

CURRENT AFFAIRS

WEEKLY



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- ❑ WOMEN-LED GROWTH MODEL IN INDIA
- ❑ 'PURVODAYA' PLAN TO BOOST TOURISM

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- ❑ PALESTINIAN UNITY DECLARATION
- ❑ JOB QUOTAS
- ❑ BIHAR ASSEMBLY PASSES BILL TO CURB PAPER LEAKS
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- ❑ Changes to the Income Tax Regime
- ❑ Abolition of Angel Tax

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- ❑ Kerala releases guidelines on Amoebic Meningoencephalitis
- ❑ PC Emulator
- ❑ Rogue Waves
- ❑ Genetically Modified Mustard (DMH-11)

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DISCLAIMER

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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I am grateful to GS SCORE for providing guidance to me and many more aspirants. I practiced a lot with GS SCORE.

AISHWARYAM PRAJAPATI (AIR-10, CSE 2023)



I am truly grateful to GS SCORE for their guidance. They offered genuine mentorship.

MEDHA ANAND (AIR 13, CSE 2023)

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SECTION -A

MAINS ISSUES

KERALA'S INITIATIVE
TO PROMOTE GENDER
NEUTRALITY IN SCHOOL
TEXTBOOKS

Context

In a significant stride towards gender neutrality, the Kerala government has initiated a comprehensive overhaul of school textbooks. The aim is to challenge traditional stereotypes by depicting men and other family members participating in domestic activities such as cooking, alongside women. This pioneering move seeks to instill **inclusive values in children** from an early age, thereby fostering a more **equitable society**.

Impact of the Initiative

- **Normalize shared responsibilities within the household:** The revamped textbooks feature images showing fathers engaged in household chores traditionally considered the domain of women. This visual representation is pivotal in breaking down deep-seated gender stereotypes prevalent in society.
- **Social Change:** This shift in portrayal is not merely symbolic but sets a precedent for how gender roles are perceived and practiced, particularly among younger generations.
- **Holistic Approach to Gender-Neutral Education:** This initiative is part of Kerala's broader efforts to promote gender-neutral education. In addition to revising textbooks, the state has introduced gender-neutral uniforms in select schools and is transitioning towards more mixed-gender educational institutions by phasing out single-gender schools.

Kerala's progressive steps reflect its commitment to building a society that is inclusive and equitable. These measures are designed to create an environment where children can grow up with a balanced understanding of gender roles and expectations.

WOMEN-LED GROWTH MODEL
IN INDIA

Context:

Recently, the Chief Economic Advisor (CEA) has mentioned about the **218.8%** increase in budgetary allocation for schemes for the welfare and empowerment of women and even acknowledged that women in India face the "motherhood penalty" with a drop-in female labour force participation rate around childbearing years.

About the move:

- As announced in the budgetary discussion, the central government is going to increase the gender budgeting up to **6.5% of the GDP**, in the financial year 2025.
- The step will enhance the stability of the women-led development model and increase fund allocation for Gender budgeting.

What is Gender Budgeting?

- Gender Budgeting is a powerful tool for achieving gender mainstreaming to ensure that the benefits of development reach women as much as men.
- The rationale for gender budgeting arises from recognition of the fact that national budgets impact men and women differently through the pattern of resource allocation.

- Women constitute **48% of India's population**, but they lag behind men on many social indicators like health, education, economic opportunities, etc. thus, gender budgeting is important.

Gender budgeting status in India:

- Gender Budget Statement was first introduced in Budget 2005-06. Various ministries and department provide information to finance ministry based on which Gender Budget Statement is prepared.
- This helps to monitor expenditure and public service delivery from a gender perspective, as a means of mainstreaming women's concerns in all activities and improving their access to public resources.
- Also, it was instructed to all the ministries and departments, to open the Gender Budgeting Cell (GBC).

Issues with Gender Budgeting in India:

- India's gender Budget remains in the range of **4 - 6% of the total expenditure** and less than 1% of its GDP. It also lacks fiscal marksmanship, which is the accuracy of budgetary forecasting.
- Around **90% of gender budgeting** is concentrated in five ministries. When it comes to livelihood, MGNREGA is the biggest scheme in gender budgeting.
- Areas like transportation, water collection and water security remain ignored.
- The last Budget failed to address critical areas highlighted by the pandemic in 2021-22 and 2022-23, despite the disproportionate impact of Covid-19 on women.

Measures to bring care economy in monetized economy

- Recognize unpaid Work:** Recognizing the economic value of unpaid care work.
- Equal Pay for Equal Work:** Irrespective of whether it falls under the care or monetized economy.
- Social Protection Measures:** Implementing policies like paid parental leave, Work from home (WFH) culture, subsidized healthcare, and pensions, which support women in their dual roles as caregivers and workers.
- Supporting Women's Employment:** Providing opportunities to participate in the formal labor force through skill development, training, education, and policies that enable work-family balance.
- Promoting Women's Entrepreneurship:** Encouraging and supporting women to start and grow businesses, especially in sectors related to care services. Income-Generating Activities through Self-Help Groups.

'PURVODAYA' PLAN TO BOOST TOURISM

Context

The Union Budget 2024 has marked a significant shift towards promoting tourism in Bihar and Odisha, highlighting these states' **cultural richness and potential for economic development**. This move aligns with the government's broader strategy of regional development under the '**Purvodaya**' plan, aimed at transforming the eastern region of India into a hub of growth and cultural heritage.

What is 'Purvodaya' Plan?

- The 'Purvodaya' plan targets holistic development across **Bihar, Jharkhand, West Bengal, Odisha, and Andhra Pradesh**.
- To propel these states as engines of development, it emphasizes:
 - human resource development
 - infrastructure enhancement
 - economic opportunities
- Tourism Strategy:** The shift from **circuit-based** to **destination-based tourism** signifies a focused approach towards developing specific tourist destinations. This includes upgrading tourist facilities, improving connectivity, and boosting local economies through tourism-related activities.

Focus on Bihar and Odisha:

- Tourism Development:** Bihar and Odisha have been identified for comprehensive tourism development initiatives. The focus includes enhancing infrastructure, connectivity, and tourist facilities at key heritage sites like the
 - Vishnupad temple in Gaya
 - Mahabodhi temple in Bodhgaya (Bihar)
 - and various cultural and natural attractions in Odisha
- A new temple corridor will be constructed for Vishnupad at Gaya. Similarly, a new corridor will be built for Mahabodhi temple corridor at Bodh Gaya. Both the corridors will be supported and modelled on the Kashi Vishwanath temple
- On the same lines, a comprehensive development scheme has been announced for Rajgir. Rajgir has immense spiritual significance for Hindus, Buddhists and Jains.
- Nalanda in Bihar will be developed as tourist destination.



The slide features the Union Budget 2024-25 logo with a large Rupee symbol, the Ministry of Finance logo with the motto 'सत्यमेव जयते', and the PIB logo. The word 'Tourism' is written in large orange letters. Below it, four bullet points are listed, each preceded by a small orange circle and followed by a horizontal line.

- Vishnupad Temple Corridor and Mahabodhi Temple Corridor to be supported to transform Vishnupad Temple at Gaya and Mahabodhi Temple at Bodh Gaya into world-class pilgrim and tourist destinations
- Rajgir to be comprehensively developed
- Nalanda to be developed as a tourist Centre, Nalanda University to be revived to its glorious stature
- Assistance to make Odisha an ultimate tourism destination

FIGURE: 01



FACT BOX

Key-Locations

- **Vishnupad temple in Gaya:** Dedicated to Lord Vishnu, the temple was erected during 1787 by Queen Ahilyabai.
 - ▶ It is located on the banks of Phalgu river.
 - ▶ It features a 40-cm-long footprint of Lord Vishnu in a basalt rock.
- ♦ **Ratnagar Chaitya:** Where Buddha spent the Fourth Week, located near the north-east enclosure wall.
- ♦ **Ajapala Nigrodh Tree:** Marked by a pillar where Buddha meditated and interacted with Brahmins during the Fifth Week.
- ♦ **Lotus Pond:** Where Buddha spent the Sixth Week, located south of the enclosure.

- ♦ **Rajyatana Tree:** Marked as the site where Buddha spent the Seventh Week.
- ▶ **Nalanda University:** The new campus of Nalanda University was recently inaugurated at Rajgir, Bihar. The University is conceived as a collaboration between India and **East Asia Summit (EAS) countries**. The original Nalanda University was established around 427 CE by Gupta Emperor Kumaragupta I. Later, it also received patronage from **Harshavardhana** and the Pala rulers.
 - ♦ Founded 1600 years ago, Nalanda is recognized as the world's first residential university, pre-dating Oxford and Bologna by over 500 years.
 - ♦ **Decline:** Nalanda began its decline during the late Pala period but faced devastation during Bakhtiyar Khilji's invasion around 1200 CE. The library, housing millions of manuscripts, was famously burned for three months.
 - ♦ **Historical Travellers:** Accounts from Chinese travelers like Hiuen-Tsang and I-Tsing provide detailed insights into the university's academic and cultural richness.

- ◆ **UN Heritage Site:** The ruins of Nalanda were recognized as a **UNESCO World Heritage Site in 2016**, underscoring its global historical significance.
- ▶ **Rajgir** is an ancient city famous in Bihar, known for its Jain temple and hot spring.

PALESTINIAN UNITY DECLARATION

Context:

Palestinian factions Hamas and Fatah signed a unity declaration in China aimed at forming a joint government to govern Gaza and the West Bank following the end of the recent Israel-Hamas conflict.

Background:

- Hamas, an Islamist party, and Fatah, a secular party, have been bitter rivals since the late 1980s.
- Their conflict intensified after Hamas won the 2006 Palestinian legislative elections and subsequently took control of Gaza from Fatah in 2007 through a violent takeover.

Key Points of the Deal:

- **Formation of Unity Government:** The agreement outlines the establishment of an interim national unity government to govern Gaza and the West Bank.
- **Unified Palestinian Leadership:** It aims to create unified leadership among Palestinian factions in preparation for future elections.
- **Elections for Palestinian National Council:** The deal calls for free and fair elections to elect a new Palestinian National Council.
- **Declaration of Unity:** It emphasizes solidarity among Palestinian groups in response to ongoing Israeli military actions.

Implications:

- **Internal Palestinian Unity:** The agreement potentially paves the way for reconciliation and cooperation between Hamas and Fatah after years of division and conflict.
- **Political Stability:** A unified government could provide greater political stability in Gaza and the West Bank, potentially reducing internal tensions and improving governance.
- **International Reaction:** The deal could influence international perceptions of Palestinian unity and impact foreign policy approaches towards the Palestinian territories.
- **Challenges Ahead:** Divergent views on Israel, Hamas's refusal to recognize Israel, and the implementation of the agreement's provisions remain significant challenges to lasting unity and peace.

JOB QUOTAS

Context:

The Supreme Court of Bangladesh recently ruled to **abolish most quotas on government jobs**, triggering widespread protests that have turned violent and resulted in casualties. The protests initially erupted in response to the High Court's decision to reinstate the quota system, which Prime Minister Sheikh Hasina's government had previously abolished in 2018.

Reasons for Protests:

- **Quota System Reinstatement:** Students began protesting when the High Court revived the quota system for government jobs. This decision was seen as favoring specific groups, such as family members of freedom fighters from the **1971 independence war**.
- **Government Appeal and Supreme Court's Decision:** Following the protests and government's appeal, the Supreme Court suspended the High Court's order.
 - ▶ Recently, it dismissed the order entirely and mandated that 93% of government jobs should be based on merit.
 - ▶ Only 5% of jobs will now be reserved for family members of independence fighters, and 2% for people from backward groups and the disabled.

Implications and Concerns:

- **Criticism of Quota System:** Critics argue that the quota system, which reserved 56% of government jobs before its abolition, unfairly limited opportunities based on merit. Students demanded the complete abolition of all categories except those for indigenous communities and the disabled.
- **Economic and Social Context:** The protests reflect broader concerns about high youth unemployment, stagnant job growth in the private sector, and economic challenges. Bangladesh's economy, once thriving, has slowed down with high inflation and shrinking dollar reserves, exacerbating frustrations among the youth seeking employment.



FACT BOX

Current Scenario of Reservation (Quota System)

- Reservation quota in India for Government Jobs
 - ▶ **Scheduled Castes:** 7.5
 - ▶ **Scheduled Tribes:** 15
 - ▶ **Other Backward Castes (OBC):** 27
 - ▶ **Economical Weaker Section (EWS):** 10 (introduced through **103rd Constitutional Amendment (2019)**)

- In India, reservation policies aim to provide equitable opportunities in education, government jobs, and legislatures:
 - ▶ **Government Educational Institutions:** Reserved seats for SCs, STs, OBCs, and EWS in institutions like IITs and IIMs under Article 15(4), (5), (6).
 - ▶ **Government Jobs:** Quotas for SCs, STs, OBCs, and EWS in civil services like IAS, IPS, etc., under Article 16(4), (6).
 - ▶ **Legislatures:** Seats reserved for SCs and STs in Parliament and State Legislatures under Article 334.

BIHAR ASSEMBLY PASSES BILL TO CURB PAPER LEAKS

Context

In Bihar, the state assembly passed a stringent bill to curb paper leak cases, malpractices and irregularities in government competitive examinations.

Key-highlights of the Bihar Public Examination (Prevention of Unfair Means) Bill 2024

- **Penalty:** The Bill proposes a jail sentence from three years to 10 years and a penalty of up to one crore rupees in serious cases. There is the provision of stringent punishment for convicted candidates who are involved in paper leak cases and malpractices which includes sentences to jail terms from three to five years and penalty up to 10 lakh rupees.
- As per the provisions of the Bill, all the competitive recruitment and entrance examinations conducted by government agencies will come under its mandate.
 - ▶ The Bihar Public Service Commission, Bihar University Service Commission, Bihar Staff Service Commission, Bihar Technical Services Commission, Central Selection Board of Constables, Bihar Police Sub-Ordinate Services Commission and other notified authorities will come under the mandate of the bill.
- All the charges of paper leak cases have been made **cognizable offences** in this bill.
- In the Bill, there is a provision for **seizure of the assets of convicts** who are entrusted to hold examinations.

Factors responsible for cheating and exam leaks

India's examination system is in chaos. To be sure, cheating and paper leaks have long plagued exams. But now, major exams managed by the state-run National Testing Agency (NTA).

- Over-emphasis that has been placed on passing exams.
- Societal pressure is another major cause for cheating
- Despite decades of rapid economic growth, India has been slow to reform its higher education system.

- Many unfair practices also go unnoticed and the culprits go scot-free.
- Setting question papers and their printing and transport to examination centres, and transporting the completed answer (or OMR) sheets to the evaluation centres, have all been wrought with loopholes.

Impact:

- **Inequality:** Cheating in government exams perpetuates inequalities by favoring those who can afford to pay for leaked exam papers or engage in fraudulent activities, while disadvantaging those who rely on their hard work and merit to succeed.
- **Undermined principle:** Cheating in government exams *undermines the principles of meritocracy and equal opportunities.*
- **Brain drain:** In 2022, more than 750,000 Indians went abroad to study - almost double the number in 2018, according to the foreign ministry data.
- **Incompetency:** It could lead to the recruitment of incompetent or unqualified individuals in key government positions, which could have detrimental effects on **public service delivery, governance, and overall development.**



FACT BOX

Government initiatives and stakeholder action

- **Public Examinations (Prevention of Unfair Means) Act, 2024:** It carries a jail sentence of three to 10 years for those who facilitate cheating.
- **APAAR ID:** The introduction of an Aadhaar-like APAAR ID (Automated Permanent Academic Account Registry) seeks to add a layer of digital identity verification during examinations.
- Like Bihar, other states have also moved in the same direction, including
 - ▶ **Jharkhand** (Jharkhand Competitive Examination (Prevention and Redressal of Unfair Means in Recruitment) Bill)
 - ▶ **Uttarakhand** (Uttarakhand Competitive Examination (Measures For Control and Prevention of Unfair Means in Recruitment) Act)
 - ▶ **Gujarat** (Gujarat Public Examination (Prevention of Unfair Methods) Act)
 - ▶ **Rajasthan** (Rajasthan Public Examination (Measures for Prevention of Unfair Means in Recruitment) Bill)
 - ▶ **Haryana** (Haryana Public Examination (Prevention of Unfair Means) Bill)

CHALLENGES IN IMMUNISATION COVERAGE FOR CHILDREN IN INDIA

Context

A recent report by WHO and UNICEF has highlighted **significant concerns regarding India's immunisation efforts**. In 2023, India ranked **second globally**, following Nigeria, in the number of children who did not receive any vaccines. Specifically, India recorded **1.6 million "zero-dose" children**, indicating those who missed out on all routine immunisations.

Key-highlights of the Report:

- **DPT Vaccine Coverage:** There was a slight decline in coverage for the diphtheria, pertussis, and tetanus (DPT) vaccine from 95% in 2022 to 93% in 2023. This serves as an indicator for zero-dose children.
- **Measles Vaccine Coverage:** India also ranked third globally in the number of children who did not receive the measles vaccine, with 1.6 million children missing out on this essential immunisation.
- **Comparison with Neighbouring Countries:** Pakistan and Afghanistan, neighbouring countries, showed relatively lower numbers of unvaccinated children compared to India, indicating varying immunisation challenges across South Asia.

Who are Zero-Dose Children?

- **WHO Definition:** Zero-dose children are those who have not received any routine immunisation services, particularly the first dose of the DPT vaccine. This metric helps identify gaps in immunisation coverage and guides intervention strategies.

Risk Factors and Access to Immunisation

- ▶ **Risk Profile:** Children classified as zero-dose in India are primarily those who missed the initial DPT vaccine dose administered around six weeks after birth.
- ▶ **Health Facility Births:** Around 88.6% of births in India occur in health facilities, ensuring access to vaccines like BCG (against tuberculosis) for most newborns.

KARNATAKA'S DOMICILE QUOTA IN JOBS

Context:

The issue of job reservations for local candidates in the private sector has sparked debate and legal challenges in India, particularly following recent legislative actions by states like Karnataka, Andhra Pradesh, and Haryana. These states have attempted to mandate quotas for local residents in private sector jobs, raising constitutional questions and facing opposition from various quarters.

Domicile-based reservations & Challenges

In India, the debate over job quotas for local candidates in the private sector has stirred legal and constitutional discussions:

Constitutional Guarantees and Affirmative Action:

- ▶ The Indian Constitution upholds fundamental rights such as freedom to move and settle anywhere within the country (**Article 19**).
- ▶ **Article 15** prohibits **discrimination** based on religion, race, caste, sex, or place of birth, forming the basis for affirmative action laws.

Affirmative Action Laws under Article 16:

- ▶ Article 16 ensures **equality of opportunity in public employment** and allows states to reserve posts for backward classes not adequately represented.
- ▶ States can prescribe residence requirements, but not based solely on place of birth, to ensure fair representation in state services.

Legal Challenges and Court Views on Domicile Quotas:

- ▶ Courts have consistently struck down laws imposing domicile quotas in public employment beyond permissible limits.
- ▶ Recent cases in Andhra Pradesh and Haryana attempting to enforce domicile quotas in the private sector have faced constitutional scrutiny.
- ▶ The Supreme Court has highlighted concerns that such quotas may foster regionalism over national unity and have populist appeals.



FACT BOX

SC's Judgments on domicile-based reservations

The Supreme Court of India has issued key judgments on domicile-based reservations:

- **Dr. Pradeep Jain v. Union of India (1984):** SC allowed some preference for domicile candidates in public employment and education but emphasized it should not be absolute. Ensured that merit and efficiency are not compromised by domicile preferences.
- **Sunanda Reddy v. State of Andhra Pradesh (1995):** The ruling struck down 100% domicile reservation in postgraduate medical courses. It upheld that reservations should not undermine educational standards and merit.

- **Kailash Chand Sharma v. State of Rajasthan (2002):** The ruling invalidated Rajasthan's preferential treatment to local candidates in public employment. It stressed that domicile-based preferences must align with constitutional principles of equality under **Articles 14 and 16.**

U-WIN (UNIVERSAL IMMUNISATION PROGRAMME WEB INTERFACE)

Context:

The **U-WIN (Universal Immunisation Programme Web Interface)** has emerged as a significant initiative in India's healthcare agenda, aimed at digitizing and improving childhood vaccination efforts across the country.

About U-WIN:

- The U-WIN portal, a replication of the Covid-19 vaccine management system **Co-WIN**, captures every vaccination event for pregnant women and children under the **Universal Immunization Programme (UIP).**
- **Registration and Digital Records:**
 - Children up to six years old and pregnant mothers are registered using government IDs like Aadhaar and their mobile numbers.
 - The platform records all 25 vaccinations for children and two for pregnant mothers, generating a digital vaccination certificate.
- It also facilitates the creation of **Ayushman Bharat Health Account (ABHA) IDs** for comprehensive health record maintenance.

Benefits and Functionality:

- **Portability:** It allows vaccinations to be administered anywhere in India, facilitating continuity for migrant children.
- **Reminders:** It sends SMS alerts to parents for upcoming vaccine doses, enhancing compliance and reducing missed vaccinations.
- **Decision Support:** It acts as a safeguard against administering incorrect doses by alerting healthcare workers in real-time.
- **Integration:** Linked with **eVIN (Electronic Vaccine Intelligence Network)** for inventory management, ensuring efficient vaccine distribution and monitoring.

Impact on Immunization Efforts:

- **Individualized Data:** It provides detailed, individual-level vaccination data nationwide, aiding in targeted interventions and reducing errors.
- **Policy Insights:** It centralizes data to inform better policymaking and implementation strategies, potentially reducing the number of zero-dose children and improving overall vaccination coverage.

REGULATING GIG-BASED WORK

Context:

The Karnataka government's recent intent to introduce legislation for the welfare of gig workers is a necessary step to overcome the challenges to boost gig-economy in India.

What is Gig Economy?

- As per the **World Economic Forum (WEF)**, gig economy is defined by its focus on **workforce participation and income generation via "gigs"**, single projects or tasks for which a worker is hired.
- Gig economy includes **all platforms** that **hire independent workers** across sectors like e-commerce, technology, food & beverages, home services among others.
- Gig workers are typically **hired by companies on a contractual basis** and are not considered employees. They do not receive some of the benefits that on-roll staffs do.
- **Classification:** Gig workers can be broadly classified into:
 - **Platform workers:** Those whose work is based on online software apps or digital platforms such as food aggregator platforms Zomato, Swiggy, Ola, and others.
 - **Non-platform-based workers:** Casual wage and own-account workers in conventional sectors, engaged part-time or full-time.

Benefits of Gig Economy:

- **For Workers:** Gig economy can provide more flexibility, autonomy, income opportunities, skill development, and inclusion.
- **For Employers:** It can enable access to a large and diverse pool of talent, lower fixed costs, higher scalability, and better customer satisfaction.
- **For Customers:** It can offer more choice, convenience, quality, and affordability.

Current trend in the Indian Economy

- about 47% of gig work is in medium skilled jobs
- about 22% in high skilled
- about 31% in low skilled jobs

The trend shows the concentration of workers in medium skills is gradually declining and that of the low skilled and high skilled is increasing.

Expected trend:

- While in 2020-21, the gig workforce constituted 2.6% of the non-agricultural workforce or 1.5% of the total workforce in India, by 2029-30, gig workers are expected to form 6.7% of the non-agricultural workforce or 4.1% of the total livelihood workforce in India.

Why there is a need to regulate Gig-Economy?

- **Due to non-permanent in nature:** These jobs mainly have temporary contracts typically come with less protection, fewer benefits and pecuniary discounts.
- **To bring gig-workers under Employment benefits protocol:** The workers are mostly left out of the traditional social protection systems such as unemployment benefits, sick pay and pensions.
- **Insurance and financial aids:** Most transactions on the gig economy are done via the internet and as such they can be tracked. These companies do need to contribute to insurance and other social contributions.
- **To reduce inequality of Income:** Due to the increasingly complex supply chains and sub-contracting of gig jobs, make it hard to enforce protections. But without doing so we will not be able to combat the increasing levels of inequality.

Existing Laws and regulations:

- **Code on Wages, 2019:** A universal minimum wage and floor wage should be provided to all organized and unorganized sectors, including gig workers.
- **Code on Social Security 2020:** Under this, gig workers are provided with recognition as a new occupational category.

UNION BUDGET 2024-25: INFRASTRUCTURE INITIATIVES

Context:

In the Union Budget, Finance Minister Nirmala Sitharaman announced a significant boost in infrastructure spending, highlighting its pivotal role in driving economic growth and improving living standards across India.

Key Highlights:

- **Infrastructure Spending Surge:** The government has allocated Rs 11,11,111 crore for capital expenditure on infrastructure, equivalent to 3.4% of the GDP. This marks a doubling of infrastructure spending from 1.7% of GDP three years ago.
- **Support to State Governments:** A provision of Rs 1.5 lakh crore has been made for interest-free loans to state governments, aimed at bolstering their infrastructure investments.
- **Pradhan Mantri Gram Sadak Yojana (PMGSY):** Under Phase-4 of PMGSY, the government plans to provide all-weather connectivity to 25,000 rural habitations, enhancing rural accessibility and connectivity.
- **Accelerated Irrigation Benefit Programme:** A support of Rs 11,500 crore has been earmarked for projects like the Kosi-Mechi intra-state link under this programme, aiming to improve irrigation infrastructure and agricultural productivity.

- **Special Packages for North and Northeastern States:** Assam, Himachal Pradesh, Uttarakhand, and Sikkim will receive assistance for flood management and recovery from natural disasters like cloud bursts, flash floods, and landslides.
- **PM Awas Yojana - Housing for All:** The government has committed to constructing three crore additional houses under PM Awas Yojana in both rural and urban areas, ensuring adequate housing for all sections of society.
- **Rural Development and Infrastructure:** An allocation of Rs 2.66 lakh crore has been set aside for rural development, including infrastructure projects, aimed at improving connectivity, healthcare, education, and economic opportunities in rural India.

Multiplier Effect of Infrastructure:

Infrastructure development plays a crucial role in stimulating economic growth and improving overall quality of life. The multiplier effect of increased infrastructure spending includes:

- **Industry Boost:** Improved infrastructure enhances productivity and efficiency across industries, fostering economic growth and job creation.
- **Connectivity:** Enhanced connectivity through better roads, railways, and digital infrastructure facilitates smoother movement of goods and people, reducing logistical costs and improving trade efficiency.
- **Quality of Life:** Upgraded infrastructure, including better healthcare, education facilities, and housing, directly contributes to an improved quality of life for citizens.
- **Economic Development:** Infrastructure investments act as catalysts for economic development by attracting private investments, boosting consumer spending, and supporting entrepreneurship.
- **Resilience and Sustainability:** Modern infrastructure strengthens resilience against natural disasters and climate change impacts, ensuring sustainable development in the long term.

PRIMARY HEALTHCARE FUNDING

Context:

The Economic survey has urged for a significant increase in **social security expenditure on health**, which was earlier estimated to grow from 5.7 per cent in FY15 to 9.3 per cent in FY20.

Primary Health Care (PHC) in India:

- Primary health care is the basic level of health care which includes programs focused on the elevation of health, the initial diagnosis of disease or ill health, and deterrence of illness.
- It involves the key healthcare structure which delivers the first level of interaction between the healthcare providers and the population. E.g., Sub Centres (SCs) and Primary Health Centres (PHCs).

Need for PHC:

According to the **Rural Health Statistics report for 2021-22**, there is an acute shortage of specialist doctors in rural areas of India, particularly at **Community Health Centers (CHCs)**.

The specific specialties experiencing a shortfall include **surgeons (83.2%), obstetricians and gynaecologists (74.2%), physicians (79.1%), and paediatricians (81.6%)**.

- **Shortage of Specialists:** The report reveals that nearly 80% of the required specialist doctors are unavailable at CHCs.
- **Increase in Specialist Doctors:** While the number of specialist doctors at CHCs has increased by 25% over the years, from 3,550 in 2005 to 4,485 in 2022, this growth has not been sufficient to meet the rising demand for specialists in rural areas.
- **Lack of Female Health Workers:** In addition to the shortage of specialist doctors, there is also a dearth of female health workers and auxiliary nursing midwives in primary health centers (PHCs) and sub-centers, with up to 14.4% of these positions remaining vacant.

Initiatives related to Primary Health Care Facilities:

- **Health and Wellness Centres (HWCs):** HWC are created under Ayushman Bharat Programme by converting the existing primary health centres and subcentres. They provide comprehensive primary health care (CPHC) including a child and maternal health services, non-communicable diseases, and also diagnostic services, and free essential drugs.
- **Primary Health Centre (PHC):** Under the National Health Mission (NHM), Primary Health Centre (PHC) are established to cover a population of 30,000 in rural areas and 20,000 in hilly, tribal and desert areas. PHCs are established to cover defined population.
- **Janani Shishu Suraksha Karyakaram (JSSK):** The scheme is to benefit pregnant women and infant who access Government health facilities for their delivery and post-delivery care.
- **Saksham Anganwadi and Poshan 2.0:** It seeks to address the challenging situation of malnutrition among children up to the age of 6 years, adolescent girls (14-18 years) and pregnant and lactating women. The scheme is open to all eligible beneficiaries and the only pre-condition is that the beneficiary must be registered at the nearest Anganwadi centre with Aadhaar identification.

GLOBAL MICROSOFT OUTAGE

Context

A recent global outage, **Blue Screen of Death (BSOD)**, severely impacted computer systems worldwide, disrupting operations in critical sectors such as aviation, banking, stock exchanges, payment systems, and emergency services. The root cause of this disruption was attributed to a technical issue with CrowdStrike Falcon, a cybersecurity platform

that provides security solutions for **Microsoft Windows devices**.

Blue Screen of Death (BSOD)

- The Blue Screen of Death (BSOD) is a **critical error screen** that appears on **Windows operating systems** when a severe issue causes the system to crash. It forces the computer to restart unexpectedly, potentially resulting in data loss.
- **Cause of the Outage:** The outage stemmed from a configuration change within CrowdStrike’s Azure backend workloads, affecting the connectivity between storage and compute resources. This interruption subsequently caused failures in Microsoft 365 services that rely on these connections.

Vulnerabilities inherent in interconnected digital services

- The Microsoft outage highlights the vulnerabilities inherent in interconnected digital services.
- It underscores the critical need for robust cybersecurity measures and rapid response protocols to mitigate such disruptions in the future, ensuring the reliability and continuity of essential services globally.
- **Causes:** Interconnected digital services rely on complex networks and systems that facilitate seamless communication and data exchange. However, several factors contribute to vulnerabilities:
 - **Dependency on Technology:** Modern services heavily depend on technology infrastructure, software applications, and data sharing protocols.
 - **Cybersecurity Threats:** Increasingly sophisticated cyber threats such as malware, phishing, and ransomware exploit vulnerabilities in interconnected systems.
 - **Human Error:** Misconfigurations, lack of cybersecurity awareness, and unintentional actions by users can inadvertently expose vulnerabilities.
 - **Third-Party Dependencies:** Integration with third-party services and APIs introduces additional points of vulnerability if not properly secured.

Impacts:

- **Disruptions and Downtime:** Cyberattacks or technical failures can lead to widespread disruptions, causing downtime in critical services like banking, healthcare, and transportation.
- **Data Breaches:** Vulnerabilities can result in unauthorized access to sensitive data, leading to breaches that compromise privacy and trust.
- **Financial Losses:** Businesses may incur significant financial losses due to operational disruptions, legal liabilities, and recovery costs associated with cyber incidents.
- **Reputational Damage:** Public perception and trust in organizations can suffer following a cyber incident, affecting customer loyalty and investor confidence.

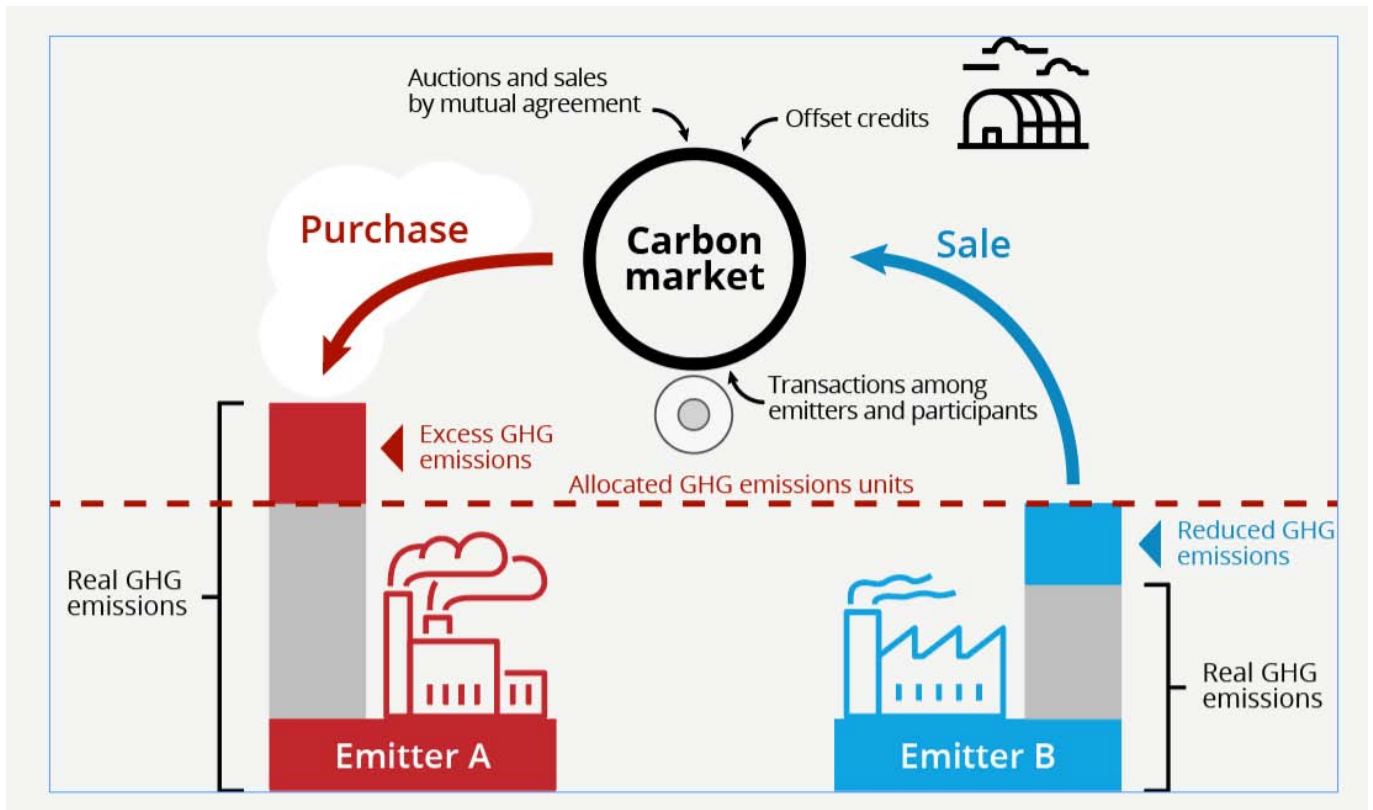


FIGURE: 02

- ▶ **Regulatory Compliance Issues:** Non-compliance with data protection regulations and cybersecurity standards can result in legal penalties and regulatory scrutiny.
- Article 6 of the Paris Agreement provides for the use of international carbon markets by countries to fulfil their **Nationally determined contributions (NDCs)**.
- These markets create incentives to reduce emissions or improve energy efficiency.



FACT BOX

About CrowdStrike

- CrowdStrike is a cybersecurity company known for its Falcon platform, which offers comprehensive security solutions to both individual users and businesses.
 - ▶ Falcon employs a **unified threat interface** to detect and prevent cybersecurity threats across endpoints, workloads, and identity systems.

INDIA-JAPAN COLLABORATION FOR CARBON TRADING

Context

India and Japan are exploring a **Joint Crediting Mechanism (JCM)** under the **Paris Agreement** to enhance collaboration in **Carbon Trading**.

What is Carbon Trading?

- Carbon trading is the process of buying and selling permits and credits to emit carbon dioxide.

Types of Carbon Markets:

Voluntary Markets	Compliance Markets
<ul style="list-style-type: none"> ◦ Participants: Corporations, private individuals, and others purchase carbon credits voluntarily to offset emissions. ◦ Verification: Credits are verified by private firms against established standards. ◦ Purpose: Often used for public relations or personal commitment to sustainability. 	<ul style="list-style-type: none"> ◦ Regulation: Governed by national, regional, or international policies, making them official and mandatory. ◦ Mechanism: Operates under a 'cap-and-trade' system where emission allowances are traded. ◦ Examples: Kyoto Protocol, European Union Emissions Trading System (EU ETS), California ETS, Australia ETS, among others. ◦ Recent Development: China launched the world's largest ETS in 2021.

Advantages of Carbon Markets:

- **Promotion of Energy Efficiency:** Incentivizes reduction in energy use and transition to cleaner fuels.
- **Cost-Efficiency:** Companies can choose between investing in emission-reducing technologies or purchasing allowances, based on cost-effectiveness.
- **Innovation:** Encourages innovation and adoption of low-carbon technologies due to regulatory pressure and market incentives.

Challenges to Carbon Markets:

- **Effectiveness Concerns:** Some entities may buy credits without reducing emissions themselves, undermining the actual reduction of greenhouse gases.
- **Quality Issues:** Many credits available may not meet quality standards, lacking additionality (additional emission reductions), verifiability (proper auditing), and permanence (ensuring emission reductions are sustained).
- **Deviating Emission Reduction Efforts:** Purchasing credits might divert attention from genuine efforts to reduce emissions directly.
- **Measurement Difficulty:** It's challenging to accurately quantify emission reductions achieved through offset projects like afforestation or renewable energy initiatives.

availability.

- ▶ **Population Pressure:** Increasing population, food insecurity, and intensive farming contribute to widespread soil degradation through erosion, acidification, and salinization.
- ▶ **Crop residue burning, land misuse, mismanagement, and climate change** further exacerbate soil health.

Why Soil is Essential?

- **Ecosystem Services:** Soil acts as a vital ecosystem service by filtering water, providing habitat for countless organisms, and producing antibiotics crucial for fighting diseases.
- **Food Security:** Soil is essential for healthy food production, supplying nutrients, water, oxygen, and root support necessary for plant growth and development.
- **Biodiversity:** Soils harbor beneficial microbes crucial for biodiversity and ecosystem health.
- **Climate Change Mitigation:** Soil plays a critical role in carbon sequestration, storing an estimated 2,500 gigatons of carbon and helping combat climate change.

Methods to Save Soil:

- **Organic Practices:** Use organic fertilizers, recycle biomass, grow green manure crops, and practice mulching to replenish soil nutrients.
 - ▶ **Neem-coated urea:** India has introduced 100% Neem Coating on all subsidized agricultural grade urea. Neem coating works as nitrification resistant. It propagates slowly and ensures availability of nitrogen as per crop requirement which results in growth of crop production.
- **Crop Diversity:** Employ practices like inter-cropping, mixed cropping, and crop rotation to enhance soil fertility and nutrient replenishment.
- **Agroforestry:** Integrate tree and plant growth with crops to improve soil health and sustainability.
- **Permaculture:** Adopt sustainable farming methods that respect natural systems and maximize ecosystem benefits.
- **Biofertilizers:** Use microbial-based fertilizers to enhance soil fertility and reduce dependence on chemical inputs.
- **Other sustainable practices:** Adopting sustainable practices like **vermicompost, green manure, and biopesticides** can enhance soil fertility and promote long-term crop productivity without relying on chemical inputs.

CHEMICAL FERTILIZERS KILLING SOIL

Context:

Farmers in Kenya and other African countries blame recent widespread use of acidifying fertilizers for severely degrading soil fertility. Once fertile lands are now nearly barren due to these practices.

- Africa holds 65% of the world's uncultivated arable land, yet spends approximately \$60 billion annually on food imports. This amount is projected to increase to \$110 billion by 2025 due to rising demand and changing consumption patterns.

How chemical fertilizers kills soil?

- Overuse of chemical fertilizers contributes to **soil acidification, soil crust formation, reduced organic matter, and decreased beneficial species**. This affects plant growth, alters soil pH, promotes pests, and can release greenhouse gases.
- Soil acidity leads to land degradation by reducing nutrient availability, weakening soil structure, and increasing susceptibility to erosion.

Other responsible factors:

- ▶ **Farming Practices:** Aggressive tilling disrupts soil structure and reduces beneficial bacteria.
- ▶ **Chemical Agriculture:** Pesticides and fertilizers can disrupt soil microbiota, hindering nutrient

Soil Erosion in India

- A recent study has revealed a worrying trend for India's soil health. Nearly 30 per cent of the country's landmass is experiencing "minor" soil erosion, while a critical 3 per cent faces "catastrophic" topsoil loss.
- The biggest hotspot for soil erosion in the country is the **Brahmaputra Valley in Assam**.
- The **north-eastern state Assam** lost close to 300 square kilometres or 31 per cent of its surface soil to "catastrophic" erosion.
- Apart from the Brahmaputra Valley, the **lower reaches of the Himalayas** are characterised by moraine or loose soil and highly unstable slopes.

Government Interventions

- Pradhan Mantri Fasal Bima Yojana (PMFBY)
- Soil Health Card Scheme
- Soil Health Management Scheme
- Pradhan Mantri Krishi Sinchayee Yojna (PKSY)
- Per Drop More Crop
- India is signatory to achieving Land Degradation Neutrality by 2030.

PYQ

Q: Why does the Government of India promote the use of 'Neem-coated Urea' in agriculture? (2016)

- Release of Neem oil in the soil increases nitrogen fixation by the soil microorganisms.
- Neem coating slows down the rate of dissolution of urea in the soil.
- Nitrous oxide, which is a greenhouse gas, is not at all released into atmosphere by crop fields.
- It is a combination of a weedicide and a fertilizer for particular crops.

Solution: (b)

ALLEGED FORGERY BY IAS OFFICER

Context:

In a significant development concerning the integrity of civil services examinations, the Union Public Service Commission (UPSC) has initiated legal action against **Puja Manorama Dilip Khedkar**, a probationary IAS officer, for **alleged forgery and misrepresentation** in obtaining disability certificates. The case has brought to light crucial **ethical dilemmas and challenges** within the framework of **public service and governance**.

Ethical Concerns Raised

- **Integrity and Honesty in Public Service:** The cornerstone of public service is integrity. Civil servants are expected to uphold the highest standards of ethical conduct, including honesty in all professional dealings. The alleged actions of Ms. Khedkar, if proven true, challenge this fundamental principle and undermine public trust in the selection process.
- **Fairness and Transparency:** The Civil Services Examination is designed to be fair and transparent, providing equal opportunities to all aspirants. Any attempt to manipulate the process through fraudulent means not only disadvantages honest candidates but also compromises the credibility of the entire system.
- **Accountability and Responsibility:** As future administrators entrusted with significant responsibilities, probationary IAS officers are expected to demonstrate accountability for their actions. They are role models for ethical behavior and are accountable to the public they serve, their colleagues, and the institutions they represent.
- **Legal and Regulatory Compliance:** Upholding the rule of law is crucial in public administration. The filing of an FIR by the UPSC against Ms. Khedkar underscores the importance of adherence to legal and regulatory frameworks. It serves as a reminder that unethical conduct will be met with stringent legal consequences.

Implications for Governance and Policy

The case highlights the broader implications for governance and policy formulation:

- **Reform in Examination Protocols:** There may be a need for stricter verification protocols to prevent such instances of fraud in future examinations. Ensuring the authenticity of disability certificates and other supporting documents should be a priority.
- **Enhanced Ethical Training:** Training modules focusing on ethics and integrity could be integrated into the curriculum for civil servants. This would reinforce the importance of ethical behavior and equip them with the skills to navigate ethical dilemmas effectively.
- **Public Trust and Confidence:** Upholding the integrity of the civil services examination is essential for maintaining public trust in the credibility of the bureaucracy. Transparent investigations and swift actions against misconduct are crucial in this regard.

The case of Puja Khedkar serves as a critical examination of ethical standards in public service. It underscores the imperative for civil servants to uphold integrity, transparency, and accountability at all times. As aspirants prepare for the Civil Services Examination, understanding these ethical dimensions is not just a requirement for passing exams but a commitment to the ideals of public service.

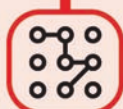


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SECTION - B

QUICK BYTES

KOYA AND KONDA
REDDI TRIBES

CONTEXT

Above 170 villages have been affected by the Godavari flood in the four mandals of Chintoor Agency in the Alluri Sitharama Raju (ASR) district in Andhra Pradesh mostly inhabited by Koya and Konda Reddi tribes.

About:

▣ Koya Tribes:



- Koya tribe is a tribe found in the Papikonda hill range, near the Godavari and Sabari rivers in Andhra Pradesh.
- They are also found in Telangana where they are the second largest tribal community.

- The Koyas commonly refer to themselves as Dorala Sattam (Lords group) and Putta Dora (Original lords).
- **Language:** Telugu (Koyi)
- Many Koya deities are female, the most important being the "mother earth".
- They also worship a number of Hindu gods Lord Bhima, Korra Rajulu, Mamili, and Potaraju.

▣ Konda Reddi Tribes:



- Konda Reddi is a Particularly Vulnerable Tribal Group inhabiting the banks of the river Godavari and also in the hilly forest tracts of Godavari and Khammam districts of Andhra Pradesh.
- Their mother tongue is Telugu in its purest and chaste form, with a unique accent.
- **Subdivisions:** The Konda Reddy tribe is divided into exogamous septs for regulating matrimonial relations.

- ▶ Language: Like other Telugu-speaking people, their surnames are prefixed to individual names.
- ▶ Religion:
 - ◆ The primary religion practiced by the Konda Reddi is Folk Hinduism, characterized by local traditions and cults of local deities worshiped at the community level.

- The allocations reflect strategic priorities and diplomatic efforts to maintain influence and cooperation in India's extended neighbourhood and beyond.

NEIGHBOURHOOD FIRST

CONTEXT

The **Union Budget 2024-25** has allocated significant funds under the **Ministry of External Affairs (MEA)** for aid to foreign countries, particularly focusing on India's neighbourhood and strategic partners. This allocation reflects India's continued emphasis on bolstering diplomatic ties and supporting developmental projects abroad.

Allocation Breakdown:

▣ Neighbourhood Focus:

- ▶ **Bhutan** emerges as the top recipient with an allocation of Rs 2,068.56 crore, slightly lower than the previous year's Rs 2,400 crore.
- ▶ **Nepal** receives Rs 700 crore, marking a notable increase from Rs 550 crore in the previous year's budget.
 - ◆ **Maldives** retains its allocation at Rs 400 crore, consistent with the previous year despite diplomatic tensions.
 - ◆ **Sri Lanka** sees an increase to Rs 245 crore from Rs 150 crore, aimed at supporting infrastructure and development projects.
 - ◆ **Seychelles** receives Rs 40 crore, up from Rs 10 crore previously allocated.

▣ Other Regional Allocations:

- ▶ **Afghanistan** maintains its allocation at Rs 200 crore.
- ▶ **The Chabahar port** project in Iran continues to receive Rs 100 crore, unchanged for the past three years.

▣ Overall MEA Budget:

- ▶ The total Budget estimate for MEA for 2024-25 is Rs 22,155 crore, a significant increase from Rs 18,050 crore in the previous year.
- ▶ However, it falls short of the revised estimate of Rs 29,121 crore for the same fiscal, indicating adjustments in financial planning.

Purpose and Impact:

- India's aid and assistance programmes aim to strengthen bilateral and multilateral relations, enhance regional stability, and support infrastructure development in recipient countries.



FACT BOX

India's Neighbourhood First Policy

- The policy was conceived in 2008.
- The country's Neighbourhood First Policy determines its engagement with neighbouring nations, including **Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.**
- The policy prioritises **improving physical, digital, and people-to-people connectivity within the region**, while also **boosting trade and commerce.**

Major initiatives

- **SAARC (South Asian Association for Regional Cooperation)**
- **BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation)**

Infrastructure projects

- **BBIN Initiative (Bangladesh, Bhutan, India, Nepal):** Improving road and rail connectivity.
- **Kaladan Multi-Modal Transit Transport Project:** Connecting India with Myanmar and further with Southeast Asia.
- **Chabahar Port:** Developing a strategic port in Iran to improve connectivity with Afghanistan and Central Asia.

PM-JANMAN SCHEME

CONTEXT

The Union Cabinet has approved the ambitious **Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN) scheme**, with a whopping budget of Rs 24,104 crore. The government also announced the **Pradhan Mantri Janjati Unnat Gram Abhiyan scheme** for improving the conditions of tribal communities.

About PM-JANMAN

- PM-JANMAN was announced on the birth anniversary of tribal leader **Birsa Munda**, celebrated as **Janjatiya Gaurav Diwas (November 15)**, in Jharkhand.
- This initiative is aimed at addressing the needs of **Particularly Vulnerable Tribal Groups (PVTGs)** across India, making it the **largest Central scheme** targeted at tribal communities in terms of financial outlay.
- The scheme will focus on various essential facilities including:
 - ▶ **Housing:** Approximately 4.9 lakh pucca houses will be constructed at a cost of Rs 2.39 lakh per house.

- ▶ **Education:** Establishment of 500 hostels costing Rs 2.75 crore per unit, and setting up 2,500 Anganwadi centres.
- ◆ **Connectivity:** Installation of mobile towers in 3,000 villages and development of 8,000 km of road connectivity.
- ◆ **Health and Nutrition:** Ensuring access to healthcare through mobile medical units and wellness centres set up by the Ministry of Ayush.
- ◆ **Livelihood Opportunities:** Skill and vocational training initiatives by the Ministry of Skill Development and Entrepreneurship to promote sustainable livelihoods.
- **Financial Allocation and Implementation:** The scheme is funded with Rs 15,336 crore from the Centre and Rs 8,768 crore from the states. It involves coordination among nine ministries to ensure effective implementation of various interventions aimed at uplifting PVTGs.

About Pradhan Mantri Janjatiya Unnat Gram Abhiyan

- **Pradhan Mantri Janjatiya Unnat Gram Abhiyan** has been announced for 63,000 tribal villages, benefitting 5 crore tribals.
- The programme aims at achieving saturation coverage for tribal families in tribal-majority villages and aspirational districts.



FACT BOX

PVTGs in India

- There are 75 tribal communities across 18 states and the Union Territory of Andaman and Nicobar Islands identified as PVTGs, characterized by **backward social, economic, and educational indicators**.
- As per the 2011 Census, India has a **total Scheduled Tribe population of 10.45 crore**.
- According to data from the **Ministry of Tribal Affairs** and the 2011 Census, Odisha has the largest population of PVTGs at 8.66 lakh, followed by Madhya Pradesh at 6.09 lakh and Andhra Pradesh (which then included Telangana) at 5.39 lakh.
- The total PVTG population is more than 40 lakh.

Government's welfare outreach to ST communities

- **Eklavya Model Residential Schools (EMRS)**, established to provide quality education to ST students in residential schools, were allocated Rs 6,399 crore
- **The post-matric scholarship for ST students** also saw a rise in its allocation.

- **PM DAKSH scheme**, which is aimed at skilling people from the SC and ST communities, saw its allocation increase from Rs 92.47 crore to Rs 130 crore.
- **National Action for Mechanised Sanitation Ecosystem (NAMASTE) scheme**, aimed at eliminating manual scavenging by replacing it with mechanised cleaning of sewers, was allocated Rs 116.94 crore
- **Other schemes:**
 - ▶ PM Janjatiya Vikas Mission (PMJVM)
 - ▶ National Overseas Scholarship Scheme for SCs

REVAMPED PMAY 2.0

CONTEXT

The Indian government has announced a significant boost to the housing sector through a revamped version of the **Pradhan Mantri Awas Yojana (PMAY)**. The fourth phase of **Pradhan Mantri Gram Sadak Yojana (PMGSY)** to **connect 25,000 habitations with all-weather roads is announced.**

About PMAY 2.0

- This initiative aims to address housing needs for poor and middle-class families in urban areas, with a massive budgetary allocation of Rs 10 lakh crore.
- Under PMAY 2.0, the government plans to benefit one crore families by providing affordable housing loans and interest subsidies.
- Additionally, provisions are being made to include an additional three crore houses under the scheme across rural and urban areas.
- The recent budget has allocated Rs 82,576.57 crore to the Ministry of Housing and Urban Affairs for 2024-2025, marking an 8.03% increase from the previous year.

About Pradhan Mantri Awas Yojana (PMAY)

- **Launched in:** 2015
- PMAY focuses on providing *pucca* houses with essential amenities to eligible beneficiaries in urban areas.
- The scheme has been instrumental in improving housing conditions and ensuring dignified living for millions.

Pradhan Mantri Gram Sadak Yojana (PMGSY)

- Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in 2000 to provide connectivity to unconnected habitations as part of a poverty reduction strategy.

EMPLOYMENT LINKED INCENTIVE

CONTEXT

The government will implement three schemes for 'Employment Linked Incentive', as part of the Prime Minister's package. These will be based on enrolment in the EPFO, and focus on recognition of first-time employees, and support to employees and employers.

About the Scheme

The government will implement following 3 schemes for 'Employment Linked Incentive':

- **Scheme A: First Timers:** This scheme will provide **one-month wage** to all persons newly entering the workforce in all formal sectors. The direct benefit transfer of one-month salary in 3 instalments to first-time employees, as registered in the EPFO, will be up to Rs. 15,000. The eligibility limit will be a salary of Rs. 1 lakh per month. The scheme is expected to benefit 210 lakh youth.
- **Scheme B: Job Creation in manufacturing:** This scheme will incentivize additional employment in the manufacturing sector, linked to the employment of first-time employees.
- **Scheme C: Support to employers:** This employer-focussed scheme will cover additional employment in all sectors. All additional employment within a salary of Rs. 1 lakh per month will be counted.

ENEMY PROPERTIES

CONTEXT

Recently, the Union government has initiated e-auctions for many of the 12,611 identified enemy properties across India. This move aims to effectively utilize these assets while adhering to the legal framework provided by the **Enemy Property Act**.

What are Enemy Properties?

- Enemy properties refer to any assets—**immovable property, shares, debentures, etc.**—that belong to, are held by, or managed on behalf of an **enemy, enemy subject, or enemy firm**.
 - ▶ The term "enemy" here denotes countries (Pakistan, China) that have engaged in aggression or declared war against India.
- **Enemy Property Act, 1968:** The Act was enacted following the Indo-China and Indo-Pak conflicts of 1962 and 1965. It stipulated that descendants of individuals who migrated to Pakistan or China would forfeit any rights of succession to their ancestors' properties in India.
 - ▶ **Purpose:** The primary objective of the Act is to regulate and take control of properties owned by individuals who moved to Pakistan or China after the wars.

- ▶ **Key Amendments of 2017:** Over time, the Act has undergone several amendments, the most recent being the Enemy Property (Amendment and Validation) Act in 2017.
 - ◆ The 2017 amendment expanded the definition of "enemy subject" and "enemy firm" to include legal heirs and successors of enemies, irrespective of their nationality.
 - ◆ It also established that once a property is declared as enemy property, it retains that classification.

PRADHAN MANTRI SCHOOLS FOR RISING INDIA (PM-SHRI) SCHEME

CONTEXT

Following the refusal of three states to participate in the **PM-SHRI scheme**, the Union government has decided to halt funds allocated to these states under the **Samagra Shiksha Abhiyan (SSA)**. The SSA is a flagship program that supports efforts to improve quality and inclusive education across the country.

About PM-SHRI Scheme

- The **Pradhan Mantri Schools for Rising India (PM-SHRI) scheme** is a comprehensive initiative aimed at enhancing the quality of education in government schools across India.
- Its goal is to transform these schools into model institutions that demonstrate the implementation of the **National Education Policy (NEP) 2020**.
- The scheme targets upgrading over 14,500 government schools to serve as exemplars of 21st-century educational practices.

Scheme Details

- ▶ **Scope:** The PM-SHRI scheme covers centrally operated schools, state government-run schools, Kendriya Vidyalayas (KVs), and Navodaya Vidyalayas (NVs).
- ▶ **Financial Allocation:** With a budget exceeding Rs 27,000 crore for the next five years, the scheme is funded with the Centre bearing 60% of the financial burden, while states contribute the remaining 40%.
- ▶ **Objectives:** It aims to equip students with 21st-century skills, making them "future-ready" through high-quality education.



FACT BOX

About Samagra Shiksha Abhiyan (SSA)

- Samagra Shiksha Abhiyan (SSA) is an **Integrated Centrally Sponsored Scheme** for School Education.

- It is an overarching scheme for the school education sector extending from pre-school to class XII and aims to ensure inclusive and equitable quality education at all levels of school education.
- The scheme treats school education as a continuum and is in accordance with **Sustainable Development Goal for Education (SDG-4)**.

COAL INDIA BAGS FIRST CRITICAL MINERAL ASSET

CONTEXT

Recently, the State-owned Coal India has mentioned that it is going to bag the **first critical mineral asset**, a graphite block, in Madhya Pradesh.

About the move:

- Green energy transitions:** Owning a graphite asset will give Coal India an advantage in powering green energy transition momentum to an extent.
- Towards self-reliance:** With the electric vehicle market and energy storage systems fast gaining traction, where lithium-ion cells are used, graphite has a big market.

India's import dependence on Critical Minerals:

- The country imports about 69 percent of its graphite needs - natural, synthetic, and end-use products.
- Graphite has its utility as an **anode material in lithium-ion battery** manufacturing due to its relatively low cost and energy density.

The Coal India Limited (CIL):

- Coal India Limited (CIL) is an Indian central public sector undertaking under the ownership of the Ministry of Coal, Government of India.
- It is headquartered in Kolkata.
- It is the largest government-owned-coal-producer in the world.

AGRICULTURE BUDGET 2024

CONTEXT

In the Union Budget for the fiscal year 2024-25, Finance Minister Nirmala Sitharaman has prioritized enhancing productivity and resilience in agriculture. This sectoral focus comes amidst ongoing challenges in the agriculture domain, including subsidy reductions which have drawn criticism from farmer organizations.

Key Highlights:

- Budget Allocation for Agriculture:** Rs 1.52 lakh crore has been allocated for farming and allied sectors, reflecting a significant commitment to bolster agricultural infrastructure and productivity.
- Focus on Research and Innovation:** A comprehensive review of the agriculture research setup is planned to emphasize productivity enhancement and the development of climate-resilient crop varieties.
- Support for Farmer-Producer Organizations (FPOs) and Cooperatives:** Promotion of FPOs, cooperatives, and startups in vegetable supply chains, focusing on collection, storage, and marketing to empower farmers economically.
- Digital Public Infrastructure and Agricultural Reforms:** Digital Public Infrastructure is to be implemented for Agriculture, including digital crop surveys in 400 districts to enhance agricultural data accuracy and planning.
 - Financial support for setting up **Nucleus Breeding Centres** for shrimp broodstocks through NABARD to boost aquaculture.
- For farmers, higher **Minimum Support Prices** has been announced for all major crops delivering on the promise for at least a 50% margin over cost.
- A digital crop survey** will be conducted, covering 6 crore farmers across 400 districts beginning in the ongoing Khareef season.
- Natural Farming:** 1 crore farmers will be initiated into natural farming over the next few years. The government will also look to strengthen production, storage, and marketing for self-reliance in pulses and oilseeds.
- 6 crore farmers will be brought into the farm and land registry and Kisan credit cards will be provided.
- New Variety:** New 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops will be released for cultivation by farmers.
- Missions for pulses and oilseeds:** A strategy is being put in place to achieve 'atmanirbharta' for oil seeds such as mustard, groundnut, sesame, soybean, and sunflower.

(see figure 3 on next page)

CHANGES TO THE INCOME TAX REGIME

CONTEXT

Finance Minister Nirmala Sitharaman has announced significant changes to the income tax regime for the financial year 2024-25, aimed at providing additional benefits to taxpayers opting for the new tax structure.

Priorities for Viksit Bharat

Productivity and resilience in Agriculture



Transforming Agriculture Research

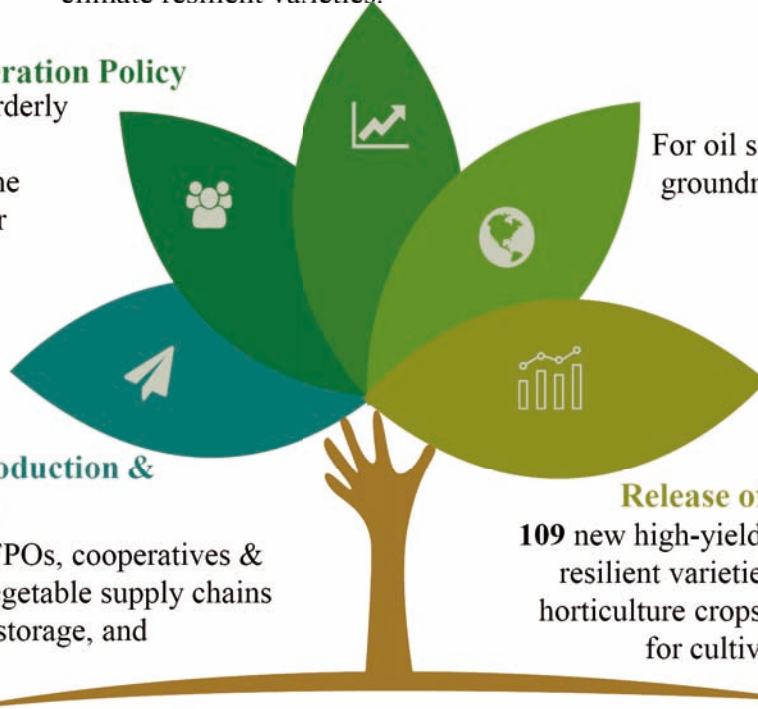
Comprehensive review of the agriculture research setup to bring focus on raising productivity and developing climate resilient varieties.

National Cooperation Policy

For systematic, orderly and all-round development of the cooperative sector

Atmanirbharta

For oil seeds such as mustard, groundnut, sesame, soyabean and sunflower



Vegetable production & supply chain

Promotion of FPOs, cooperatives & start-ups for vegetable supply chains for collection, storage, and marketing.

Release of new varieties

109 new high-yielding and climate-resilient varieties of 32 field and horticulture crops will be released for cultivation by farmers

Natural Farming

- 1 crore farmers across the country will be initiated into natural farming, supported by certification and branding in next 2 years.
- 10,000 need-based bio-input resource centres to be established.

Shrimp Production & Export

- Financing for Shrimp farming, processing and export will be facilitated through NABARD.

Digital Public Infrastructure (DPI)

- DPI for coverage of farmers and their lands in 3 years.
- Digital crop survey in 400 districts
- Issuance of *Jan Samarth* based Kisan Credit Cards

FIGURE: 03

Key Changes in Tax Slabs:

Revised Tax Slabs:

- ▶ Incomes in the Rs 3-6 lakh slab previously taxed at 5% will now apply to incomes in the Rs 3-7 lakh slab.
- ▶ The 10% tax rate for incomes in the Rs 6-9 lakh slab has been revised to apply to incomes of Rs 7-10 lakh.
- ▶ The Rs 9 lakh to Rs 12 lakh slab now falls under Rs 10 lakh to Rs 12 lakh with a tax rate of 15%.

TAX SLABS		
OLD REGIME	0 TO 3 LAKH	NIL
	3 LAKH - 6 LAKH	5%
	6 LAKH - 9 LAKH	10%
	9 LAKH - 12 LAKH	15%
	12 LAKH-15 LAKH	20%
	15 LAKH+	30%
NEW REGIME	0 TO 3 LAKH	NIL
	3 LAKH - 7 LAKH	5%
	7 LAKH - 10 LAKH	10%
	10 LAKH - 12 LAKH	15%
	12 LAKH-15 LAKH	20%
	15 LAKH +	30%

Standard Deduction Increase:

- ▶ The standard deduction under Section 115BAC for employees in the new tax regime has been raised from Rs 50,000 to Rs 75,000.
- ▶ Employees opting for the old regime will continue to receive the standard deduction of Rs 50,000.

Deduction Limits in Employer NPS Raised:

- ▶ The deduction for employer contributions to the National Pension System (NPS) has been raised from 10% to 14% of the salary.
- ▶ This enhancement applies to both tax regimes, encouraging long-term financial security for employees.
- **Introduction of NPS Vatsalya:** Budget 2024 introduced NPS Vatsalya, allowing parents to open NPS accounts in the name of minor children, convertible into regular NPS accounts upon adulthood.
- **Review of Income-Tax Act:** The Income-Tax Act, 1961, will undergo a comprehensive review to simplify and clarify provisions, potentially reducing confusion and litigation.
- **Rebate under Section 87A:** The rebate limit under Section 87A remains at Rs 25,000, with implications for taxpayers under the new tax regime.



FACT BOX

Income tax slabs

- In India, income tax is applied based on a slab system where different rates are assigned to different income ranges.
- This progressive tax system ensures that individuals with higher incomes pay higher tax rates. These slabs are periodically revised, typically during each Budget session.

Standard deduction

- Under Indian taxation laws, the standard deduction allows salaried employees and pensioners to claim a fixed amount from their taxable income without needing to submit any investment proofs or disclosures.

ABOLITION OF ANGEL TAX

CONTEXT

The Indian government has proposed the abolition of the "angel tax" across all classes of investors, aiming to bolster the country's startup ecosystem, foster entrepreneurial spirit, and support innovation.

What is Angel Tax?

- Angel tax refers to the income tax that the government imposes on funding raised by unlisted companies, or startups, if their valuation exceeds the company's fair market value.
- Introduced in 2012, it falls under **Section 56 (II) (viib) of the Income Tax Act**.
- This provision categorizes investments that startups receive from external investors as "income from other sources," subjecting them to a high tax rate of 30%.

Impact of Angel Tax on Startups:

- **Financial Strain on Startups:** Startups, often operating with limited funds, face additional financial strain due to Angel Tax. The imposed tax burden adds to their operational costs, making it challenging to allocate resources effectively.
- **Valuation Disputes:** Taxing investments above the "fair market value" of shares can lead to disputes regarding startup valuations with tax authorities. This discrepancy can complicate financial planning and deter potential investors.
- **Deterrent to Investment:** The imposition of Angel Tax creates an extra liability for startups, potentially deterring investors from funding these ventures. This reduction in investment hampers the growth and innovation that the government aims to foster in the startup sector.

More on News: Capital Gain Tax

- In the Budget 2024, the government reduced the **long-term capital gains (LTCG) tax rate** on the sale of property from 20% to 12.5%.
- Any profit or gain that arises from the sale of a ‘**capital asset**’ is known as ‘**income from capital gains**’.
- Such capital gains are taxable in the year in which the transfer of the capital asset takes place. This is called **capital gains tax**.
- **Types:** There are two types of Capital Gains:
 - ▶ short-term capital gains(STCG)
 - ▶ long-term capital gains(LTCG)
- **Example of Capital Asset:** Land, building, house property, vehicles, patents, trademarks, leasehold rights, machinery, and jewellery

ENERGY TRANSITION

CONTEXT

In her budget speech, Finance Minister Nirmala Sitharaman outlined significant policy measures aimed at accelerating India’s energy transition away from fossil fuels. These initiatives are crucial for reducing carbon emissions and promoting sustainable development.

Key-highlights

- **Taxonomy for Climate Finance:** The government will introduce a taxonomy for **climate finance**. This framework will enable companies to secure capital at favorable rates for green projects like renewable energy, battery storage, and emerging sustainable technologies.
 - ▶ The taxonomy is expected to boost the market for **green bonds**, facilitating investments in environmentally friendly sectors.
 - ▶ Taxonomies help provide a framework that classifies economic activities based on their environmental sustainability. This helps streamline climate finance towards sustainable businesses. The **European Union, South Africa, and Canada** have their own climate finance taxonomy.
- **Transition of Hard-to-Abate Industries**
 - ▶ Hard-to-abate industries will move from energy efficiency targets to emission-based goals. They will shift from the current ‘**Perform, Achieve and Trade**’ regulations to carbon market-based regulations.
 - ▶ This shift aims to drive investments in sustainable technologies and establish a framework for carbon market development, crucial for decarbonization efforts.
- **Promotion of Pumped Hydro Storage:** To address the intermittency of renewable energy sources like solar and wind, the government plans to promote pumped hydro

- storage projects. This technology helps store renewable energy for use during periods when solar and wind energy are not available.
- **Development of Small Nuclear Reactors:** The government will collaborate with the private sector to set up small nuclear reactors. Research and development efforts will focus on small modular reactors and other advanced technologies for nuclear energy.
- **Renewable Energy Targets:** India aims to add 50 GW of renewable energy capacity annually from FY24 to FY28. By 2030, the country targets achieving 500 GW of installed electricity capacity from non-fossil fuel sources, including renewable energy and nuclear power.
- **Development of Pathways:** The government is advancing energy transition through initiatives such as advanced ultra super critical thermal power plants and modular nuclear reactors. Fiscal support is also extended to technologies like pumped storage and rooftop solar, reflecting a comprehensive approach to diversifying the energy mix.
- **Solar Energy Focus:** In the solar sector, the government is expanding the list of exempted capital goods used in manufacturing solar cells and panels within the country.

- ▶ **Customs duty exemptions** on solar glass and tinned copper interconnects for solar cells and modules imported into India are being removed.
- ▶ Despite short-term cost implications for domestic power producers, these measures aim to strengthen the domestic supply chain to support India’s ambitious goal of achieving 50 GW of renewable energy annually.

- **PM Surya Ghar Muft Bijli Yojana:** Finance Minister Nirmala Sitharaman highlighted the positive response to the PM Surya Ghar Muft Bijli Yojana, aimed at promoting rooftop solar panel installations with subsidies for up to 1 crore households. The scheme has garnered over 1.28 crore registrations and 14 lakh applications, underscoring its role in democratizing access to clean energy and reinforcing India’s commitment to an inclusive energy future.

BANNI GRASSLANDS

CONTEXT

The **Central Zoo Authority (CZA)** has approved a cheetah conservation breeding centre in **Gujarat’s Banni grasslands**, allowing for the **reintroduction of the big cat** to the state after many years.

About Banni Grasslands:

- **Location:** Banni grasslands, along with **Kachchh Desert Sanctuary**, cover about 5000 square kilometers in Gujarat’s Kachchh district in the northwest.
- **Geography:** It lies south of the Rann of Kachchh mud-flats and some parts can get flooded by seawater during the rainy season.
- **Surroundings:** Banni is bordered by Narayan Sarovar Wildlife Sanctuary on the west and Kachchh Wildlife Sanctuary on the east.

- The area is home to 40,000 Maldharis, a pastoral community known for raising high-yielding buffaloes and cows.



FACT BOX

Cheetah (*Acinonyx jubatus*)

- The Cheetah is one of the oldest species among large cats, dating back over five million years to the Miocene era.
- It holds the title of being the **world's fastest land mammal**.
- Currently, the cheetah is listed as **vulnerable** on the **IUCN Red List of threatened species**.
 - ▶ The **Asiatic cheetah**, a subspecies, is critically endangered according to the IUCN Red List, and is believed to survive only in Iran.
- India's last known cheetah died in Chhattisgarh in 1947. Following this, the cheetah was officially declared extinct in India in 1952.
- **Reintroduction:** India brought Cheetah from Namibia and South Africa in 2022 to reintroduce them into Indian habitat.

SAFETY-RELATED WORKS IN RAILWAYS- THE "KAVACH" SYSTEM

CONTEXT

The **Economic Survey 2023-24** indicated limited progress on safety-related works such as the deployment of the automatic train protection system Kavach and overhaul of signaling systems at all stations.

About the Kavach system:

- Kavach, an automatic train protection (ATP) system, developed by the Research Design and Standards Organisation (RDSO) in collaboration with the Indian industry.
- It is a state-of-the-art electronic system with Safety Integrity Level-4 (SIL-4) standards.
- It is meant to protect by preventing trains to pass the signal at Red (which marks danger) and avoid collision.
- It activates the train's braking system automatically if the driver fails to control the train as per speed restrictions.
- In addition, it prevents the collision between two locomotives equipped with functional Kavach systems. The system also relays SoS messages during emergencies.
 - ▶ SoS means, a call or request for help or rescue.

Current deployment:

- It has been deployed on 1,465 route km in the South-Central Railway, the Survey states.
 - ▶ This is just 2.14% of the total railway network of 68,426 route km and 7,349 railway stations.

INDIA'S BALLISTIC MISSILE DEFENCE SYSTEM

CONTEXT

India recently achieved a significant milestone in its defence capabilities with the successful flight-testing of the **second phase of its Ballistic Missile Defence (BMD) System**. This system is designed to protect against hostile missiles with ranges up to 5,000 km.

Phases of India's BMD Programme

- India's BMD programme is structured into two phases. The first phase has been completed, while the second phase, known as **Phase-II AD (Endo-atmospheric missile)**, is currently underway.
- Phase-II aims to validate intercept systems for a new range category, enhancing India's defence capabilities in both endo-atmospheric and low exo-atmospheric regions.
 - ▶ **Exo-atmospheric missiles** are capable of completing missions in the upper-most region of the earth's atmosphere.
 - ▶ **Endo-atmospheric missiles** are the ones that operate within the earth's atmosphere that covers an altitude below 100 km.

Key Features of Phase-II AD Endo-atmospheric Missile

- ▶ Phase-II AD is an indigenous, two-stage, solid-propelled missile system designed for intercepting various types of enemy ballistic missiles within the altitude range of endo-atmospheric to low exo-atmospheric regions.



FACT BOX

About Ballistic Missile Defence (BMD)

- A BMD system is crucial for defending against ballistic missile attacks rather than for offensive purposes.
- It operates by intercepting ballistic missiles in three phases:
 - ▶ terminal phase (during descent through the atmosphere)
 - ▶ mid-course interception (in-flight interception)
 - ▶ lift-off phase (targeting at launch)
- **Indian Ballistic Missile Defence Programme:** Initiated in 2000 after the Kargil War, India's BMD programme aims to develop and deploy a multi-layered defence system against ballistic missile threats.

- - ▶ The programme includes indigenously developed radars and missiles, showcasing India’s capability to defend against missile attacks both inside and outside the earth’s atmosphere.
- **Achievements and Milestones:** India successfully conducted the Prithvi Air Defence Exercise (PADE) in November 2006. During PADE, the Prithvi Air Defence (PAD) interceptor system, an exo-atmospheric interceptor, successfully intercepted a Prithvi-II ballistic missile, demonstrating India’s progress in developing advanced missile defence technologies.

TRANSFER TECHNOLOGY FOR DETECTION OF TUBERCULOSIS (TB)

CONTEXT

The **Indian Council of Medical Research (ICMR)** has initiated efforts to introduce an **affordable, rapid, and user-friendly testing technology** for detecting **tuberculosis (TB)**. This move comes in response to the staggering toll of TB in India, which claims an estimated 480,000 lives annually.

About the Technology

- ICMR has developed a pioneering TB detection system based on **CRISPR Cas technology**.
- This system, considered the world’s most economical for TB testing, utilizes DNA from saliva samples.
- It can identify TB bacteria early and process over 1,500 samples simultaneously in about two hours, making it suitable even for primary health centers in rural areas.
- **Challenges in TB Diagnosis:** India faces challenges in TB diagnosis, with a significant number of cases going unreported or inadequately treated, especially in the private sector.

About Tuberculosis (TB)

- TB is caused by a bacterium known as Mycobacterium tuberculosis, which belongs to a family of around 200 bacteria species called Mycobacteriaceae.
- **Types of TB:** TB primarily affects the lungs (pulmonary TB) in humans. However, it can also affect other organs (extra-pulmonary TB).
- **Historical Context:** TB is an ancient disease, with evidence of its existence dating back to 3000 BC in Egypt.
- **Treatability:** TB is treatable and curable with appropriate medication and management.
- **Transmission:** TB spreads from person to person through the air. When individuals with lung TB cough, sneeze, or spit, they release TB germs into the air, which can be inhaled by others.

- **Treatment:** Current biomedical strategies to reduce new infections include the
 - ▶ **BCG vaccine**, which protects against severe forms of childhood TB
 - ▶ **Tuberculosis preventive treatment (TPT)** which aims to cover other household contacts, clinical-risk groups apart from children younger than five years and household contacts with HIV
 - ▶ **Effective rifamycin-based regimens**

World TB Report 2023

- According to the World TB Report 2023, India recorded an average of 199 new infections in every 100,000 people in 2022.
- An estimated 13% of treated patients and 2.5% of new cases were multi-drug resistant or resistant to the first-line drug rifampicin.
- Nearly 400,000 people die of TB each year in the country.

National & international initiatives:

- National TB Elimination Programme (NTEP)
- National Strategic Plan (NSP) for Tuberculosis Elimination (2017-2025)
- TB Harega Desh Jeetega Campaign
- TB Free India Campaign
- Revised National Tuberculosis Control Programme (RNTCP)
- International Union Against Tuberculosis and Lung Disease (The Union)
- The country aims to accelerate efforts to reduce TB morbidity and mortality, with a target to eliminate TB by 2025.

MONEKYOX OUTBREAK IN CONGO

CONTEXT

The current monkeypox (mpox) outbreak in Congo has resulted in over 27,000 cases and claimed more than 1,100 lives since the start of 2023, primarily affecting children.

About Monkeypox (mpox)

- Monkeypox, caused by the monkeypox virus, is a viral infection that spreads through close contact. It typically causes flu-like symptoms and can lead to pus-filled lesions on the body.
- The virus belongs to the **Orthopoxvirus genus** in the **Poxviridae family**. It is an enveloped double-stranded DNA virus and is related to viruses like **vaccinia, cowpox, and variola (smallpox)**.
- **Transmission:** Monkeypox spreads from person to person through direct contact with infected skin or lesions, including those in the mouth or genital areas.

- The global monkeypox outbreak was declared a **Public Health Emergency of International Concern (PHEIC)** in 2022.
- **Genetic Clades:** There are two main genetic clades of the virus:
 - ▶ **Clade 1:** More severe, with up to 10% mortality rate among those infected.
 - ▶ **Clade 2:** Less severe, with over 99% recovery rate. The 2022 outbreak was caused by Clade 2.
- **Variants:**
 - ▶ The current outbreak in Congo started with an endemic strain known as **Clade I**.
 - ▶ A new variant, **Clade Ib**, has emerged, showing increased spread among children.
 - ▶ **Clade IIb**, another variant, caused an international health emergency in 2022, spreading mainly through sexual contact among men who have sex with men.

KERALA BRACES FOR NIPAH OUTBREAK

CONTEXT

Kerala is on alert following a confirmed case of Nipah virus in a 14-year-old boy from Malappuram district.

About Nipah Virus (NiV)

- Nipah virus is zoonotic, transmitted from animals to humans, often through fruit bats of the Pteropus genus.
- It can also spread through contaminated food or directly between people.
- **Natural Hosts:** Fruit bats, particularly those of the Pteropus genus, serve as the natural hosts for Nipah virus. These bats do not show apparent signs of illness from the virus.
- **Symptoms and Severity:** In humans, NiV can cause a range of illnesses, from asymptomatic infection to acute respiratory problems and fatal encephalitis (brain inflammation).
 - ▶ Case fatality rates vary between 40% to 75%, depending on clinical management.
- **Treatment:** Currently, there are no specific treatments or vaccines available for either humans or animals. Supportive care remains the only option for managing NiV infections.
- WHO lists **Nipah virus as a priority disease** under its Research and Development Blueprint due to its potential for outbreaks.
- **Monoclonal antibodies** from Australia have shown promise in neutralizing NiV and are being stored in Pune's National Institute of Virology for emergency use.

KERALA RELEASES GUIDELINES ON AMOEBIC MENINGOENCEPHALITIS

CONTEXT

The Health Department of Kerala has issued special guidelines for **Amoebic Meningoencephalitis** after three deaths and two infections among children in the state, marking the first such technical release for the disease in India.

About Amoebic Meningoencephalitis

- Amoebic Meningoencephalitis is caused by Naegleria Fowleri, a free-living amoeba found in warm freshwater sources.
- The infection occurs when contaminated water enters the body through the nose and travels to the brain.
- It is a rare disease, infecting approximately one in 26 lakh people who come into contact with contaminated water.
- The disease primarily affects children and young people, mostly in their early to mid-20s, during warmer months.
- **Symptoms** include severe headache, fever, nausea, vomiting, and neck stiffness, appearing within nine days of infection.
- **Diagnosis** involves a PCR test of spinal cord fluid, distinguishing it from bacterial meningitis.
- **Treatment** involves a combination of five drugs effective against amoebas.

Preventive Measures:

- ▶ Avoid diving or jumping into stagnant freshwater.
- ▶ Use nose plugs or pinch the nose shut when in contact with freshwater.
- ▶ Keep the head above water while swimming.
- ▶ Use boiled, filtered, or sterile water for nasal irrigation.
- ▶ Maintain cleanliness and proper chlorination in swimming pools and water bodies.

PC EMULATOR

CONTEXT

Apple recently approved a PC emulator for its iOS App Store, marking a significant shift in its policies towards emulation software. This move allows users to run classic software and games on **iOS, iPadOS, and tvOS devices**.

What is a PC Emulator?

- A PC emulator is software that enables a computer or device to mimic the functionality of another system.
- It allows software designed for one platform to run on another that it was not originally compatible with.
- Emulators are commonly used for testing software across different operating systems, running applications from older systems, and playing games from retro consoles.

Why Did Apple Allow Emulators on the iOS App Store?

- ▶ Previously, Apple had strict guidelines prohibiting emulators on its platform. However, recent updates to the App Store guidelines now permit retro game console emulators, mini games, and HTML5 mini apps.
- ▶ The approval of UTM SE, a computer emulator app, follows Apple’s efforts to address antitrust concerns and accusations of monopolistic practices related to its App Store policies.
- ▶ Allowing emulators could prevent users from resorting to third-party app stores for downloading emulation software in regions like the **European Union**, where Apple has faced regulatory scrutiny.

Legal Status of Emulators

- ▶ Emulators themselves are legal tools used for software testing and development, as they do not infringe on proprietary codes. However, distributing or downloading copyrighted ROMs (Read Only Memory) without ownership rights is illegal. Users must own the software they emulate to comply with copyright laws.
- ▶ In India, for instance, while emulators themselves are not banned, using them to run pirated software or distribute ROMs without proper ownership can lead to legal consequences.

Risks Associated with Emulators

- ▶ Using emulators downloaded from unofficial sources can pose security risks, including malware infections that compromise system security.
- ▶ Emulators, being resource-intensive, may also affect device performance, leading to **CPU strain, overheating, and reduced battery life**. Compatibility issues with ROMs or software can result in **data corruption or system instability**.

ROGUE WAVES

CONTEXT

Rogue waves, which are unusually large and unpredictable compared to surrounding waves, pose significant risks to ships, coastal infrastructure, and human safety. Despite their known dangers, forecasting rogue waves has historically been challenging and lacked effective methods. However, researchers have trained an AI programme to distinguish wave patterns that preceded rogue waves.

Understanding Rogue Waves

- Rogue waves typically occur in oceans, defying **average sea state conditions**.
- These waves can be twice the size of surrounding waves and often result from the convergence of distant swells or compression of ocean currents.
- **Consequences:** The unpredictability of rogue waves has resulted in numerous fatalities and ship sinkings.

Advancements Using AI

- Researchers have developed a breakthrough using artificial intelligence (AI) to predict rogue waves.
- The AI program analyzed and identified specific wave patterns preceding rogue waves, distinguishing them from regular wave patterns recorded during non-rogue wave periods.
- The AI achieved a prediction accuracy of approximately 75% for rogue waves one minute in advance and about 73% five minutes in advance.
- This capability was demonstrated across different buoy locations and depths, indicating potential universal applicability.



FACT BOX

Sea State

- In oceanography, sea state refers to the condition of the surface of a large body of water at a certain location, at a certain point of time.
- The World Meteorological Organization (WMO) sea state code characterises sea state based on wave height on a scale of 0 (no waves) to 9 (waves over 14 m).

GENETICALLY MODIFIED MUSTARD (DMH-11)

CONTEXT

A two-judge Bench of the Supreme Court recently delivered a split verdict on whether to allow the environmental release of GM mustard, highlighting ongoing deliberations and concerns surrounding its adoption and impact in India.

About Genetically Modified Mustard (GM Mustard (DMH-11))

- In 2022, the **Genetic Engineering Appraisal Committee (GEAC)** recommended the environmental release of **genetically-modified (GM) mustard variety DMH-11**.
- This variety, known as **Dhara Mustard Hybrid-11**, has been developed using the **‘barstar-barnase’ system** to make it **herbicide-resistant and improve yields**.

Benefits of DMH-11:

- ▶ DMH-11 has demonstrated the potential to increase yields by about 30% compared to traditional varieties.
- ▶ Existing mustard varieties yield around 1,000-1,200 kilograms per hectare, while global averages reach 2,000-2,200 kilograms per hectare.
- **Mustard Cultivation in India:** Mustard (*Brassica juncea*) is a crucial winter crop in India, cultivated across approximately 6.5-7 million hectares primarily in states like **Rajasthan, Haryana, Punjab, and Madhya Pradesh**.



FACT BOX

What are GM Crops?

- Genetically-modified (GM) crops are plants whose DNA has been altered using genetic engineering techniques to introduce desirable traits that do not naturally occur. These traits can enhance resistance to pests, diseases, or herbicides, and improve crop yields.
- **GM Crops in India:**
 - ▶ India permits the import of GM soybean and canola oil.
 - ▶ *Bacillus thuringiensis* cotton (Bt cotton) is the only GM crop approved for cultivation in India.
 - ▶ For other GM seeds, India had maintained stringent regulations until recent developments.
- Genetic Engineering Appraisal Committee (GEAC)
 - ▶ The Genetic Engineering Appraisal Committee (GEAC) operates under the **Ministry of Environment, Forest and Climate Change** and is responsible for evaluating and permitting the commercial release of GM crops in India.
 - ▶ It is mandated by the **Environment Protection Act 1986**.



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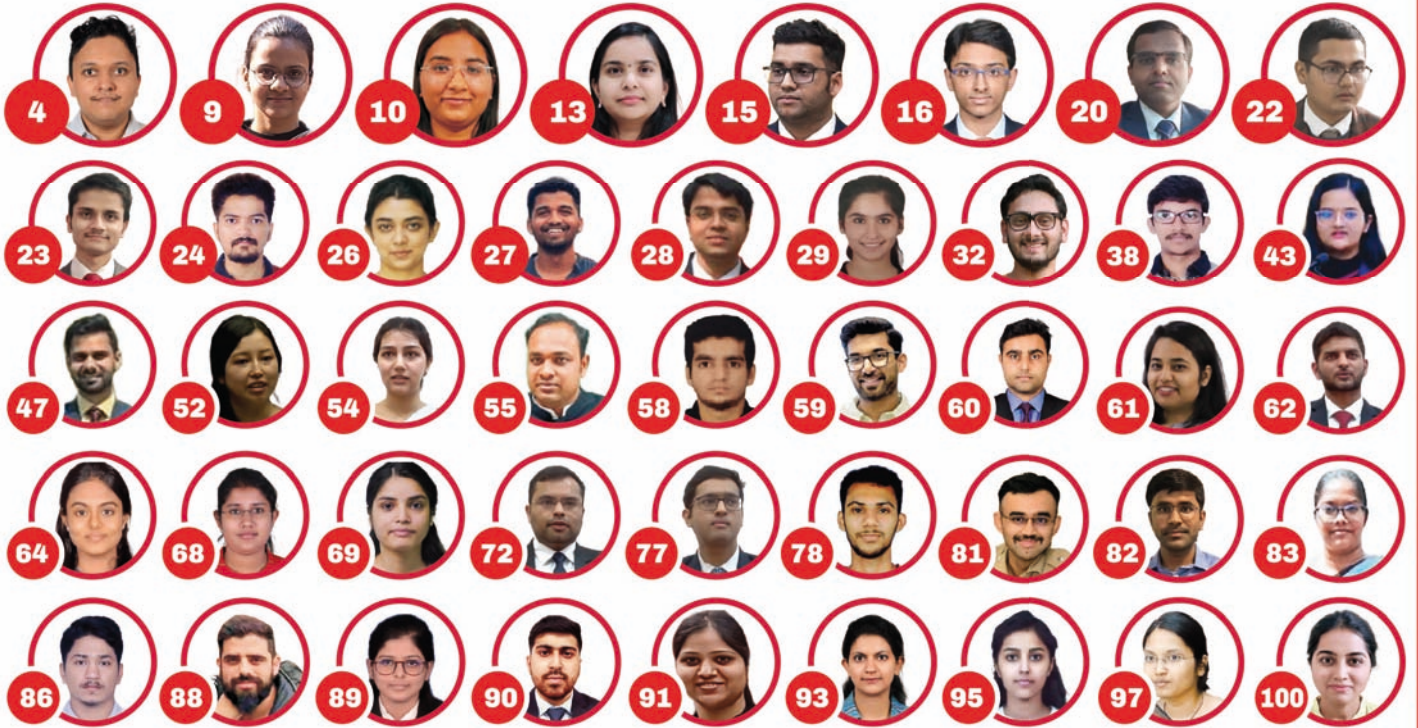
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