 0.7%, but still remains manageable. The Provisioning Coverage Ratio (PCR) improved to 77%, due to proactive provisioning by Public Sector Banks (PSBs), reinforcing their financial strength.
- Write-off Trends Among Different Bank Categories:** The report noted that the write-off to GNPA ratio increased for Foreign Banks while slightly declining for Private Sector Banks (PVBs) and PSBs. Write-offs help in reducing the GNPA ratio, and the data shows banks are actively clearing bad loans from their books.



Others key findings:

- Indian banks have maintained strong capital buffers, contributing significantly to financial system stability.
- RBI's macro stress tests show that most Scheduled Commercial Banks (SCBs) are well-capitalized and can withstand shocks in adverse economic conditions.
- Non-banking financial companies (NBFCs) and the insurance sector also remain healthy, further bolstering the financial system's stability.
- A trend in the report shows a shift in the deposit profile of banks, with a decline in low-cost Current Account Savings Account (CASA) deposits in favor of term deposits.

- The shift towards higher interest rate brackets may affect Net Interest Margin (NIM), reflecting changing customer behavior due to higher interest rates.
 - Despite improvement in return on assets (RoA) and earnings before provisions and taxes, profitability remains largely unchanged due to the decline in NIM.
 - Despite global uncertainties, such as geopolitical tensions and fluctuations in global growth and inflation, the Indian financial system remains resilient. RBI's systemic risk survey (November 2024) showed confidence in India's financial system, with major risks identified as geopolitical conflicts, global economic evolution, and concerns over capital outflows and rupee depreciation.
 - India's household debt remains relatively low at 42.9% of GDP as of June 2024, compared to other emerging markets.
 - There has been an increase in household debt over the past three years, primarily due to an increase in the number of borrowers, rather than a rise in average indebtedness.
 - The increase in household debt signals a broader financial inclusion drive, with loans being used for consumption, asset creation (home and vehicle loans), and productive purposes (business and education loans).
- capital.
 - **Eligibility:** MSMEs must have a valid Udyam Registration Number to be eligible for the scheme.
 - **Loan Amount:** The scheme guarantees loans of up to Rs. 100 crore (Project costs may exceed this amount).
 - **Equipment/Machinery Cost:** At least 75% of the project cost must be spent on equipment and machinery.
 - **Repayment Period:**
 - » **Loans up to Rs. 50 crore:** Up to 8 years, with a 2-year moratorium on principal installments.
 - » **Loans above Rs. 50 crore:** The repayment schedule may be longer with an extended moratorium period.
 - **Upfront Contribution:** Borrowers need to deposit 5% of the loan amount at the time of guarantee application.
 - **Annual Guarantee Fee:**
 - » Nil in the first year of sanction.
 - » 1.5% p.a. for the next 3 years (on loan outstanding as of March 31 of the previous year).
 - » 1% p.a. thereafter.
 - **Scheme Duration:** The scheme will apply to all loans sanctioned under MCGS-MSME for 4 years from the issuance of operational guidelines or until a cumulative guarantee of Rs. 7 lakh crore is reached, whichever comes first.

Credit Guarantee Scheme for MSMEs

Why in News:

The Government of India has introduced the Mutual Credit Guarantee Scheme for MSMEs (MCGS-MSME) to provide financial support to micro, small, and medium enterprises (MSMEs). Announced in the Union Budget for FY 2025-26, the scheme aims to facilitate collateral-free loans for MSMEs to expand their operations, particularly through the procurement of equipment and machinery.

Key Features of the Scheme:

- The primary goal of the scheme is to enhance credit availability for MSMEs, enabling them to expand their manufacturing capabilities and contribute to the Make in India initiative. By reducing the dependence on collateral, the scheme seeks to empower MSMEs with easier access to debt

Expected Benefits:

- Enhances access to credit for MSMEs, reducing financial barriers to expansion.
- Strengthens manufacturing capacity by increasing investment in plant and machinery.
- Supports India's emergence as a global supply chain hub by boosting growth by fostering entrepreneurship and employment generation.

Conclusion:

The Mutual Credit Guarantee Scheme for MSMEs is a strategic intervention aimed at strengthening the MSME sector. By enabling collateral-free credit access, the scheme is expected to accelerate industrial expansion, boost manufacturing, and enhance India's competitiveness in the global market.



Internal Security

India's Strategic Challenges in Balancing Continental and Maritime Security Interests in the Indo-Pacific Region

Prime Minister Shri Narendra Modi recently dedicated three frontline naval combatants—INS Surat, INS Nilgiri, and INS Vaghsheer—to the nation during their commissioning at the Naval Dockyard in Mumbai, Maharashtra, on January 15, 2025. These platforms, all built indigenously at the Mazagon Docks, are central to the country's focus on "Atmanirbharta" (self-reliance) in defense. The triple commissioning of these platforms represents a step forward in India's ambition to bolster its maritime power and play a greater role in regional security, especially in the Indo-Pacific region.

However, despite these advancements, India faces a complex challenge in balancing its maritime aspirations with the demands of continental security. The geographical and strategic context of India, along with its defense budget constraints, complicates the achievement of its maritime goals.

Continental Security Prioritization:

- ❖ India's land security needs often take precedence over its maritime interests. The country is burdened by contested land borders, particularly in the Himalayas, which require a significant portion of its defense resources.
- ❖ India allocates approximately 85% of its military forces to land security, driven by ongoing standoffs with China in the Ladakh region. This commitment to land-based defense severely limits the resources available for naval expansion and modernization.

China's Dual Threat: A Maritime and Continental Challenge

- ❖ India faces a dual challenge from China. While

China's growing presence in the Indian Ocean is a direct threat to India's maritime interests, its increasing aggression along India's land borders, particularly in the Himalayas, demands India's attention.

- ❖ The China-Pakistan Economic Corridor (CPEC) and the growing presence of the People's Liberation Army Navy (PLAN) in the Indian Ocean only exacerbate this challenge.
- ❖ China is investing heavily in both naval expansion and infrastructure development, including in regions like Gwadar, Pakistan, which further strains India's ability to focus on both fronts simultaneously.

Indo-Pacific Rivalries and Strategic Alliances:

- ❖ India's role in the Indo-Pacific is also complicated by its participation in various strategic partnerships, notably the Quadrilateral Security Dialogue (QUAD) with the US, Japan, and Australia.
- ❖ While India's involvement in QUAD exercises, such as the Malabar Naval Exercise, strengthens its maritime capabilities, it also risks escalating tensions with China, which perceives these alliances as a direct challenge to its regional dominance.
- ❖ India's careful approach to avoid over-committing in these alliances, such as refraining from fully endorsing the Australia-UK-US (AUKUS) pact, reflects its need to maintain a balance between regional security dynamics and its strategic autonomy.
- ❖ India's maritime aspirations cannot be pursued

without considering the broader geopolitical and economic landscape of the Indo-Pacific region.

Budget Constraints and Economic Realities:

- ❖ India's defense budget, which stood at approximately \$84 billion in 2023, remains limited compared to major powers like the US and China. Both the US and China allocate a significant portion—around 25%—of their defense budgets to their respective navies.
- ❖ In contrast, India allocates only 17-18% of its defense budget to its navy. This disparity in funding severely restricts India's capacity to modernize and expand its naval forces at the pace required to match China's growing maritime capabilities.
- ❖ The limitations on naval spending have made it challenging for India to scale up its naval force and technological capabilities. Although the commissioning of INS Surat, a P15B Guided Missile Destroyer with 75% indigenous content, is an impressive step forward, it remains part of an ongoing effort to achieve self-reliance in defense.
- ❖ A more substantial and sustained investment in naval capabilities, particularly in indigenous shipbuilding and submarine production, is needed to meet India's maritime goals.

Geographical Constraints and Resource Allocation:

- ❖ India's geographical position further complicates its maritime aspirations. With long land borders to defend, including the contested Himalayan region, a significant portion of India's defense resources must be dedicated to land security.
- ❖ Additionally, India's strategic focus on securing island territories like the Andaman and Nicobar Islands, vital for its influence in the Indian Ocean, requires considerable investments in coastal and port defense, often diverting resources from broader naval expansion.
- ❖ India's reliance on vital chokepoints such as the Strait of Malacca for energy imports highlights the importance of maritime security. Securing these maritime routes is crucial for India's economic stability, making the need for a capable blue-water navy more urgent.

- ❖ However, the country's limited operational capacity and infrastructural constraints, such as outdated shipyards and port facilities, hamper its ability to enhance its naval reach, particularly in the South China Sea.

The Role of Indigenous Capabilities in Maritime Security:

- ❖ One of the major challenges to India's maritime ambitions is its reliance on foreign technology and platforms. Despite the indigenous shipbuilding successes symbolized by platforms like INS Surat, India continues to depend on foreign suppliers for many critical technologies, especially in ordnance and weapons systems.
- ❖ The success of India's Brahmos missile is a notable achievement, but the country must scale up indigenous research and development (R&D) in core areas of military capability to achieve true self-reliance.
- ❖ Indigenous R&D efforts have made slow progress, especially in developing advanced warships and submarines. The ongoing efforts to build nuclear-powered submarines like the INS Arihant under the "Make in India" initiative provide hope, but the path to sustained technological independence in the maritime domain remains a work in progress.

A Roadmap for Maritime Capability Enhancement:

- ❖ **Focus on Coastal Defense Systems:** Strengthening coastal surveillance and missile systems, along with enhancing naval air bases, will ensure near-sea dominance without overstretching the naval force. The Sagar Prahari Bal, deployed to enhance coastal and port security, is one example of India's efforts in this area.
- ❖ **Incremental Increase in Naval Budget:** While land security remains a priority, India should consider gradually reallocating resources from the army to the navy to enhance maritime modernization. This would ensure that the navy can expand its capabilities without compromising land defense priorities.
- ❖ **Strategic Partnerships:** Leveraging partnerships like QUAD and logistics agreements with the US and Australia can help reduce the costs of

maritime operations and capacity-building. These partnerships will enhance India's maritime security through joint exercises and collaborative technological advancements.

- ❖ **Dual-Use Infrastructure Development:** India should prioritize the development of ports and airstrips for both commercial and military use, ensuring a cost-effective expansion of maritime operations. The Chabahar Port in Iran, which serves both economic and strategic purposes, exemplifies this approach.
- ❖ **Strengthening Indigenous Capabilities:** The focus on indigenous shipbuilding, submarines, and defense technologies must be intensified. For instance, the success of INS Arihant underscores the importance of investing in self-reliant defense systems. The government must support the domestic defense industry to reduce reliance on foreign imports.

Conclusion:

India's strategic ambitions to become a major maritime power in the Indo-Pacific are aspirational but achievable. The commissioning of INS Surat, INS Nilgiri, and INS Vagsheer reflects India's growing maritime capabilities, but significant challenges remain. The need to balance continental defense priorities with maritime aspirations, particularly in the face of China's growing influence in the region, requires careful resource allocation and sustained investment in naval modernization. By focusing on indigenous R&D, strengthening coastal defense systems, and leveraging international partnerships, India can realize its maritime goals without compromising its land security commitments. The journey towards becoming a dominant maritime power in the Indo-Pacific region is long, but the steps taken thus far show promise for a stronger, self-reliant Indian Navy in the future.

Short Issues

Bharatpol Portal

Context:

Union Home Minister Amit Shah recently launched the Bharatpol portal in New Delhi. This initiative is designed to provide a robust mechanism for law enforcement agencies to track fugitives who have fled abroad. The portal is part of a broader effort to strengthen India's legal and law enforcement frameworks, which also includes the introduction of three new criminal laws.

About the Platform:

- The Bharatpol portal is a technological platform developed by the Central Bureau of Investigation (CBI). Its primary purpose is to connect Indian law enforcement agencies with INTERPOL, enabling real-time data sharing, issuance of Red Corner Notices, and enhanced communication with global law enforcement bodies.
- The portal is aimed at improving crime control measures and assisting in tracking criminals who may have fled India to evade justice.

The platform integrates five key modules:

- **Connect:** Facilitates the integration of Indian law

enforcement agencies with INTERPOL's National Central Bureau (NCB).

- **INTERPOL Notices:** Allows for the issuance of Red Corner Notices and other alerts globally.
- **References:** Facilitates international cooperation in investigations by enabling the sharing of references and assistance requests.
- **Broadcast:** Ensures immediate communication and swift responses to international requests for assistance.
- **Resources:** Supports the exchange of documents and training materials, fostering capacity-building initiatives for law enforcement agencies.

Benefits of Bharatpol and New Criminal Laws:

- **Faster Investigations:** By connecting Indian agencies to a global network, the portal facilitates quicker responses to data requests.
- **Efficient Criminal Tracking:** The portal aids in tracking fugitives who have fled India and evaded justice, helping ensure accountability.
- **International Collaboration:** It fosters greater cooperation between Indian and global law enforcement agencies, ensuring timely assistance

in criminal investigations.

- **Crime Prevention:** The portal's access to 19 different INTERPOL databases helps officers analyze crime patterns, leading to the development of more effective crime prevention strategies.

New platform for police assistance

Union home minister Amit Shah on Tuesday launched the Bharatpol portal to facilitate faster international assistance for agencies and speed up investigations

BHARATPOL	FIVE MODULES
Broadcast Hub for Assistance and Real-Time Action against Transnational Crimes via International Police Cooperation	Connect: Links CBI with all law enforcement authorities in India by including Interpol Liaison Officers and Unit officers
WHAT IS IT? A platform which integrates CBI (which is the National Central Bureau or nodal agency of Interpol in India) with state law enforcement agencies and the Centre, for sharing information on fugitives, criminal matters and processing requests for Interpol notices	Interpol notices: Rapid, secure and structured transmission of requests for Interpol notices
WHAT CHANGES? Earlier, states/UTs' police used to write to CBI and any queries were replied to through letters. The portal, available on CBI website, will allow frontline police officers to easily and promptly request international assistance from 195 Interpol member countries using standardised templates.	Interpol references: Facilitates assistance to Indian agencies in criminal matters and investigation abroad through Interpol channels
THINGS OF NOTE 1 The entire process will become paperless and faster now 2 It will enable easy drafting of Red Notice requests and other notices of Interpol 3 It will provide access to documents, templates, and training resources, enhancing the capability of frontline officers to conduct probes	Broadcast: Requests from 195 countries for assistance in criminal intelligence shared by them can be transmitted for action to Indian law enforcement agencies Resources: Provides access to relevant documents and capacity building resources

About Fugitive Economic Offender (FEO):

- A Fugitive Economic Offender (FEO) is an individual who meets the following criteria as outlined in the Fugitive Economic Offenders Act, 2018:
 - » **Committed a Scheduled Crime:** The person must have committed an economic crime involving ₹100 crore or more. These crimes typically include financial fraud, money laundering, or other serious economic offenses.
 - » **Fled the Country or Refused to Return:** The person must have fled India to evade legal action or refused to return to face criminal charges. This indicates an attempt to avoid prosecution by remaining outside India.

About the Fugitive Economic Offenders Act, 2018

- The Fugitive Economic Offenders Act, 2018 is specifically designed to address economic crimes, particularly those involving individuals who have fled India to evade prosecution.
- The law enables authorities to confiscate the assets of individuals involved in economic crimes that exceed ₹100 crore and who either refuse to return or have fled the country.
- The Act aims to ensure that such offenders face justice, even if they attempt to avoid prosecution

by remaining abroad.

India's Defence Production

Context:

According to a CareEdge Ratings report India's defence sector is set for robust growth, projected to achieve a compound annual growth rate (CAGR) of around 20% from FY24 to FY29. This growth is supported by government reforms, private sector participation, and technological advancements.

Key highlights of the Report:

Key Drivers of Growth:

- The Indian government has made significant strides to boost domestic defence production and reduce dependence on foreign imports. Policies like 'Make in India' and liberalised FDI norms are fostering self-reliance in defence. These reforms have spurred technological progress, attracted international investments, and strengthened domestic manufacturing.
- The report highlights the critical role of collaboration between the government and the private sector. Domestic and multinational companies are pivotal in advancing defence modernisation, particularly in areas like arms, ammunition, aerospace, electronics, and naval technologies.

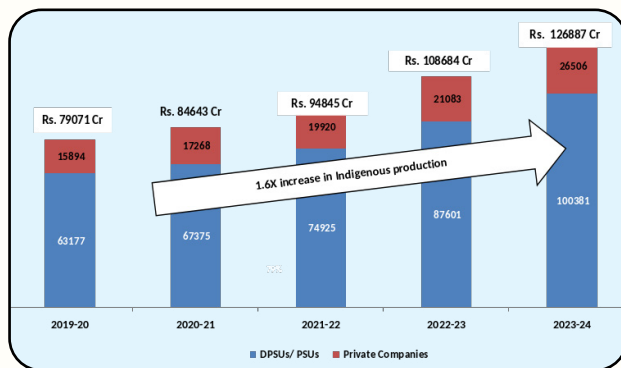
Government Budget and Outlays:

- India's defence budget has ranged from 1.90% to 2.8% of GDP in recent years. For FY 2024-25, the government has allocated Rs 6.22 lakh crore to the sector, aimed at modernising the armed forces and enhancing indigenous manufacturing capabilities.
- India also targets an annual defence production outlay of Rs 1.75 lakh crore for FY25, with expectations for this figure to grow at a CAGR of around 20%, reaching Rs 3 lakh crore by FY29, underscoring its vision of becoming a self-reliant defence powerhouse.

Transformation Toward Self-Reliance:

- India is making steady progress toward self-reliance in defence through indigenous manufacturing and technology development. The country is reducing reliance on foreign suppliers by focusing on the domestic production of critical defence equipment like fighter aircraft, helicopters, tanks, and missile systems. Strategic investments and policy

initiatives are reinforcing this shift.



Growth in Defence Exports:

- India's defence exports have grown at a healthy CAGR of approximately 28% over the past six years. The report forecasts that exports will continue to rise, with an estimated annual growth rate of 19% from FY24 to FY29. These exports include products such as aircraft, naval systems, missile technology, and military hardware, reflecting the growing quality of domestic production and global demand for Indian-made defence products.

Challenges and the Road Ahead:

- Challenges like technology development, infrastructure, and regulatory frameworks remain. Streamlining procurement processes and strengthening public-private sector collaboration will be essential for maintaining growth momentum.
- Additionally, India must attract international defence investments and leverage its position as a technology hub to overcome these challenges.

Internet Shutdowns in 2024

Context:

According to Software Freedom Law Centre in 2024, India saw 60 mobile internet shutdowns, the lowest in eight years, compared to 96 shutdowns in 2023. This marked a significant decrease, indicating a shift in how the government handles internet access during times of civil unrest or security concerns.

Reason Behind Shutdowns Decrease in 2024:

- The reduction in shutdowns can largely be attributed to fewer incidents in states like Jammu & Kashmir and Manipur, which have historically witnessed high numbers of shutdowns due to

ongoing unrest and security challenges.

- In 2024, there was a notable decline in shutdowns in these regions. However, temporary shutdowns still occurred in places like Ambala, Haryana, due to farmer protests, and in parts of Manipur, where law-and-order issues prompted local internet restrictions.

When did India experience the most shutdowns?

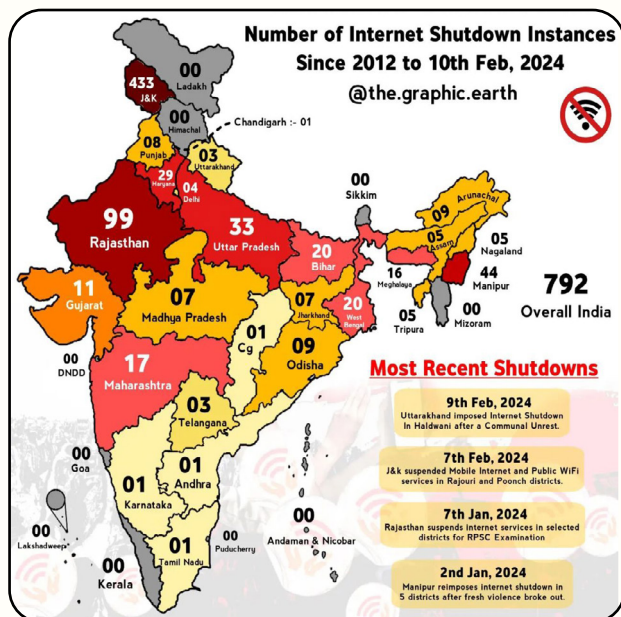
- The highest number of internet shutdowns occurred in 2020, with 132 shutdowns. This spike followed the revocation of Article 370, which granted special status to Jammu & Kashmir, leading to widespread unrest and a need to control the flow of information.

Provisions for Internet Shutdown in India

- Under the Indian Telegraph Act, 1885, the central government has the authority to regulate telecom services, including internet services, and issue licenses.
- The Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017, specifically govern the suspension of internet services during public emergencies or safety concerns. Key provisions of these rules include:
 - Duration of Suspension:** Telecom services, including the internet, can be suspended for up to 15 days at a time.
 - Issuance of Orders:** Only the Union or State Home Secretary can issue orders for suspension.
 - Review Mechanism:** A three-member Review Committee at both central and state levels reviews the orders to ensure they are necessary and proportional.

Supreme Court Judgment in Anuradha Bhasin v. Union of India (2020)

- In the landmark case of Anuradha Bhasin v. Union of India (2020), the Supreme Court emphasized that the right to access the internet is an integral part of the fundamental right to freedom of speech and expression under Article 19(1)(a) of the Constitution. The Court ruled that:
 - Temporary Suspension Only:** Internet shutdowns must be temporary and adhere to the principle of proportionality.
 - Judicial Review:** Shutdown orders are subject to judicial review to ensure they are not excessive or disproportionate.



Impact of Internet Shutdowns

- Shutdowns cause significant economic losses, including a reported \$118 million in foreign investment lost between January and June 2023. A single-day shutdown can also lead to job losses, particularly in sectors that rely on digital platforms.
- Internet shutdowns restrict access to information and communication, which violates the fundamental right to freedom of speech as per Article 19 of the Indian Constitution.
- Shutdowns disrupt essential services such as online education and telemedicine, severely affecting students, educators, and patients, particularly in the regions impacted by the shutdowns.

PM Modi Commissions INS Surat, INS Nilgiri, and INS Vaghsheer

Context:

Prime Minister Narendra Modi recently commissioned three advanced naval combatants—INS Surat, INS Nilgiri, and INS Vaghsheer—at a ceremony held at the Naval Dockyard in Mumbai. In his address, he emphasized the significance of the event as a "giant leap forward" in strengthening the Indian Navy and achieving self-reliance in defense capabilities.

About the Vessels Commissioned:

❖ INS Nilgiri:

- » INS Nilgiri is the lead ship of the Project 17A stealth frigate class, a significant advancement over the previous Shivalik-class frigates. Built at Mazagon Dock Shipbuilders Limited (MDL) and designed by the Indian Navy's Warship Design Bureau, it incorporates advanced stealth technology for reduced radar signatures.
- » Equipped with modern aviation facilities, INS Nilgiri can operate multiple helicopter types, including the newly inducted MH-60R, enhancing its operational capabilities.

❖ INS Surat:

- » INS Surat is the fourth and final vessel of the Project 15B stealth destroyer class, following the Kolkata-class destroyers. Designed by the Warship Design Bureau and built at MDL, it incorporates advanced design improvements and enhanced capabilities.
- » INS Surat is a critical addition to India's surface fleet and plays a significant role in strengthening the Navy's maritime defense capabilities.

❖ INS Vaghsheer:

- » INS Vaghsheer is the sixth and final submarine under the Scorpene-class Project 75 diesel-electric submarine designed for various roles, including anti-surface warfare, anti-submarine warfare, and intelligence gathering, it features modular construction, allowing for future upgrades, including air-independent propulsion technology.

Significance:

- ❖ The commissioning of these vessels marks a significant achievement in India's defense self-reliance and indigenous shipbuilding capabilities.
- ❖ All three platforms—INS Surat, INS Nilgiri, and INS Vaghsheer—were designed and built entirely in India, reflecting the country's growing expertise in defense production. This milestone is in line with the government's vision of Atmanirbhar Bharat (self-reliant India).

Power Packed News

Shubhanshu Shukla: First Indian astronaut to go to space

- Group Captain Shubhanshu Shukla will be the pilot of NASA's Axiom Mission 4 and will become the first Indian astronaut to visit the International Space Station (ISS).
- On January 30, 2025, NASA approved the crew for his mission. The mission will launch from the Kennedy Space Center in Florida in 2025, in which the crew will conduct various experiments in space for 14 days.
- Group Captain Shubhanshu Shukla is also among the four astronauts selected for the Gaganyaan mission. An experienced fighter pilot of the Indian Air Force, he has logged over 2,000 hours of flying and has piloted several aircraft.



SEBI's iSPOT portal

- The Securities and Exchange Board of India (SEBI) launched the iSPOT portal for reporting technical problems at stock exchanges and other market institutions.
- This will ease the process of submitting preliminary and final Root Cause Analysis (RCA) reports.
- Earlier, these reports were sent via email, but now a structured web-based system has been put in place. SEBI aims to enhance transparency and efficiency in monitoring technical issues in the market through this portal.

Khelo India Winter Games 2025

- Ladakh topped the Khelo India Winter Games 2025 by winning seven medals including four gold. The first leg of the Games concluded in Leh on January 27.
- Ladakh's women's ice hockey team won gold by defeating ITBP 4-0, while Indian Army retained its title in men's ice hockey.
- Tamil Nadu finished second with five medals, including three gold, while Maharashtra finished third with 10 medals. The second phase of the Games will be held in Gulmarg, Jammu and Kashmir from 22-25 February.



WHO declares Georgia malaria-free

- The World Health Organisation (WHO) declared Georgia a malaria-free country, bringing Europe closer to becoming the world's first malaria-free region.
- Malaria was a major problem in Georgia in the 20th century, but decades of efforts led to the disease being completely eliminated. According to WHO, a country needs to remain without indigenous malaria transmission for at least three years to achieve malaria-free certification.

Times Higher Education World Rankings

- Times Higher Education (THE) has released the subject-wise World University Rankings 2025, in which the Indian Institute of Science (IISc), Bengaluru has been ranked in the top 100 in computer science. This is the first time an Indian institute has secured the 99th position in this category, while last year it was ranked between 251-300.
- According to the ranking, 53 universities are now among the best institutes in computer science, compared to 47 Indian universities in 2024. IISc has been ranked 96th in this field. Similarly, 24 universities from India have been included in the list of business and economics, up from 15 in 2024.
- In arts and humanities, Jawaharlal Nehru University (JNU) and University of Delhi (DU) improved from 501-

600 to enter the 401-500 ranking range. In social sciences too, 14 Indian universities were ranked among the best institutions.

- Globally, the top three positions are held by the Massachusetts Institute of Technology (MIT), Stanford University and the University of Oxford. The rankings cover 11 subjects, including engineering, medicine, physics, law, education and psychology.

NITI Aayog's Financial Health Index

- NITI Aayog released its first Financial Health Index (FHI) report on January 24, 2025, listing Odisha, Chhattisgarh, Goa and Jharkhand as top performing states ('Achievers'). The report was prepared on the basis of financial stability, revenue management, quality of expenditure and debt management of the states during 2022-23.
- The report covered 18 major states that contribute significantly to India's GDP, population, public expenditure and revenue. Maharashtra, Uttar Pradesh, Telangana, Madhya Pradesh and Karnataka were placed in the 'Front Runners' category, while Tamil Nadu, Bihar, Rajasthan and Haryana featured in the 'Performers' list. On the other hand, Punjab, Andhra Pradesh, West Bengal and Kerala were the weakest performing states and were placed in the 'Aspirational' category.
- According to the report, Odisha excelled in financial health with the highest overall score of 67.8. NITI Aayog evaluated the states on the basis of five key sub-indices – quality of expenditure, revenue mobilization, fiscal prudence, debt index and debt sustainability. The report aims to make the fiscal policy of the states more efficient and transparent, thereby promoting the overall economic sustainability of India.

Launch of Chief Minister Mobile Operation Theatre

- On 26 January 2025, Nagaland Governor La Ganesan launched the Chief Minister Mobile Operation Theatre on the occasion of 76th Republic Day in Kohima. This initiative has been taken to increase the reach of healthcare services in rural and remote areas.
- This mobile unit is designed to provide advanced surgery and medical services, especially to communities that have limited healthcare facilities. The unit is equipped with state-of-the-art technology and can perform complex operations like keyhole surgery. It has portable diagnostic equipment such as ultrasound, X-ray, endoscopy and blood tests.
- A dedicated medical team from Kohimas Hospital, supported by private and public health professionals, will work to bring these services to the doorstep of the people. The main objective of this effort is to address the disparity in healthcare services and promote health equity in the deprived areas of Nagaland.

Indore and Udaipur given wetland city status

- Indore and Udaipur have become the first Indian cities to be included in the list of wetland cities recognized under the Ramsar Convention. The announcement was made on January 24, 2025, ahead of World Wetlands Day, which is celebrated on February 2.
- The Ramsar Convention is an intergovernmental treaty that provides a framework for the conservation and wise use of wetlands and their resources. For this recognition, cities have to meet six international criteria related to the conservation of wetlands and their ecological services.
- Indore (Madhya Pradesh) and Udaipur (Rajasthan) have made efforts to preserve their natural and man-made wetlands. So far 74 cities have been included in this list, including 22 from China and 9 from France.
- India signed the Ramsar Convention in 1982. Currently, 85 wetland sites are protected in India. This recognition is a global recognition of the conservation efforts of these cities and it highlights the importance of wetlands.

Geo-tagging of Chinar trees in Kashmir

- The Jammu and Kashmir government on 23 January 2025 launched the geo-tagging process to protect Chinar heritage trees in Kashmir. Chinar trees not only hold environmental importance but are also cultural heritage.
- The government has created a digital base for monitoring and protection of these trees by taking advantage of technological advancements. Each Chinar tree has been given a scannable QR code, which contains its location and other information. So far 28,560 Chinar trees have been geo-tagged.
- The aim of this initiative is to preserve these trees and create a systematic system for their care in future. Anyone can get information about the trees through QR code.
- This step is an important effort towards environmental conservation and saving the cultural heritage of Kashmir.

Defence Minister launched battlefield surveillance system

- Defence Minister Rajnath Singh launched the state-of-the-art battlefield surveillance system 'Sanjay' in 2025. This system will strengthen the surveillance of the Indian Army's borders.
- 'Sanjay' has been jointly developed by the Indian Army and Bharat Electronics Limited at a cost of Rs 2,402 crore. The system is equipped with state-of-the-art sensors and analytics, which will help in both conventional and sub-conventional operations.
- 'Sanjay' will be inducted into the Army from March 2025 in three phases. This system will help in preventing infiltration and assessing situations by giving accurate information to the commanders.
- This technology will enable the Indian Army to operate with transparency and accuracy in future battlefields. The development of 'Sanjay' is an important step towards making India's defense capability self-reliant.

Usha Vance becomes the first Indian-American Second Lady

- Usha Vance created history by becoming the first Indian-American Second Lady. Her husband J.D. Vance was sworn in as the 50th Vice President of the United States on January 20, 2025.
- Usha Vance is a lawyer and has also served as a clerk for US Supreme Court judges Kavanaugh and John Roberts. She will also be known as the youngest Second Lady.
- Her achievement has instilled a sense of pride in the Indian-American community. This milestone symbolizes the growing participation of Indian immigrants in global politics.

UP government's Aerospace and Defense Policy approved

- The Uttar Pradesh government has approved the new Aerospace and Defense Unit Policy 2024. The aim of this policy is to make the state a leader in the aerospace and defense sector. This policy will generate more than 1 lakh jobs and attract investments of about Rs 50,000 crore.
- The state government has also implemented a new policy to encourage foreign investment (FDI). Under this, foreign companies will be given up to 80% subsidy on land. This move will accelerate industrial development in Uttar Pradesh and make the state an attractive destination for investment.
- The main objective of the Aerospace and Defense Policy is to strengthen indigenous capabilities, promote innovation and encourage global partnerships. The government aims to make Uttar Pradesh a leading defense and aerospace hub of India by promoting development in this sector.

India Open 2025

- Viktor Axelsen of Denmark and An Se-Young of Korea won the men's and women's India Open 2025 badminton titles respectively. Axelsen defeated Lee Cheuk Yiu in the men's final to win the title. An Se-Young defeated P.

Chochuwong of Thailand in the women's final.

- In the men's doubles, Sze Fei Goh and Nur Izzuddin won over Won Ho Kim and Seung Jae Seo. In the women's doubles, Arisa Igarashi and Ayako Sakuramoto of Japan defeated Hye Jeong Kim and Hee Yong Kong.
- In the mixed doubles, Zheng Bang Jiang and Ya Xin Wei of China defeated Thom Gicquel and Delphine Delrue of France. The annual tournament was held from 14 to 19 January 2025 at the K.D. Jadhav Indoor Stadium in New Delhi.

Chief Justice of Delhi High Court

- Justice Devendra Kumar Upadhyay took oath as the Chief Justice of Delhi High Court. Lieutenant Governor V.K. Saxena administered the oath to him.
- Earlier, he was the Chief Justice of Bombay High Court. The Supreme Court Collegium had recommended his transfer on 7 January 2025. Justice Upadhyay, who hails from Uttar Pradesh, took over as a judge of Allahabad High Court on 21 November 2011.
- After his transfer, Justice Vibhu Bakhru was the acting Chief Justice. The appointment came after the promotion of Justice Manmohan to the Supreme Court.

Nigeria becomes new BRICS partner country

- Nigeria has now become the ninth partner country of BRICS along with Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Thailand, Uganda and Uzbekistan.
- The BRICS group was founded in 2009 by Brazil, Russia, India and China, and South Africa joined it in 2010. The group was created to balance the influence of the G-7 countries. BRICS has also added Iran, Egypt, Ethiopia and UAE in 2023.
- Saudi Arabia and other countries are interested in joining it. Nigeria is Africa's most populous country and the sixth largest country in the world. Last year, US President Trump threatened to impose tariffs on BRICS countries over any attempt to weaken the US dollar.



Entity Locker

- After the success of DigiLocker, the Government of India has launched "Entity Locker". This digital platform is designed to manage and verify business and organizational documents.
- It has been developed by the National e-Government Division under the Ministry of Electronics and Information Technology. The platform provides cloud-based services to micro, small and medium enterprises (MSMEs), startups and trusts.
- It features Aadhaar-authenticated role-based access, consent-based information sharing and digital signatures. Users also get secure 10 GB storage. This technology makes annual filing easier for companies, making digital document management more effective.

Karnataka wins Vijay Hazare Trophy

- Karnataka defeated Vidarbha by 36 runs to win the Vijay Hazare Trophy 2025 title. The final match was played at Kotambi Stadium in Vadodara.
- Karnataka performed well in the group stage with only one loss in seven matches. In the knockout round, it defeated Baroda and Haryana. Karnataka won the tournament for the first time in 2013-14. Tamil Nadu, Mumbai and Saurashtra are among the other winning teams.

- The Vijay Hazare Trophy, also known as the Ranji One-Day Trophy, was introduced in honour of the famous cricketer Vijay Hazare. This win marked the fifth time Karnataka has captured the prestigious title.

Indian Navy participated in La Perouse Exercise

- The Indian Navy took part in the La Perouse multilateral naval exercise hosted by France. The exercise saw navies of nine Indo-Pacific countries take part in the Straits of Malacca, Sunda and Lombok.
- The Indian Navy deployed INS Mumbai for the exercise. The French Carrier Strike Group led by the carrier Charles de Gaulle conducted the exercise.
- It was attended by Australia, Canada, France, India, Indonesia, Malaysia, Singapore, the U.K. and the U.S. The main objective was to strengthen interoperability between navies and train in tactical manoeuvres. It included activities such as surface warfare, anti-air warfare and cross-deck landing.



WMF monitoring Hyderabad's Musi River

- The World Monument Fund (WMF) has added Hyderabad's historic buildings along the Musi River to its World Monument Watch List for 2025.
- The list also includes Bhuj's water system. Key structures on the Musi River banks, such as the British Residency, Osmania General Hospital, Telangana High Court, and the State Central Library, are at risk due to climate change and the water crisis.

Gyanendra Pratap Singh appointed CRPF DG

- Gyanendra Pratap Singh, a 1991-batch Assam-Meghalaya cadre IPS officer, has been appointed as the Director General of CRPF until November 30, 2027.
- He has previously served in the Assam Police, SPG, and NIA. The CRPF is the largest central armed police force in India.

India's hydrogen train engine

- India has developed the world's most powerful hydrogen train engine, which has been developed by the Indian Railways. Its output is 1,200 horsepower, which puts it at the forefront of its category.
- The first test of this engine will be on the Jind-Sonapat route in Haryana. Only four countries in the world have hydrogen-fueled trains, whose output ranges between 500 to 600 horsepower.
- This technology developed in India will also guide the creation of new power trains for trucks, tugboats and other applications.
- India's first hydrogen-powered train has been built by the Integral Coach Factory in Tamil Nadu, a major achievement of the country's indigenous innovation.



India's victory in Kho-Kho World Cup

- India's women's team made history by winning the inaugural Kho-Kho World Cup 2025. In a thrilling final held at the Indira Gandhi Indoor Stadium on January 19, the Indian team triumphed over Nepal with a dominant 78-40 victory.
- On the same day, the men's team also secured the World Cup, defeating Nepal 54-36.
- The standout performances were recognized with Anshu Kumari being named the best attacker and Chaitra B the best player for India, while Nepal's Manmati Dhani earned the best defender award.

Donald Trump becomes the 47th President of America

- Donald Trump was sworn in as the 47th President of the United States, with JD Vance taking the oath as Vice President. Chief Justice John Roberts administered the oath at the ceremony in Washington, DC.
- Notable attendees included India's Foreign Minister S. Jaishankar, Tesla's Elon Musk, Amazon's Jeff Bezos, Meta's Mark Zuckerberg, Apple's Tim Cook, and OpenAI's Sam Altman.

"Bharat Ranbhoomi Darshan" App

- Defence Minister Rajnath Singh launched the "Bharat Ranbhoomi Darshan" app to promote battlefield tourism. It is a joint initiative of the Ministry of Defence and Tourism and the Army.
- Now tourists can visit Siachen Base Camp and Galwan Valley, including the battlefields of 1962, 1971 and 1999. Information about the India-China standoff in Doklam and the historical battlefields of Kargil will also be available through this app.
- This initiative will encourage tourism and economic development in border areas. The Indian Army is working to transform border areas into tourist destinations, which will provide employment opportunities to local communities. Such schemes will be helpful in preserving India's strategic history and encouraging the spirit of nationalism.

Punjab launches She Cohort 3.0

- The Punjab government launched She Cohort 3.0 in Mohali to empower women entrepreneurs. The program will help women set up and expand technology-based startups.
- It was inaugurated by Science, Technology and Environment Secretary Priyank Bharati. In the presence of more than 250 startups and students, discussions were held on strengthening the startup ecosystem of the state. The initiative aims to make marginalized women self-reliant using science and technology.

India ranked second in QS World Future Skills Index

- India has been ranked second for digital skills and fourth for artificial intelligence and green skills in the QS World Future Skills Index 2025.
- India leads the world in digital skills, after the United States. However, India's performance in future-oriented innovation and sustainability has been average. The index evaluates countries' preparedness on four factors such as skills fit, academic readiness, future of work, and economic transformation.
- India ranked lowest among the top 30 countries in skill fit

QS World Future Skills Index 2025

Transforming Higher Education for the Skills Economy

INDIA

Indicator	Skills Fit	Academic Readiness	Future of Work	Economic Transformation	Overall
Score	59.1	89.9	99.1	58.3	76.6
Global position	37th	26th	2nd	40th	25th

with 59.1 points. The report has classified India as a "future skills contender", while countries like USA, UK, Germany and Australia have been considered "future skills pioneers". This index shows that India needs to focus on improvement opportunities for emerging skills.

Sports Awards

- Recently, Gukesh D (Chess), Harmanpreet Singh (Hockey), Manu Bhaker (Shooting) and Praveen Kumar (Paralympic High Jump) received the Major Dhyan Chand Khel Ratna Award. This award is given to those players who have performed brilliantly in sports in the last four years.
- Gukesh D made a record of becoming the youngest world chess champion by defeating Ding Liren. Manu Bhaker created history by becoming the first Indian player to win two medals in the same games by winning bronze medals in 10 meter air pistol and mixed team events in Paris.
- Harmanpreet Singh gave the Indian hockey team its second consecutive Olympic bronze. Praveen Kumar won the gold medal in high jump T64 at the Paralympics.
- This time 32 players received the Arjuna Award, including 17 para-athletes. This award is also given for excellent performance in sports. Suchha Singh (Cycling) and Muralikant Petkar (Para-Swimming) received the Arjuna Award for lifetime achievements. Murlikant Petkar is India's first Paralympic gold medallist.
- The Dronacharya Award was given to Deepali Deshpande (shooting), Sandeep Sangwan (hockey) and Subhash Rana (para-shooting). Armando Colaco (football) and S Muralidharan (badminton) received the award for lifetime contribution.
- Physical Education Foundation of India received the National Sports Promotion Award. Chandigarh University, Lovely Professional University and Guru Nanak Dev University were awarded the Maulana Abul Kalam Azad Trophy for best performance in the Khelo India University Games.

Croatian President Zoran Milanovic re-elected

- Croatia President Zoran Milanovic has won a second term for five years. He won more than 74% of the votes, defeating the candidate of the ruling conservative party.
- Milanovic, a critic of the European Union and NATO, defeated Dragan Primorac, who received only 26% of the vote.
- Milanovic has expressed his disagreement with the ongoing war in Ukraine against Western military support.
- Croatia is a country in South-Eastern Europe located on the coast of the Adriatic Sea, whose capital is Zagreb.



New battalions to expand CISF

- The Ministry of Home Affairs has approved two new battalions to strengthen the Central Industrial Security Force (CISF). The approval of two new battalions will take the total number of battalions of CISF from 13 to 15.
- Each new battalion will have 1,025 personnel and will be headed by a senior commandant officer. Women battalion is also included in this expansion.
- The CISF protects critical infrastructure such as nuclear plants, airports and ports. It was founded on 10 March 1969 and is headquartered in New Delhi.

Formation of National Turmeric Board

- Union Minister Piyush Goyal inaugurated the National Turmeric Board. Its headquarters will be in Nizamabad.
- Palle Ganga Reddy has been appointed as the first chairman of the board.
- Turmeric is called the 'Golden Spice', which is grown in 20 states of India. The board aims to increase the income

of turmeric producers, encourage research and promote international marketing of turmeric related products.

- The total production of turmeric in 2023-24 was 10.74 lakh tonnes, with India's global contribution being 70%.

India to host CSpOC conference in 2026

- India will host the 28th Conference of Speakers and Presiding Officers of Parliaments of Commonwealth Countries (CSpOC) in 2026. Lok Sabha Speaker Om Birla announced the event at the CSpOC Standing Committee meeting in Guernsey.
- The main theme of the 28th CSpOC will focus on the use of artificial intelligence and social media in parliamentary processes. The CSpOC platform aims to exchange parliamentary practices and cooperation among member countries.
- India's hosting will provide an opportunity to showcase its rich traditions. India has previously hosted the event in 1970-71, 1986 and 2010.

Pravasi Bharatiya Samman Award 2025

- Dr. Syed Anwar Khurshid received the Pravasi Bharatiya Samman Award 2025. The honour was given to him for his contributions to healthcare, community welfare, and strengthening India-Saudi Arabia relations.
- Dr Khurshid has served as Royal Protocol Physician for three decades at King Faisal Hospital and a decade at National Guard Hospital. He provided facilities such as healthcare, vaccine advocacy, and 24-hour consultation for Indian expatriates.
- He founded the International Indian School in Taif (a city located in Makkah Province, Saudi Arabia), which promotes educational excellence and cultural inclusion in the overseas Indian community. He is also the Vice President of the Saudi-Indian Healthcare Forum.
- This award is the highest honour given to the overseas Indians by the Government of India.

Henley Passport Index 2025

- India's ranking in the Henley Passport Index 2025 has dropped to 85th, while it was 80th in 2024. Singapore topped the list for the second consecutive year.
- The index, released by Henley & Partners, is based on data from the International Air Transport Authority (IATA) and covers 199 passports and 227 travel destinations.
- According to the index, Indian passport holders are entitled to visa-free travel to 57 destinations.
- Pakistan is ranked 103rd and Bangladesh is 100th.
- The top five countries include Singapore, Japan, and various European countries. The index assesses the global strength of passports and is based on 19 years of historical data.

Joseph Aoun becomes President of Lebanon

- The Lebanese Parliament elected Army Commander Joseph Aoun as the President of the country. He is the fifth former army commander to become President.
- He was appointed Army Chief in March 2017 and his term was extended twice during the Israel-Hezbollah conflict.
- In Lebanon, the President is elected by a two-thirds majority in the first round or a simple majority in the next round.
- This election was held after a gap of two years. Aun's tenure will focus on contributing to regional stability and national security.



Parth Yojana of Madhya Pradesh Government

- The Madhya Pradesh government has launched the Parth Yojana to prepare the youth mentally and physically before recruitment in the army, police and paramilitary forces.
- The full name of the Parth scheme is "Police Army Recruitment Training and Skills".
- Madhya Pradesh Chief Minister Mohan Yadav launched it at the closing ceremony of the state level youth festival. Under this scheme, the youth will get pre-training for physical fitness and preparation for the written examination. They will be given training in the infrastructure of the sports department.
- The government will create a youth portal, where interested youth can register themselves.
- A list of training centers will also be available on the portal. The aim of this scheme is to prepare the youth for a better future.

Bima Sakhi Yojana: Goa's new initiative

- Goa Chief Minister Pramod Sawant launched the 'Bima Sakhi Yojana', which aims to make insurance services accessible to all.
- The scheme has been launched in collaboration with the Life Insurance Corporation of India (LIC) and mainly focuses on empowering women between 18 and 70 years of age.
- Under this scheme, women who have passed class 10 will receive special training in financial literacy and insurance awareness. They will also be given a stipend for the first three years.
- The trained women will be able to work as insurance agents and the Bima Sakhis who perform well will get an opportunity to become development officers in LIC.
- The initiative aims to increase employment and sources of income for women. Goa is the second state after Haryana to implement this scheme.

Marathi language given classical language status

- The Marathi language was formally given the status of classical language after a government order issued on January 8, 2025.
- Union Culture Minister Gajendra Singh Shekhawat handed over the order to Maharashtra's Marathi Language Minister Uday Samant.
- Although the Union Cabinet granted classical language status to Marathi on October 3, 2024, the official notification has been issued now.
- The Maharashtra government will send a proposal to the Center to ensure the benefits of classical languages to the Marathi language. Tamil became the first classical language in 2004, Sanskrit got this status in 2005.

P. Jayachandran passed away

- P. Jayachandran, a famous singer of South Indian film music, died on 9 January 2025 in Thrissur, Kerala. He was 80 years old.
- He sang more than 16,000 songs in many languages including Malayalam, Tamil, Telugu, Hindi, and Kannada. He was also known as Bhava Gayakan.
- Jayachandran has been awarded the National Film Award for Best Playback Singer and has received several other honours including Kerala State Film Award, Kalaimamani Award of Tamil Nadu Government and J.C. Daniel Award.
- His voice was one of the most recognised voices in the Malayalam film industry.



John Mahama becomes President of Ghana

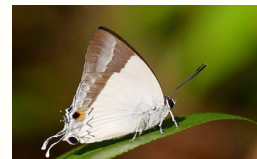
- John Mahama took oath as the President of Ghana for the third time.
- He will replace the current President Nana Akufo-Addo. Mahama was first sworn in as President in July 2012.
- John Mahama promised to tackle corruption, unemployment and economic crisis.
- He has been President from 2012 to 2017. His priority will be economic stability and good governance.

'Garudakshi' FIR system launched in Karnataka

- The Karnataka Forest Department has launched the 'Garudakshi' online FIR system for the prevention of forest crimes.
- It will enable online settlement of cases under Forest Conservation Acts.
- The system, developed in collaboration with the Wildlife Trust of India, has been implemented in five forest divisions.
- The Garudakshi software will be gradually implemented in all divisions.
- This advanced alert system will help authorities monitor illegal activities including felling of trees by tracking changes in forest area.

Banded Royal Butterfly Discovered in Tripura

- The Banded Royal Butterfly (Rachna Jalindra Indra) has been discovered in Sipahijala Wildlife Sanctuary in Tripura.
- It was first sighted on May 5, 2021.
- It is protected under Schedule II of the Indian Wildlife Act, 1972.
- It has three subspecies found in India.



Martin Guptill retires from international cricket

- New Zealand cricketer Martin Guptill has recently announced his retirement from international cricket after a career spanning 14 years. He scored 23 centuries and over 14,000 runs in 367 matches.
- Guptill played 47 Tests, 198 ODIs and 122 T20 matches. He holds the record of 237 not out in the 2015 World Cup.
- He is New Zealand's top scorer in T20 with 3531 runs. He is third in ODIs after Stephen Fleming and Ross Taylor with 7,346 runs.
- Guptill will continue to play in T20 franchise cricket.



V Narayanan new ISRO Chairman

- V Narayanan has been appointed as the Chairman of the Indian Space Research Organisation (ISRO) and Secretary of the Department of Space.
- V Narayanan will take charge on January 14, replacing current president S Somnath.
- Currently, he is the Director of ISRO's Liquid Propulsion Systems Centre (LPSC) in Valiamala, Kerala.
- He is a rocket and spacecraft propulsion expert and joined ISRO in 1984.
- S Somanath is the tenth Chairman of ISRO and has been in the position since January 14, 2022.



India's GDP growth rate 2024-25

- According to the Ministry of Statistics, India's GDP growth rate is estimated to be 6.4% in the financial year 2024-25, up from 8.2% in 2023-24.
- Nominal GDP has registered a growth of 9.7%.
- Agriculture and allied sector is expected to grow by 3.8%, while the rate for the construction sector is 8.6%.
- Financial, real estate, and professional services are projected to grow by 7.3%.
- Private final consumption expenditure (PFCE) at constant prices is also seen growing by 7.3%.

Bahadur Singh Sagoo new AFI president

- Asian Games gold medallist Bahadur Singh Sagoo has been elected as the President of the Athletics Federation of India (AFI).
- He replaced Adile Sumariwala, who was the president since 2012, at the Annual General Meeting held in Chandigarh.
- Sandeep Mehta has become the new secretary of the federation.
- The bronze level Continental Tour Athletics event led by AFI will be held in Bhubaneswar.

Cashless Treatment Scheme

- Road Transport Minister Nitin Gadkari has announced a cashless treatment scheme for road accident victims. Under this scheme, medical expenses up to seven days immediately after the accident or up to a maximum of Rs 1.5 lakh will be covered.
- The scheme will be implemented across the country and was initially launched in select states. It will be mandatory to report the accident to the police within 24 hours.
- Additional protection has been provided to the family of the victim in hit-and-run cases. In case of death, the family of the deceased will be given a compensation of Rs 2 lakh.
- Expressing concern over the poor state of road safety, Road Transport Minister Gadkari said that in 2024, 1.8 lakh people died in road accidents in India. Out of these, 30,000 people died because of not wearing helmets. 66% of the victims of fatal accidents were between 18 and 34 years old.
- Gadkari also cited lack of driving training as a major reason and said there is a shortage of about 22 lakh trained drivers in the country. To address this problem, the government has decided to open more driving training centres under the new policy.
- Efforts will also be made to improve faulty entry and exit points near schools and colleges.
- He stressed the need to improve road design and traffic management to reduce accidents.

Indonesia new member of BRICS

- Brazil, the chair country of BRICS, has declared Indonesia a full member of this global organization.
- Indonesia, which has the fourth largest population in the world, expressed its interest in BRICS soon after the formation of its new government.
- BRICS was formed in 2009 by Brazil, Russia, India, and China. The first BRICS summit was held in 2009 in Yekaterinburg, Russia. In 2024, the group was expanded to include Iran, Egypt, Ethiopia, and the United Arab Emirates.
- Turkey, Azerbaijan, and Malaysia have applied for membership.
- The 16th BRICS summit was held in Kazan, Russia in 2024.
- Indonesia's membership will further strengthen the organization's



global economic and political influence.

E-auction portal 'Banknet'

- The government on January 3 launched a revised portal called 'Banknet', which will simplify and make e-auction of properties for public sector banks (PSBs) simple and transparent. The portal will help buyers and investors to participate in various properties and take advantage of the opportunities. Currently, more than 1,22,000 properties are listed on the portal. This includes residential properties, commercial and industrial land, vehicles, plant and machinery.
- This initiative will improve the balance sheet of PSBs and increase the availability of credit for businesses and individuals. This portal will speed up the reform process, which will reduce the non-performing assets (NPAs) of banks. 'Banknet' is also expected to promote digital transactions and financial transparency.

India's first 'Generation Beta' baby born

- India's first 'Generation Beta' baby was born on January 1 at Synod Hospital in Aizawl, Mizoram. The baby has been named Frankie Remruatdika Zedeng. According to futurist Mark McCrindle, children born between 2025 and 2039 will be called 'Gen Beta'. This generation will be the offspring of millennials (Gen Y) and older Gen Z and will experience a seamless integration of the digital and physical world.
- It is estimated that by 2025, this generation will account for 16% of the global population. Technological advancements and artificial intelligence will deeply impact the lives of this generation.

Golden Globes 2025 winners

- Several notable films and artists were honored at the 82nd Golden Globes ceremony held in Los Angeles on January 5. 'Shogun' won four awards, including Best Drama Series and Leading Actor and Actress.
- The Brutalist film received seven nominations and Adrien Brody won the Best Actor (Drama) award for this film. Pamela Anderson received the Best Actress award for her performance in 'The Last Showgirl'.
- 'Flow' won the award in the Animated Motion Picture category, while 'El Mal' received the Best Original Song honor.

West Bengal won the 33rd Santosh Trophy

- West Bengal won the Santosh Trophy for the 33rd time by defeating Kerala in the final on 1 January 2025. The only decisive goal of the match was scored by Robbie Hansda in extra time.
- Hansda also became the top scorer of this tournament. This victory reflects West Bengal's historical superiority in football.
- The Santosh Trophy, which is a state-level football competition, is held under the All India Football Federation. This victory adds another important chapter to the football history of West Bengal.

India's first glass bridge

- India's first glass bridge built over the sea in Kanyakumari was inaugurated on 1 January 2025. This bridge connects the Tiruvalluvar statue and the Vivekananda Rock Memorial.
- Built at a cost of Rs 37 crore, the bridge is 77 meters long and 10 meters wide. It is designed to withstand sea breeze and high humidity.



- This bridge allows tourists to walk between the two sites safely while enjoying the sea view.
- The project is part of efforts to develop Kanyakumari as a major tourist destination.

Rajagopala Chidambaram

- Eminent physicist Rajagopala Chidambaram, who played a key role in India's nuclear programme, died on January 4 at the age of 88.
- His pivotal role in India's journey as a nuclear power began with his participation in the 1974 "Smiling Buddha" nuclear test and continued with his leadership during the 1998 Pokhran-II tests, which established India's position as a nuclear power on the global stage.
- Born in Tamil Nadu in 1936, Chidambaram was an alumnus of Chennai's Presidency College and Bengaluru's Indian Institute of Science. During his illustrious career, he held several key positions, including Principal Scientific Adviser to the Government of India and Director of the Bhabha Atomic Research Centre (BARC).
- He also chaired the Atomic Energy Commission and served as Chairman of the Board of Governors of the International Atomic Energy Agency.
- Beyond nuclear advancement, Chidambaram made unprecedented contributions to high-pressure physics, crystallography and materials science, laying the foundation for modern materials research in India. A recipient of the Padma Vibhushan and the Padma Shri, Chidambaram's legacy continues to inspire generations in India and beyond.



Tourist tax implemented in Russia

- Russia has implemented a tourist tax from January 1, 2025, which is a significant step towards strengthening regional tourism infrastructure. Under this tax, tourists staying in hotels and other accommodation will have to pay an additional 1% of the cost of the stay. This rate will be increased to 3% by 2027.
- This tax will replace the previously applicable resort fee. The initiative was introduced in July 2024 as part of amendments to the Russian Tax Code. Many tourism-dominated regions have already adopted it.
- Also, Russia has removed export duty on anthracite, coking coal and thermal coal. This step has been taken to boost coal exports and make the industry competitive.
- Implementing tourist tax and removing coal duty, both steps are part of Russia's plan to diversify and strengthen its economy.



Chhattisgarh's Green GDP scheme

- Chhattisgarh has become the first state in the country to link the ecosystem services of forests to Green GDP. The scheme aims to link the environmental contributions of forests such as clean air, water conservation, biodiversity and carbon absorption to economic progress.
- 44% of the state's land is covered by forests, which are the basis of livelihood for millions of people. Tendu leaves, honey, medicinal plants and other products obtained from forests contribute significantly to the rural economy.

- The initiative focuses on valuing forest ecosystem services and incorporating them into the formal economic schemes of the state. It aims to establish a balance between economic development and ecological sustainability.
- The idea of Green GDP is an innovative approach to better utilize the natural resources of Chhattisgarh and ensure their sustainability.

Bhuvnesh Kumar becomes CEO of UIDAI

- Recently on 1 January 2025, Bhuvnesh Kumar took over as the CEO of the Unique Identification Authority of India (UIDAI). He is also serving as Additional Secretary in the Ministry of Electronics and Information Technology.
- UIDAI, which operates Aadhaar, is an important institution of India. So far 1.41 billion citizens have been registered in Aadhaar. Over 1.07 billion updates and corrections have been made.
- Aadhaar has been used in over 127 billion routine authentications and over 21.8 billion e-KYC processes.
- Mr Kumar replaced Amit Agarwal, who is now the Secretary, Department of Pharmaceuticals. The use of Aadhaar has brought transparency and efficiency in government schemes.
- With the appointment of Mr Kumar, further improvement in managerial and technical functions related to Aadhaar is expected.

Romania and Bulgaria join Schengen Area

- On 1 January 2025, Romania and Bulgaria gained full membership in the EU's Schengen Area. With this, land border controls have been removed in these countries. This move will enable free movement for over 425 million European citizens.
- The Schengen Area is the world's largest free movement area. It now includes 25 of the 27 EU member states, except Cyprus and Ireland. Romania and Bulgaria partially joined the region in March 2024, but then the facility was limited to air and sea travel only. Now it is also available for land route.
- This initiative will not only strengthen the economic and social relations of these countries but will also strengthen the internal unity of the European Union.



India's first coastal-aquatic bird census

- India's first coastal-aquatic bird census was conducted from 3 to 5 January 2025 in Jamnagar, Gujarat. The event was jointly organized by the Forest Department and the Gujarat Bird Conservation Society (BCSG).
- The Marine National Park and Sanctuary located in Jamnagar has more than 300 species of local and migratory birds, including more than 50 aquatic birds.
- The census organised expert talks, bird count activities and knowledge-sharing sessions. This initiative is an important step towards marine biodiversity and conservation. Located in the Gulf of Kutch, this protected area is India's first marine national park, which also plays an important role in the conservation of the mangrove ecosystem.

Vitul Kumar: CRPF DG

- IPS officer Vitul Kumar took over as the Director General of the Central Reserve Police Force (CRPF). Earlier, he was serving as the Special Director General of CRPF. The Home Ministry appointed him after the retirement of the incumbent chief Anish Dayal Singh.
- Vitul Kumar has received several honours for his outstanding service, including the President's Police Medal

(PPM) and the Police Medal (PM). In 2016, he was also awarded the Director General's Silver Commendation Disc.

- His tenure will be crucial in enhancing the effectiveness of the force and preparing it for new challenges. Until a permanent appointment is made, he will perform his responsibility as the acting Director General. Under his leadership, the CRPF can set new dimensions in its operations and training.

ONOS: One Nation, One Subscription Scheme

- The government has launched the "One Nation, One Subscription" (ONOS) scheme from January 1, 2025. It aims to provide seamless access to research papers and digital resources to students, researchers and academic institutions.
- Under the scheme, more than 13,400 international journals will be available in subjects such as science, technology, engineering, management, social sciences and humanities. A budget of Rs 6,000 crore has been allocated for this over three years.
- 1.8 crore students will benefit under this initiative, ensuring equal availability of knowledge. Additionally, a grant of Rs 150 crore will be given annually to beneficiary authors for publishing in good quality open access journals.
- ONOS is a big step towards making India a leading position in digital education.

World Boxing forms new Asian body

- World Boxing formed a new Asian body, which will have seven key positions of the Boxing Federation of India (BFI) to develop and expand Asian boxing. Ajay Singh has been appointed as a board member. There will be representation of Indian officials in key commissions including the Secretary General of BFI.
- Lovlina Borgohain will be part of the Athletes Commission and Narendra Kumar Nirwan will serve on the Constitution Commission. D P Bhatt will be part of the newly formed Sports and Competition Commission.
- This new body will play a key role in the development of Asian boxing.

Bosnia's "Balkan Blues" recognized by UNESCO

- Sevdalinka, the traditional love song of Bosnia and Herzegovina, has been included in UNESCO's National List of Intangible Cultural Heritage.
- It is often called the "Balkan Blues". It is a melancholic urban love song from the 16th century that combines oral poetry of South Slavic people and Ottoman music.
- Sevdalinka performances use traditional instruments and have been shared through generations of performances.
- Imamovic's SevdahLab initiative has garnered support to include it on UNESCO's World Heritage List.

Former US President Jimmy Carter passes away

- Former US President Jimmy Carter passed away on 29 December 2024 at the age of 100. He received the 2002 Nobel Peace Prize for his humanitarian work.
- He was a peanut farmer from Georgia turned president and became the 39th President of the US in 1977.
- He defeated incumbent Republican President Gerald Ford in the 1976 election.
- His book "Palestine: Peace Not Apartheid" was published in 2007 and "Faith: A Journey for All" in 2018.

Jasprit Bumrah: Fastest Indian to take 200 Test wickets

- Indian fast bowler Jasprit Bumrah has written a new chapter in cricket history. He achieved the distinction of

becoming the fastest Indian bowler to take 200 Test wickets. He achieved this achievement during the ongoing Border-Gavaskar Trophy at Melbourne Cricket Ground. By achieving this milestone on the 8484th valid ball, Bumrah broke the record of Mohammed Shami, who had achieved this feat in 9896 balls.

- Globally, Bumrah is the fourth fastest bowler, ahead of Waqar Younis (7725 balls), Dale Steyn (7848 balls) and Kagiso Rabada (8154 balls). His unique performance has taken India's fast bowling attack to new heights. Bumrah's ability and his unique bowling action have given him a special identity in the cricket world.

Dr Sandeep Shah: New Chairman of NABL

- Dr Sandeep Shah has been appointed as the Chairman of the National Accreditation Board (NABL). Known as the Joint Managing Director of Neuberg Diagnostics, Dr Shah was earlier the Chairman of the Medical Labs Accreditation Improvement Committee (MLAIC).
- NABL, which was set up in 1988, accredits laboratories and conformity bodies in India. It is headquartered in Gurugram and functions under the Quality Council of India (QCI). QCI is an autonomous body set up under the Ministry of Commerce and Industry.
- In Dr Shah's new role, his priority will be to improve the quality and reliability of laboratories. NABL celebrates World Accreditation Day every year on June 9, which can become more effective under the leadership of Dr Shah.

IIT Bombay's needleless shock syringe

- IIT Bombay has developed a needleless shock syringe for painless vaccination. This new technology was found to be more effective than conventional needles during testing on mice. This shockwave-based syringe injects a microjet of liquid drugs into the skin without piercing the skin.
- The syringe uses high-energy shockwaves, which penetrate the drug into the skin in the form of a microjet. The speed of this process is also twice the takeoff speed of a commercial airplane. This technique is not only painless but also reduces the risk of infection.
- This innovative device is expected to revolutionize vaccination campaigns. This technology can make vaccination more accessible while eliminating the concerns and fear associated with needles.

One Liners

1. Recently, the Government of Tripura signed an MoU with Digital India Bhashini Division (DIBD) under MeitY to promote regional languages in governance. Bhashini, part of the Digital India initiative, enables real-time translation, speech-to-text, and voice-to-voice communication in 22 Indian languages.
2. Punjab National Bank (PNB) becomes the first Indian bank to integrate Clari5's National Cybercrime Reporting Portal (NCRP) solution. The solution was developed with the Indian Cyber Crime Coordination Centre (I4C) to automate cybercrime complaint processing.
3. The Ministry of Micro, Small, and Medium Enterprises (MSME) has launched the MSME Trade Enablement and Marketing (TEAM) initiative to help small businesses adopt digital commerce. It has a budget of 277.35 crore for three years and aims to onboard 5 lakh MSMEs onto Open Network for Digital Commerce (ONDC).
4. China unveiled the CR450, the world's fastest high-speed train, with test speeds of 450 km/h and a commercial speed of 400 km/h. It surpasses the CR400 Fuxing trains (350 km/h) and reflects breakthroughs in speed, energy efficiency, safety, and comfort. It has been developed through 200,000 km of tests, 3,000 simulations, and 2,000 platform tests.
5. Kerala won their first Senior National Men's Handball Championship title with a 34-31 victory over Chandigarh. Kerala's Devendar was named 'Best Player of the Championship,' Rahul won 'Best Goalkeeper,' and Sujith was honored as 'Best Left Wing Player.' Services and Indian Railways shared third place in the tournament.
6. West Bengal won the Santosh Trophy national football championship by defeating Kerala in the final of the 78th edition. The final match was held on 31st December 2024 at GMC Balayogi Stadium, Hyderabad, Telangana. The Santosh Trophy is a premier state-level football tournament for men in India, organized by the All India Football Federation.
7. Gujarat government and Bird Conservation Society of Gujarat (BCSG) conducted India's first coastal and wader bird census from January 3 to 5, 2025, at the Marine National Park and Marine Sanctuary in Jamnagar.
8. Chief Minister Dr. Mohan Yadav inaugurated the 31st National Children's Science Congress in Bhopal, held from January 3 to 6, 2025.
9. The Union Ministry of Environment, Forest, and Climate Change has amended the rules for selecting experts for the Genetic Engineering Appraisal Committee (GEAC). GEAC is a statutory committee under the 1989 rules for hazardous and genetically engineered organisms framed under the Environment (Protection) Act, 1986.
10. IIT Bombay researchers developed a solution to tackle soil pollution using bacteria that consume toxic pollutants and produce essential nutrients.
11. The Food Safety and Standards Authority of India clarified the use of methylcobalamin (MeCbl), an active form of Vitamin B12. Methylcobalamin, structurally distinct from other Vitamin B12 forms, contains a methyl group bonded to a cobalt atom.
12. The Pravasi Bharatiya Divas (PBD) Convention took place in Bhubaneswar from January 8 to 10, 2025. The theme is 'Diaspora's Contribution to a Viksit Bharat', celebrating the diaspora's role in India's development.

13. Lok Sabha Speaker inaugurated 'Panchayat Se Parliament 2.0' at the Central Hall of Samvidhan Sadan. It was organised by the National Commission for Women (NCW) with the Lok Sabha Secretariat and Ministry of Tribal Affairs.
14. Union Minister of Education launched Sashakt Beti and e-Drishti projects at the University of Delhi's Samarpan Samaroh event. Project Sashakt Beti empowers orphaned and single-parent female students with family incomes under 4 lakh by providing laptops. Project e-Drishti supports visually impaired students by providing tablets to improve their learning and research capabilities.
15. Jharkhand CM Hemant Soren transferred 1,415.44 crore to 56.61 lakh women under the Maiya Samman Yojana on January 6, 2024. Mukhyamantri Maiya Samman Yojana was launched in August 2024.
16. Dr. V. Narayanan, Director of Liquid Propulsion Systems Centre (LPSC), has been appointed as the new ISRO Chairman and Space Secretary. He succeeded S. Somanath on January 14, 2025, for a two-year term or until further orders.
17. Researchers have recently introduced Twigstats, a tool for time-stratified ancestry analysis, in a Nature study. Twigstats significantly enhances statistical power and reduces errors in ancestry studies.
18. The World Economic Forum's (WEF) Future of Jobs Report 2025 predicts AI, big data, and security management specialists as the fastest-growing jobs.
19. AnemiaPhone, developed by Cornell University, is now part of Indian Council of Medical Research (ICMR) programs for anemia, women's health, and maternal and child health in India.
20. India launched the Indian Biological Data Centre (IBDC) Portals, making 10,000 whole genome samples accessible globally. The data set enables advancements in genomics, personalized healthcare, and medicine.
21. Madhya Pradesh launched the PARTH Yojana (Police Army Recruitment Training & Hunar) to train youth for careers in the Army, police, and paramilitary forces. Chief Minister Mohan Yadav unveiled the scheme at the State-Level Youth Festival.
22. World Economic Situation and Prospects 2025 report was recently released by the UN. According to this report, the Indian economy is projected to grow by 6.6% in 2025 and 6.7% in 2026, supported by private consumption and investments.
23. India will host the 28th Conference of Speakers and Presiding Officers of Parliaments (CSPOC) of Commonwealth Countries in 2026.
24. India recently celebrated National Youth Day on January 12, honoring Swami Vivekananda's legacy of youth empowerment. The National Youth Festival (NYF) 2024, held on January 10-12 at Bharat Mandapam, is reimagined as the Viksit Bharat Young Leaders Dialogue.
25. Zoran Milanovic was re-elected as President of Croatia for a five-year term, securing 74% of the run-off vote.
26. Larsen & Toubro launched the second multi-purpose vessel, INS Utkarsh, for the Indian Navy at Kattupalli Shipyard near Chennai. INS Utkarsh, meaning "Superior in Conduct," is built by L&T Shipbuilding Limited.
27. Prime Minister Narendra Modi recently inaugurated the 2nd Bharat Mobility Global Expo 2025 on 17 January 2025 at Bharat Mandapam, New Delhi. The first expo was held in February 2024 in New Delhi.
28. The World Economic Forum recently released the Global Risk Report, first published in 2006, categorizing extreme weather as an "environmental risk."

29. The Trajan 155 mm towed artillery gun system, developed by India and France, has recently secured an export order from Armenia. It is a 155 mm, 52-calibre towed gun system, jointly developed by Larsen & Toubro (L&T) and KNDS France, and manufactured in India.
30. Assam police Chief Gyanendra Pratap Singh is appointed as Director General of the Central Reserve Police Force (CRPF). The CRPF, India's premier central police force under the Ministry of Home Affairs, ensures internal security. It was established in 1939 as the Crown Representative's Police during political unrest in princely states.
31. The India Open 2025 badminton tournament concluded in New Delhi with outstanding performances. Viktor Axelsen of Denmark won his third India Open men's singles title, defeating Lee Cheuk Yiu of Hong Kong China 21-16, 21-8.
32. India is preparing to host the 2036 Olympics, focusing on sustainable sports infrastructure. The first International Olympic Research Conference held at Rashtriya Raksha University, Gandhinagar, Gujarat from January 27-30, 2025.
33. Indian National Centre for Ocean Information Services (INCOIS), Hyderabad has been awarded the prestigious Subhash Chandra Bose Aapda Prabandhan Puraskar for 2025 in the Institutional Category.
34. India has been ranked as the 4th most powerful military in the world according to the Global Firepower Index 2025. The top 3 countries are United States of America, Russia and China. Bhutan ranked lowest at 145th, while Pakistan dropped from 9th to 12th position.
35. The United Nations General Assembly (UNGA) observed January 24 as International Day of Education to highlight education's role in peace and development. It was declared on December 3, 2018, through resolution 73/25
36. India hosted the Second BIMSTEC Expert Group Meeting on Cyber Security Cooperation on 21 January 2025 in New Delhi. The meeting aimed to finalize a 5-year Action Plan for strengthening cyber security among BIMSTEC Member States.
37. NITI Aayog published the Fiscal Health Index (FHI) 2025. It assesses fiscal health across 18 major Indian states using five sub-indices: Quality of Expenditure, Revenue Mobilisation, Fiscal Prudence, Debt Index, and Debt Sustainability. Odisha ranked first with a score of 67.8, followed by Chhattisgarh (55.2) and Goa (53.6).
38. Indore (Madhya Pradesh) and Udaipur (Rajasthan) are the first Indian cities accredited as wetland cities under the Ramsar Convention. The Ramsar Convention promotes conservation and wise use of wetlands globally across 172 member countries.
39. The Inland Waterways Authority of India (IWAI) recently set up a new Regional Office in Varanasi. IWAI, established under the Inland Waterways Authority of India Act (1985), focuses on developing and maintaining Inland Water Transport infrastructure on national waterways.
40. Uttar Pradesh's Mahakumbh tableau recently won the best tableau award at the 76th Republic Day celebrations. Tripura's tableau on Kharchi Puja secured second place, followed by Andhra Pradesh's tableau on Etikoppaka Bommalu wooden toys.
41. The National River Traffic and Navigation System (NRT&NS) was launched on January 11, 2025, by the Union Minister of Ports, Shipping, and Waterways. It aims to ensure safe and efficient operation of inland vessels.

MCQs Based on Current Affairs

1. Consider the following statements regarding the Cashless Treatment Scheme for Road Accident Victims:

1. The scheme covers treatment costs up to 1.5 lakh per incident and applies to all road accidents involving motor vehicles.
2. Victims can receive treatment under the scheme for a duration of up to 30 days after the accident.
3. A police report must be filed within 24 hours of the accident for treatment to be covered under the scheme.

Which of the statements given above is/are correct?

- A: 1 only
B: 1 and 3 only
C: All of the above
D: None of these

2. Consider the following statements regarding Same-Sex Marriage in India:

1. The Supreme Court of India, in its October 17, 2023 ruling, rejected the legal recognition of same-sex marriages.
2. The Supreme Court's ruling in 2023 granted same-sex couples the right to marriage as a fundamental right under the Constitution.
3. In 2018, the Supreme Court of India decriminalized homosexuality by striking off parts of Section 377 of the Indian Penal Code.

Which of the statements given above is/are correct?

- A: 1 and 3 only
B: 2 and 3 only
C: 1, 2, and 3
D: None of these

3. Consider the following statements:

1. According to Census 2011, India has approximately 2.68 crore persons with disabilities, making up 2.21% of the total population.
2. The RPwD Act, 2016 mandates accessibility standards only for public institutions.
3. The Supreme Court's ruling in Rajive Raturi emphasized the need for mandatory, uniform accessibility standards in only public institution.

Which of the statements given above is/are correct?

- A: 1 and 3 only

- B: 1 only
C: 1, 2, and 3
D: None of these

4. What is AnemiaPhone?

- A: A device that treats anemia by providing iron supplements
B: A portable device developed to detect iron deficiency and anemia quickly
C: A mobile application that tracks anemia symptoms
D: A blood transfusion tool for treating severe anemia

5. Assertion (A): Indonesia has joined the BRICS group to strengthen its global influence and benefit from expanded economic cooperation within the group.

Reason (R): BRICS offers Indonesia trade opportunities, access to markets, and infrastructure development, while also helping in reducing reliance on the US dollar through de-dollarisation efforts.

Choose the correct option:

- A: Both Assertion (A) and Reason (R) are correct, and Reason (R) is the correct explanation for Assertion (A).
B: Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation for Assertion (A).
C: Assertion (A) is correct, but Reason (R) is incorrect.
D: Assertion (A) is incorrect, but Reason (R) is correct.

6. With reference to the polar vortex, consider the following statements:

1. It is a large area of high-pressure and cold air that swirls like a wheel around both of the Earth's polar regions.
2. The tropospheric polar vortex disappears during the summer and is the strongest during the autumn.

Which of the statements given above is/are correct?

- A: 1 only
B: 2 only
C: Both 1 and 2
D: Neither 1 nor 2

7. **Assertion (A): The Bijapur Maoist attack of January 6, 2025 indicating a severe lapse in standard operating procedures (SOPs) followed by security forces.**

Reason (R): Security forces operating in Maoist-affected zones follow strict SOPs.

Choose the correct option:

- A: Both Assertion and Reason are correct, and the Reason is the correct explanation for the Assertion.
- B: Both Assertion and Reason are correct, but the Reason is not the correct explanation for the Assertion.
- C: Assertion is correct, but Reason is incorrect.
- D: Assertion is incorrect, but Reason is correct.

8. **Consider the following statements regarding soapstone:**

1. Soapstone is a sedimentary rock system.
2. Soapstone is mainly found in the states of Rajasthan.
3. Soapstone's soft texture makes it an ideal material for countertops, sculptures, and various industrial uses such as cosmetics and pharmaceuticals.

Which of the statements given above is/are correct?

- A: 1 and 3 only
- B: 2, and 3 only
- C: 2 and 3 only
- D: All of the Above

9. **Consider the following statements regarding the first high-level diplomatic talks between India and Afghanistan:**

1. The first high-level diplomatic talks between India and the Taliban government took place in Dubai on January 8, 2025.
2. The discussions mainly focused on security concerns, humanitarian aid, and trade via Iran's Chabahar port.
3. The Taliban declared an 'interim government' in Afghanistan in 2022.

Which of the statements given above is/are correct?

- A: 1 and 2 only
- B: 2 and 3 only
- C: All of the above
- D: 1 only

10. **Which of the following protocols ensures the transparent and fair exchange of India's genomic data?**

- A: FeED Protocols
- B: Biotech Guidelines
- C: Bioeconomy Guidelines
- D: Data Protection Bill

11. **Consider the following statements regarding caste censuses in India:**

1. The practice of caste census begun during the colonial era, with the British administration using caste data for governance.
2. The 1931 Census was the first comprehensive caste census conducted in India, recording 4,147 castes.
3. After the independence, caste census was completely stopped in India.

Which of the statements given above is/are correct?

- A: 1 only
- B: 1, and 3 only
- C: All of the above
- D: None of these

12. **Consider the following statements regarding nitrogen:**

1. Recently, researchers has introduced a new method for improving nitrogen use efficiency (NUE) in plants
2. Researcher found that manipulating nitric oxide (NO) levels in plants could significantly improve nitrogen use efficiency.
3. Nitrogen is a crucial nutrient for plant growth and crop yields.

Which of the statements given above is/are correct?

- A: 1 only
- B: 1, and 3 only
- C: All of the above
- D: None of these

13. **Consider the following statements regarding the transgender persons in India:**

1. As per the Census 2011 data, the total population of 'others' (including transgender) is 4.87 lakh.
2. The SMILE scheme, implemented by the Department of Social Justice and Empowerment,

focuses on solely economic development for transgender persons.

3. Garima Grehs, shelter homes for transgender persons, have been set up in 18 locations across 15 states to provide basic amenities and support skill development.

Which of the statements given above is/are correct?

- A: 1 only
B: 1, and 2 only
C: 1 and 3 only
D: All of the above

14. Consider the following statements regarding the Battery Energy Storage System (BESS) in India:

- India's first Battery Energy Storage System (BESS) will be commissioned in Kilokari, South Delhi in March 2025.
- The project will have a capacity of 20 MW/40 MWh and will supply power for up to 8 hours a day.
- The project is established with the help of BSES Rajdhani and is funded by the Global Energy Alliance for People and Planet (GEAPP).
- India aims to install 47 GW of Battery Energy Storage Systems (BESS) by 2032.

Which of the statements given above is/are correct?

- A: 1, 3, and 4 only
B: 1 and 4 only
C: 1, 3, and 2 only
D: All of the above

15. John Mahama has taken the oath as the President of which country?

- A: Nigeria
B: Ghana
C: South Africa
D: Kenya

16. Assertion: A Fugitive Economic Offender (FEO) is an individual who has committed an economic crime involving 100 crore or more and has fled the country to evade legal action.

Reason: The Fugitive Economic Offenders Act, 2018 enables the authorities to confiscate the assets of individuals involved in economic crimes that

exceed 100 crore.

Which of the following is the most appropriate option?

- A: Both assertion and reason are true, and the reason is the correct explanation for the assertion.
B: Both assertion and reason are true, but the reason is not the correct explanation for the assertion.
C: The assertion is true, but the reason is false.
D: The assertion is false, but the reason is true.

17. What is the primary goal of the climate justice approach to sustainability?

- A: To focus solely on reducing carbon emissions globally
B: To balance environmental sustainability with social equity
C: To focus on adaptation strategies for developed nations
D: To address the technological needs of industrialized nations

18. Consider the following statements regarding India's GDP growth forecast for FY25:

- India's nominal GDP for FY25 is projected to reach Rs 324 lakh crores, reflecting a growth of 9.7% compared to FY24.
- Private consumption (PFCE) is expected to contribute around 60% to India's GDP, but its growth rate since FY20 has been higher than the historical average of 7%.
- Government final consumption expenditure (GFCE) is expected to grow by 4.2% in FY25.
- Net exports (NX) have historically contributed positively to India's GDP growth, with the gap between imports and exports continuing to widen in recent years.

Which of the statements given above is/are correct?

- A: 1 and 3 only
B: 1, 3, and 4 only
C: 2 and 4 only
D: 1 and 2 only

19. Consider the following statements regarding India-Malaysia relations:

- Diplomatic relations between India and Malaysia were established in 1957.
- Malaysia is India's 16th largest trading partner,

with bilateral trade reaching \$20.01 billion in FY 2023-24.

3. The Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA) has minimal impacted the economic ties between two nation.
4. Malaysia supplies a significant portion of India's palm oil imports, amounting to three million metric tonnes annually.

Which of the statements given above is/are correct?

- A: 1, 2, and 4 only
 B: 1, 3, and 4 only
 C: 2, 3, and 4 only
 D: 1, 2, 3, and 4

20. Which of the following is the most likely consequence of climate change on the global water cycle as per the 2024 Global Water Monitor Report?

- A: Decreased rainfall in already wet regions
 B: Increased frequency of extreme weather events
 C: Decline in water-related disasters
 D: Reduction in global water storage

21. According to the recent SBI research on rural poverty, which of the following statements is true regarding the decline in poverty levels in India in FY24?

- A: Rural poverty has decreased to 4.86% in 2023-24, a significant reduction from 25.7% in 2011-12, primarily due to improvements in food prices.
 B: Urban poverty has decreased from 13.7% in 2011-12 to 4.09% in 2023-24, with government programs like Direct Benefit Transfers playing a crucial role.
 C: Consumption inequality has worsened in both rural and urban areas compared to the previous year, showing an increase in disparities.
 D: Food inflation has had little impact on rural areas as the majority of their expenditure is not on food.

22. Consider the following statements regarding poverty:

1. Absolute poverty refers to the lack of income necessary to meet basic living standards like food, shelter, and housing.
2. The World Bank fixed the poverty line to \$2.15

per day in 2022 for measuring absolute poverty.

3. Relative poverty is concerned with comparing the income of an individual or household to the global poverty line.
4. Relative poverty measures deprivation based on how individuals or households compare to the living standards of the surrounding population.

Which of the following statements is/are correct?

- A: Only 1, 2, and 4
 B: Only 1 and 2
 C: Only 3 and 4
 D: Only 1 and 4

23. Assertion (A): Universal Basic Income (UBI) aims to reduce poverty and inequality by providing unconditional financial support to all citizens.

Reason (R): UBI ensures that people have economic freedom and reduces corruption.

Which of the following is the most appropriate option?

- A: Both Assertion (A) and Reason (R) are correct, and Reason (R) is the correct explanation for Assertion (A).
 B: Both Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation for Assertion (A).
 C: Assertion (A) is correct, but Reason (R) is incorrect.
 D: Assertion (A) is incorrect, but Reason (R) is correct.

24. Consider the following statements regarding the recent U.S. decision to remove Indian entities from its "restricted lists":

1. The removal of Indian entities from the restricted lists is expected to increase U.S.-India cooperation in the fields of nuclear energy, space exploration, and technological innovation.
2. This policy shift will primarily benefit India's defense sector by allowing greater access to U.S. defense technologies and strategic resources.
3. The move is likely to have a limited impact on U.S.-India economic and trade relations as it is restricted to only scientific and nuclear sectors.

Which of the statements given above is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only

C: 2 and 3 only
 D: 1 only

25. Consider the following about ISRO's SpaDeX mission:

1. SpaDeX is India's first mission to demonstrate in-space docking technology.
2. SpaDeX primarily focuses on growing plants in space and ensuring food security for astronauts on long missions.
3. It involves two satellites, SDX01 (Chaser) and SDX02 (Target).
4. The success of SpaDeX would place India among countries like the U.S., Russia, and China, capable of in-space docking and laying.

Which of the statements given above is/are correct?

A: 1, 2, and 3 only
 B: 1, 3, and 4 only
 C: 2 and 4 only
 D: 1, 2, 3, and 4

26. Consider the following statements regarding the India-US Initiative on Critical and Emerging Technologies (iCET):

1. iCET was launched in May 2022.
2. iCET aims to promote collaboration in areas like AI, semiconductors, and space exploration.
3. iCET focuses exclusively on civilian technologies, excluding defense and space cooperation.
4. The initiative is run by the National Security Councils (NSCs) of India and the United States.

Which of the following statements is/are correct?

A: 1 and 2 only
 B: 2 and 4 only
 C: Only 1, 2, and 4
 D: Only 3 and 4

27. Assertion: The construction of the Tsangpo Dam poses significant concerns for India due to its potential impact on water security, ecology, and regional stability.

Reason: As the lower riparian state, India depends on the steady flow of water from the Tsangpo River for its agriculture, drinking water, and ecological balance.

Choose the correct option:

- A: Both assertion and reason are correct, and the reason is the correct explanation of the assertion.
 B: Both assertion and reason are correct, but the reason is not the correct explanation of the assertion.
 C: The assertion is correct, but the reason is incorrect.
 D: The assertion is incorrect, but the reason is correct.

28. Consider the following statements regarding the construction of the Tsangpo Dam and its implications for India:

1. The construction of the Tsangpo Dam could reduce agricultural productivity of India.
2. It could threaten the unique biodiversity of the India.
3. India's water security concerns can be easily alleviated through stronger cooperation mechanisms with China.
4. Geopolitical tensions between India and China could be intensified.

Which of the following statements is/are correct?

A: Only 1, 2, and 4
 B: Only 1 and 3
 C: Only 2 and 4
 D: Only 1 and 2

29. Assertion (A): India has condemned Pakistan's recent airstrikes on Afghanistan.

Reason (R): Pakistan's airstrikes were aimed to eliminate anti Pakistan insurgent groups operating from Afghan soil.

Which of the following is the most appropriate explanation for the relationship between the Assertion and Reason?

- A: Both Assertion and Reason are correct, and the Reason is the correct explanation for the Assertion.
 B: Both Assertion and Reason are correct, but the Reason does not explain the Assertion.
 C: The Assertion is correct, but the Reason is incorrect.
 D: The Assertion is incorrect, but the Reason is correct.

30. Which protein, produced in higher levels as a result of loneliness, plays a role in responding to stress and regulating social hormones like oxytocin?

A: Cortisol

- B: Adrenomedullin (ADM)
 C: Insulin
 D: Dopamine

31. Consider the following statements regarding genes and DNA:

1. A gene is a segment of DNA that determines the physical traits and health profile of an organism.
2. DNA is a single-stranded structure composed of four nucleotides.
3. Genes are inherited through two copies, one from each parent.

Which of the statements given above is/are correct?

- A: 1 and 2 only
 B: 1 and 3 only
 C: 2 and 3 only
 D: All of these

32. Consider the following statements regarding the Maha Kumbh Mela 2025:

1. The Maha Kumbh Mela 2025 began on January 13, 2025, and will last for 45 days.
2. The Kumbh Mela is celebrated every 12 years at four sacred locations: Haridwar, Prayagraj, Ujjain, and Nashik.
3. The Kumbh Mela is spiritually significant due to the belief that bathing at the Triveni Sangam in Prayagraj grants moksha (spiritual liberation).

Which of the statements given above is/are correct?

- A: 1, and 3 only
 B: 1 and 2 only
 C: 2 and 3 only
 D: All of these

33. Consider the following statements regarding pink fire retardants:

1. Pink fire retardants, such as Phos-Chek, are primarily used to suppress wildfires.
2. The main components of Phos-Chek include water, ammonium salts like diammonium phosphate, and a colorant.
3. The colorant used in Phos-Chek is green.
4. Phos-Chek is designed to evaporate quickly compare to water.

Which of the statements given above is/are correct?

- A: 1 and 2 only

- B: 2 and 3 only
 C: 1, 2, and 4 only
 D: 1 and 4 only

34. Consider the following statements regarding India-Nepal trade:

1. India is Nepal's largest trading partner, accounting for 64.1% of Nepal's total trade.
2. In the fiscal year 2022-2023, Nepal's exports to India amounted to USD 8.85 billion, while imports from India were valued at USD 839.62 million.
3. Nepal's main exports to India include edible oil, coffee, tea, and jute, reflecting the significance of the agricultural sector in the trade.

Which of the statements given above is/are correct?

- A: 1, and 3 only
 B: 1 and 2 only
 C: 2 and 3 only
 D: All of these

35. Who led the Indian delegation during the India-Nepal Inter-Governmental Committee (IGC) meeting held in Kathmandu in January 2025?

- A: Mr. Gobinda Bahadur Karkee
 B: Shri Sunil Barthwal
 C: Shri Rajesh Kumar
 D: Mr. Ramesh Chandra

36. Consider the following statements regarding the Forest Rights Act (FRA):

1. The Forest Rights Act (FRA) of 2006 was introduced to address the historical denial of rights to tribal communities and forest dwellers.
2. Forced evictions of tribal communities from tiger reserves are permitted under the FRA on the recommendation of NTA.
3. The FRA recognizes three types of rights for tribal communities: individual rights, community rights, and community forest resource (CFR) rights.
4. Gram Sabhas are responsible for identifying, recognizing, and recommending the rights of tribal communities under the FRA, but the final approval is given solely by the Forest Department.

Which of the statements given above is/are correct?

- A: 1, 3, and 4 only
 B: 1 and 3 only
 C: 2 and 4 only
 D: All of these

37. Consider the following statements regarding the Deccan Traps:

1. The Deccan Traps are located in west-central India and cover over 500,000 square kilometers.
2. The volcanic activity that created the Deccan Traps occurred around 100 million years ago, during the Jurassic period.
3. The Deccan Traps were formed by volcanic eruptions caused by the Indian Plate moving over a hotspot beneath Reunion Island.
4. The landscape of the Deccan Traps is characterized by layered basaltic rock formations, which are responsible for the stepped appearance of the region.

Which of the statements given above is/are correct?

- A: 1 and 3 only
 B: 1, 3, and 4 only
 C: 2 and 4 only
 D: All of these

38. Assertion (A): Dermatologists are calling for renaming the fungal pathogen Trichophyton indotineae.

Reason (R): The pathogen was originally named after India as it was first identified in the region, but its global spread challenges the idea that India is its true origin.

Which of the following is the correct answer?

- A: Both Assertion (A) and Reason (R) are correct, and Reason (R) correctly explains Assertion (A).
 B: Both Assertion (A) and Reason (R) are correct, but Reason (R) does not correctly explain Assertion (A).
 C: Assertion (A) is correct, but Reason (R) is incorrect.
 D: Both Assertion (A) and Reason (R) are incorrect.

39. Assertion (A): The Z-Morh tunnel is expected to boost tourism and economic growth in the Sonamarg region.

Reason (R): The tunnel, which bypasses avalanche-prone areas, will ensure uninterrupted access for

both defense logistics and civilian transportation. Which of the following is the correct answer?

- A: Both Assertion (A) and Reason (R) are correct, and Reason (R) correctly explains Assertion (A).
 B: Both Assertion (A) and Reason (R) are correct, but Reason (R) does not correctly explain Assertion (A).
 C: Assertion (A) is correct, but Reason (R) is incorrect.
 D: Both Assertion (A) and Reason (R) are incorrect.

40. Consider the following statements regarding Thiruvalluvar:

1. Thiruvalluvar authored the "Tirukkura" a collection of 1,330 couplets divided into three main sections.
2. Thiruvalluvar's work primarily focuses on religious teachings and practices.
3. The "Tirukku a" has had a significant influence not only in Tamil literature but also in various global cultures and philosophical traditions.

Which of the statements given above is/are correct?

- A: 1 and 3 only
 B: 2 and 3 only
 C: All of These
 D: None of These

41. Consider the following statements regarding Mission Mausam:

1. Mission Mausam was inaugurated by Prime Minister Narendra Modi on January 14, 2024, during the 150th Foundation Day celebrations of the India Meteorological Department (IMD).
2. The mission will focus on weather surveillance and forecasting exclusively for agriculture and tourism sectors.
3. A key feature of the mission is the establishment of a first-of-its-kind cloud chamber at the Indian Institute of Tropical Meteorology (IITM) in Pune.

How many of the above statements are correct?

- A: Only 1
 B: Only 2
 C: All three
 D: None

42. Consider the following statements regarding INS Rajali:

- INS Rajali is located 80 kilometers west of Chennai, Tamil Nadu, and spans across 2,200 acres.
- It is the largest and most modern Naval Air Station of the Indian Navy, located in southern India.
- INS Rajali was commissioned on March 11, 1995, and is named after a bird of the Falcon family.
- The station plays a dual role in both operations and training, contributing significantly to India's maritime security.

How many of the above statements are correct?

- A: Only 1
B: Only 2
C: Only 3
D: All four

43. Who was part of the first successful space docking mission, Gemini VIII, in 1966?

- A: Buzz Aldrin
B: John Glenn
C: Neil Armstrong
D: Alan Shepard

44. Consider the following statements regarding the World Meteorological Organization (WMO):

- WMO is a specialized agency of the United Nations responsible for meteorology, climate, hydrology, and related geophysical sciences.
- The World Meteorological Organization was established in 1950.
- The WMO is governed by the World Meteorological Congress, which meets annually to set policies and adopt regulations.
- The WMO's headquarters is located in Geneva, Switzerland.

How many of the above statements are correct?

- A: Only 1
B: Only 2
C: Only 3
D: All four

45. Match the vessels with their respective descriptions.

Vessels:

- INS Nilgiri
- INS Surat
- INS Vaghsheer

Descriptions:

- A: The lead ship of Project 17A stealth frigate class, incorporating advanced stealth technology and aviation facilities for multiple helicopter operations, including the newly inducted MH-60R.
- B: The fourth vessel of the Project 15B stealth destroyer class, enhancing the Indian Navy's maritime defense capabilities with advanced design improvements.
- C: The sixth and final submarine under the Scorpene-class Project 75 A, designed for anti-surface and anti-submarine warfare, with features like modular construction and air-independent propulsion technology.

A: 1 - A, 2 - B, 3 - C

B: 1 - B, 2 - C, 3 - A

C: 1 - C, 2 - A, 3 - B

D: 1 - A, 2 - C, 3 - B

46. Consider the following statements regarding the 8th Pay Commission:

- The 8th Pay Commission was approved by the Union Cabinet to revise pay scales and allowances for government employees, including pensioners.
- The pay revision will include a uniform 10% increase in basic salaries across all levels of government employees.
- The Commission's recommendations are expected to positively impact approximately 67 lakh pensioners and 49 lakh Central Government employees.

How many of the above statements are correct?

- A: Only 1
B: Only 2
C: All three
D: None

47. Consider the following statements:

- The Third Pay Commission was formed in 1986 under the chairmanship of J. M. M. Sinha.
- The Fifth Pay Commission, headed by Justice S. Ratnavel Pandian, reduced pay scales from 51 to 34.
- The Eighth Pay Commission is to be implemented by January 2026

How many of the above statements are correct?

- A: Only 1
 B: Only 2
 C: All three
 D: None

48. In which year was the Tharu tribe officially recognized as a Scheduled Tribe by the Government of India?

- A: 1950
 B: 1967
 C: 1980
 D: 1995

49. Assertion (A): The drastic decline of air quality in Delhi is caused by a combination of factors, such as calm winds, low temperatures, and dense fog.

Reason (R): These weather conditions trap pollutants close to the ground, worsening the pollution levels.

Which of the following options is correct?

- A: Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation for Assertion (A).
 B: Both Assertion (A) and Reason (R) are true, but

Reason (R) is not the correct explanation for Assertion (A).

- C: Assertion (A) is true, but Reason (R) is false.
 D: Assertion (A) is false, but Reason (R) is true.

50. Consider the following statements regarding TRAI's Draft Telecommunication Tariff (71st Amendment) Order, 2025:

- The primary aim of the amendment is to reduce the cost of internet connectivity for Public Data Offices (PDOs) under the PM-WANI scheme.
- The revised proposal suggests that broadband tariffs for PDOs under PM-WANI should not exceed five times the tariff applicable for retail broadband services.
- TRAI's proposed tariff rationalization aligns with the National Digital Communications Policy, 2018, and the Bharat 6G Vision.

How many of the above statements are correct?

- A: Only 1
 B: Only 2
 C: All three
 D: None

ANSWER

1	B
2	A
3	B
4	B
5	A
6	D
7	B
8	B
9	A
10	A

11	A
12	C
13	C
14	A
15	B
16	B
17	B
18	A
19	A
20	B

21	B
22	A
23	B
24	D
25	B
26	B
27	A
28	A
29	B
30	B

31	B
32	D
33	A
34	A
35	B
36	B
37	B
38	A
39	A
40	A

41	A
42	C
43	C
44	C
45	A
46	B
47	B
48	B
49	B
50	D



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