



“ We help you reach for the star ”

VIDHVATH IAS KAS ACADEMY
&
STUDY CENTRE

DAILY CURRENT AFFAIRS

FOR UPSC CIVIL SERVICE EXAMINATION

DATE: 29/12/2025 (MONDAY)



 **9972258970 & 9740702455**

**#317/A SKB Arcade, D. Subbaiah Road,
Ramaswamy Circle, Mysuru-570004**



Table of Contents

1. The Great Indian Research Deficit and Vision for Viksit Bharat.....	2
2. India-Iran Strategic Partnership: Civilizational Ties to Modern Connectivity.....	2
3. Rare-Earth Elements: The New Geopolitical Currency	3
4. Special Intensive Revision (SIR) of Electoral Rolls in West Bengal	4
5. Science-Driven Air Quality Monitoring: Delhi's Collaboration with IIT Kanpur	5
6. Concerns Over Hydraulic Fracturing in the Krishna Delta	5
7. Venezuela's "Resource Curse" and the Impact of Global Sanctions.....	6
8. Prime Minister's "Mann Ki Baat": Achievements of 2025 and 2026 Outlook.....	7
9. Rising Threat of Antimicrobial Resistance (AMR) in India	8
10. Promoting Swadeshi Crafts: Narasapuram Lace Craft	8
11. Smart India Hackathon: Fostering Innovation in Governance.....	9
12. Cultural Integration: 'Geetanjali IISc' and Beyond.....	10
13. National Security: "Operation Sindoor" as a Strategic Milestone.....	10
14. Solar Energy at the Grassroots: The Role of 'PM Surya Ghar'.....	11



1. The Great Indian Research Deficit and Vision for Viksit Bharat

Key Points:

- India currently accounts for only 3% of global research output despite being home to 17.5% of the world's population.
- The Gross Expenditure on R&D (GERD) in India has stagnated between 0.6% and 0.7% of GDP, far below the US (3.5%) and China (2.4%).
- The private sector's contribution to R&D in India is abysmal at 36.4%, whereas in mature innovation economies, it typically exceeds two-thirds.
- There is a persistent academia-industry disconnect where research remains theoretical and fails to translate into marketable innovations.
- The government has launched a ₹1 lakh crore Research, Development and Innovation (RDI) Fund to boost frontier technologies.
- To reach the "Viksit Bharat" goal by 2047, R&D spending must rise to at least 2% of GDP within the next decade.



Key Points & Provisions:

- **Viksit Bharat 2047:** The government's vision to transform India into a developed nation by the centenary of its independence⁷.
- **RDI Fund:** A strategic fund aimed at financing research in high-value domains like semiconductors and AI⁸.
- **Brain Drain:** The loss of highly skilled professionals to foreign countries due to better infrastructure and pay⁹.

Definitions:

- **Gross Expenditure on R&D (GERD):** The total expenditure (internal) on R&D performed on the national territory during a given period.
- **Valley of Death:** The gap between laboratory research and commercial application where many innovations fail to find funding¹⁰.

Conclusion:

Bridging the R&D gap requires a cultural shift in Indian industry and a fundamental reform of higher education to foster an innovation-led economy.

UPSC Relevance: GS Paper III (Economy, S&T); GS Paper II (Education).

2. India-Iran Strategic Partnership: Civilizational Ties to Modern Connectivity

Key Points:

- The relationship is rooted in a shared cultural heritage, evidenced by the linguistic and mythological resemblances between the Avesta and Rigveda.
- Connectivity through the Chabahar Port and the International North-South Transport Corridor (INSTC) is a central pillar of modern ties¹².



- The INSTC route is 40% shorter and 30% more cost-efficient than the traditional Suez Canal route¹³.
- Energy security remains vital, with Iran being a natural partner for India's growing hydrocarbon needs.
- Both nations face common security threats from extremism and terrorism in West and South Asia¹⁵.
- Future cooperation is sought in knowledge-based industries like nanotechnology and medical sciences.



Key Points & Provisions:

- **INSTC:** A multi-modal transportation route linking the Indian Ocean and Persian Gulf to the Caspian Sea and onwards to Russia and Europe¹⁷.
- **Chabahar Port:** India's first overseas port project, crucial for bypassing Pakistan to reach Afghanistan and Central Asia.

Definitions:

- **Sabk-e Hendi:** The "Indian Style" of Persian literature that flourished in the subcontinent¹⁹.
- **Multipolarity:** A distribution of power in which more than two nation-states have nearly equal amounts of military, cultural, and economic influence²⁰.

Conclusion:

By transforming historical goodwill into a forward-looking alliance, India and Iran can anchor stability in West Asia and enhance regional trade.

UPSC Relevance: GS Paper II (International Relations).

3. Rare-Earth Elements: The New Geopolitical Currency

Key Points:

- Rare-earth elements (REEs) comprise 17 metallic elements crucial for green technologies, electronics, and high-performance magnets.
- China dominates the global supply chain, accounting for 91% of separation/refining and 94% of permanent magnet production.
- Unlike oil, REEs are difficult to separate because they occur in low concentrations and have similar chemical properties.
- India holds significant reserves (6.9 million tonnes) but lacks the midstream processing capacity to refine them into oxides.
- The extraction process is environmentally sensitive, often involving radioactive byproducts like thorium or uranium.
- Global powers are racing to secure independent value chains for REEs to ensure economic and energy sovereignty.



Key Points & Provisions:

- **Lanthanides:** A series of 15 metallic elements from lanthanum to lutetium that form the core of REEs²⁷.
- **Critical Minerals:** Elements like lithium and cobalt, often confused with REEs, which are essential for battery technology²⁸.

Definitions:

- **Beneficiation:** The initial physical processing of ore to separate valuable minerals from waste rock²⁹.
- **Solvent Extraction:** A chemical technique used to separate individual REEs based on their affinity for specific organic solvents³⁰.



Conclusion:

Developing domestic refining capabilities is more critical for India than simply mining rare-earth ores to reduce strategic dependence.

UPSC Relevance: GS Paper III (Economy, Environment, S&T).

4. Special Intensive Revision (SIR) of Electoral Rolls in West Bengal

Key Points:

- The Election Commission of India (EC) has issued instructions to halt hearings for "unmapped" voters whose names appear in the 2002 voter list.
- The SIR process has faced criticism for allegedly causing hardship to elderly citizens and persons with disabilities (PwDs).
- Trinamool Congress has accused the EC of "torture" by requiring physical attendance at distant camps.
- In response, the EC allows Booth Level Officers (BLOs) to conduct field checks and upload photos of such electors instead³⁴.
- The SIR aims to clean electoral rolls of permanently shifted or untraceable voters, particularly in Matua-majority areas.
- Safety concerns have risen following the death of a BLO and protests at the Chief Electoral Officer's office³⁶.

Key Points & Provisions:

- **Article 324:** Grants the Election Commission the power of superintendence, direction, and control of elections.
- **Special Intensive Revision (SIR):** A thorough update of the voter list involving house-to-house verification and mapping.

Definitions:

- **Unmapped Voters:** Electors whose current residence cannot be verified against existing digital databases³⁸.



- **Booth Level Officer (BLO):** A grassroots-level official responsible for maintaining the accuracy of the electoral roll in a specific area.

Conclusion:

Balancing the integrity of electoral rolls with voter convenience is a significant challenge for the EC in ensuring "free and fair" elections.

UPSC Relevance: GS Paper II (Polity & Governance, Elections).

5. Science-Driven Air Quality Monitoring: Delhi's Collaboration with IIT Kanpur

Key Points:

- The Delhi government is partnering with IIT Kanpur to use "dynamic source apportionment" for real-time pollution monitoring.
- The goal is to move from reactive bans to evidence-based actions by identifying specific pollution sources like dust, transport, or biomass⁴¹.
- Systems will be built to forecast pollution levels and guide localized mitigation measures⁴².
- Current efforts include heavy fines for vehicular pollution and water sprinkling on roads to suppress dust⁴³.
- The capital's air quality frequently nears the "severe" category during winter months⁴⁴.
- This data-backed approach aims to provide a "visible change" in the city's air quality through measurable impacts⁴⁵.

Key Points & Provisions:

- **GRAP (Graded Response Action Plan):** An emergency framework to tackle air pollution levels in Delhi-NCR.
- **Dynamic Source Apportionment:** A scientific method to identify the contribution of various sources to air pollution at any given time⁴⁶.

Definitions:

- **Severe Category:** Air Quality Index (AQI) values above 400, posing health risks to healthy people and seriously impacting those with existing diseases.

Conclusion:

Moving toward source-specific, real-time data is a critical evolution in India's urban pollution management strategies.

UPSC Relevance: GS Paper III (Environment).

6. Concerns Over Hydraulic Fracturing in the Krishna Delta

Key Points:

- Scientists are seeking clarifications regarding a No-Objection Certificate (NoC) issued to Vedanta Limited for drilling in the Krishna delta.
- The project involves drilling 20 wells for oil and gas using the "hydraulic fracturing" process.



- Concerns center on the potential impact of fracturing fluids and chemicals on groundwater aquifers and irrigation canals.
- The Krishna delta is a highly sensitive, groundwater-dependent, and canal-irrigated region
- Activists are questioning the sustainability of large-scale groundwater withdrawal required for the project⁵¹.
- The cumulative and long-term impacts of multiple drilling locations remain a key point of contention.

Key Points & Provisions:

- **Environment Impact Assessment (EIA):** A process to evaluate the environmental consequences of a proposed project.
- **Hydraulic Fracturing (Fracking):** A technique where high-pressure fluid is injected into subterranean rocks to force open existing fissures and extract oil or gas⁵³⁵³⁵³⁵³.+1

Definitions:

- **No-Objection Certificate (NoC):** A legal document issued by an organization or individual that does not object to the covenants of the certificate⁵⁴.

Conclusion:

Energy extraction in ecologically sensitive and agriculturally vital zones like deltas necessitates rigorous scientific oversight and public transparency.

UPSC Relevance: GS Paper III (Environment, Energy).

7. Venezuela's "Resource Curse" and the Impact of Global Sanctions

Key Points:

- Venezuela holds the world's largest proven oil reserves (303 billion barrels) but suffers from a crippled economy
- The country's GDP per capita has plummeted to levels seen three decades ago, a decline unique among global economies.
- U.S. sanctions have prohibited Venezuela from accessing financial markets and restricted its oil exports⁵⁷.
- Internal mismanagement, lack of technical expertise, and underinvestment in refineries have led to a production slump
- The country's failure to diversify its economy beyond mineral (oil) exports has made it vulnerable to price crashes⁵⁹.
- Venezuela now has the highest government debt among OPEC members as a share of GDP⁶⁰.

Key Points & Provisions:

- **OPEC (Organization of the Petroleum Exporting Countries):** An intergovernmental organization of 12 nations that coordinates petroleum policies.
- **PDVSA:** The state-run oil company of Venezuela, central to the nation's economic history and current crisis⁶¹.



Definitions:

- **Resource Curse:** The phenomenon where countries with an abundance of natural resources tend to have less economic growth and worse development outcomes.
- **Diluents:** Fluids used to thin heavy crude oil so it can flow through pipelines, often blocked by sanctions⁶².

Conclusion:

Venezuela's crisis illustrates that vast natural wealth cannot guarantee prosperity without economic diversification and political stability.

UPSC Relevance: GS Paper II (IR); GS Paper III (Economy).

8. Prime Minister's "Mann Ki Baat": Achievements of 2025 and 2026 Outlook

Key Points:

- PM Modi highlighted 2025 as a year of "proud achievements" in national security, science, and sports⁶³.
- "Operation Sindoor" was cited as a symbol of India's uncompromising stance on national security⁶⁴.
- India's success in space was marked by Shubhanshu Shukla becoming the first Indian on the International Space Station⁶⁵.
- Environmental conservation saw the cheetah population in India rise to over 30⁶⁶.
- The PM emphasized youth-led platforms like the "Viksit Bharat Young Leaders Dialogue" for nation-building⁶⁷.
- Successes in various cricket world cups and para-athletics were touted as signs of India's rising sporting prowess⁶⁸.

Key Points & Provisions:

- **Viksit Bharat Young Leaders Dialogue:** A platform to engage youth in the vision for a developed India⁶⁹.
- **PM Surya Ghar Muft Bijli Yojana:** A scheme providing financial assistance for installing solar panels on rooftops⁷⁰.

Definitions:

- **Mann Ki Baat:** A monthly radio program through which the Prime Minister communicates with the citizens of India⁷¹.

Conclusion:

Highlighting achievements in diverse sectors serves to build national confidence and align the youth toward the goal of "Viksit Bharat."

UPSC Relevance: GS Paper II (Governance, National Schemes).



9. Rising Threat of Antimicrobial Resistance (AMR) in India

Key Points:

- An ICMR report reveals that antibiotics are becoming ineffective against common diseases like pneumonia and UTIs⁷².
- The Prime Minister urged citizens to avoid self-medication and using medicines at their own discretion⁷³.
- AMR poses a significant threat to public health, potentially turning minor infections into life-threatening conditions.
- Overuse and misuse of antibiotics in humans and the livestock sector are primary drivers of this resistance.
- India is often referred to as the "AMR capital" due to high rates of drug-resistant infections.
- Strengthening the "One Health" approach is essential to track and curb the spread of resistant pathogens.

Key Points & Provisions:

- **ICMR (Indian Council of Medical Research):** The apex body in India for the formulation and promotion of biomedical research⁷⁴.
- **One Health Approach:** A collaborative effort to achieve optimal health for people, animals, and the environment.

Definitions:

- **Antimicrobial Resistance (AMR):** When bacteria, viruses, fungi, and parasites change over time and no longer respond to medicines.

Conclusion:

Combating AMR requires a dual strategy of public awareness against self-medication and strict regulation of antibiotic sales.

UPSC Relevance: GS Paper III (Science & Technology, Health).

10. Promoting Swadeshi Crafts: Narasapuram Lace Craft

Key Points:

- The Narasapuram lace craft from Andhra Pradesh is being promoted under the *swadeshi* and self-reliance initiative.
- NABARD and the State government are collaborating to provide skill training and new designs to local artisans.
- The goal is to connect these traditional artisans with modern domestic and international markets⁷⁷.
- Promoting such crafts is part of a broader strategy to preserve cultural heritage while providing rural employment.
- GI (Geographical Indication) status for such crafts helps in protecting the unique identity of the products.



- Artisans are being taught to adapt their traditional skills to contemporary fashion and home decor needs.

Key Points & Provisions:

- **NABARD:** National Bank for Agriculture and Rural Development, which plays a key role in rural credit and craft promotion.
- **GI Tag:** A sign used on products that have a specific geographical origin and possess qualities due to that origin.

Definitions:

- **Swadeshi:** The concept of self-reliance and the use of products produced within one's own country⁷⁹.

Conclusion:

Empowering traditional artisans through skill up-gradation and market linkages is vital for inclusive rural economic growth.

UPSC Relevance: GS Paper I (Art & Culture); GS Paper III (Economy).

11. Smart India Hackathon: Fostering Innovation in Governance

Key Points:

- Over 13 lakh students and 6,000 institutes have participated in the Smart India Hackathon over the last eight years⁸⁰.
- In 2025, participants worked on solving over 270 problems submitted by 80 government departments.
- The initiative encourages "out-of-the-box" thinking to address administrative and technological challenges in governance.
- It bridges the gap between academic learning and real-world problem-solving.
- Such platforms are central to the "Digital India" and "Startup India" missions.
- Winners often receive support to turn their prototypes into viable startups.

Key Points & Provisions:

- **Digital India Mission:** A campaign to ensure government services are available to citizens electronically.
- **Hackathon:** A sprint-like event where programmers and others collaborate intensively on software projects or problem-solving⁸².

Definitions:

- **Problem Statements:** Specific challenges identified by government departments for which they seek innovative solutions from students⁸³.

Conclusion:

The Smart India Hackathon is a successful model of involving the youth in improving the efficiency of public service delivery.

UPSC Relevance: GS Paper II (Governance); GS Paper III (S&T).



12. Cultural Integration: 'Geetanjali IISc' and Beyond

Key Points:

- A music class started at the Indian Institute of Science (IISc) has evolved into a cultural center named 'Geetanjali'⁸⁴.
- It brings together science students to practice Hindustani classical, folk, and other classical genres⁸⁵.
- The PM also noted efforts by the Indian diaspora in Dubai to teach the Kannada language to their children⁸⁶.
- These initiatives highlight the importance of staying connected to cultural roots despite professional or geographical shifts⁸⁷.
- Promoting language and classical arts is seen as a way to preserve India's "soft power."
- Such centers within technical institutes foster a more holistic education environment.

Key Points & Provisions:

- **IISc:** India's premier research institute located in Bengaluru⁸⁸.
- **Soft Power:** The ability of a country to persuade others through culture and values rather than coercion.

Definitions:

- **Gitanjali:** Literally "song offering," often associated with the works of Rabindranath Tagore⁸⁹.

Conclusion:

The fusion of science and culture, and the preservation of mother tongues, are essential for maintaining a strong national identity.

UPSC Relevance: GS Paper I (Culture); GS Paper II (Diaspora).

13. National Security: "Operation Sindoor" as a Strategic Milestone

Key Points:

- "Operation Sindoor" was highlighted by the Prime Minister as a symbol of India's refusal to compromise on security⁹⁰.
- The operation reflects a proactive and assertive national security doctrine.
- It emphasizes the coordination between different wings of the armed forces and intelligence agencies.
- Such operations serve as a deterrent against external threats and cross-border provocations.
- National security achievements are increasingly being linked to the broader goal of becoming a global power.
- The operation's name reflects a cultural connect, typical of modern Indian strategic branding.

Key Points & Provisions:

- **Chief of Defence Staff (CDS):** A role created to provide single-point military advice and foster tri-service integration.



- **Deterrence:** The action of discouraging an action or event through instilling doubt or fear of the consequences.

Definitions:

- **National Security Doctrine:** A set of principles that guide a nation's actions in protecting its interests and citizens.

Conclusion:

Operation Sindoor underlines India's evolving strategic posture in an increasingly volatile global security environment.

UPSC Relevance: GS Paper III (Internal Security, Defence).

14. Solar Energy at the Grassroots: The Role of 'PM Surya Ghar'

Key Points:

- The 'PM Surya Ghar Muft Bijli Yojana' provides subsidies ranging from ₹75,000 to ₹80,000 for installing solar panels⁹¹.
- Young entrepreneurs like Moirangthem Seth from Manipur are leading campaigns to install solar panels in remote health centers⁹².
- The scheme aims to provide free electricity to households while contributing to India's renewable energy targets.
- It reduces the burden on the national grid and promotes decentralized energy production.
- Solarizing remote health centers is critical for maintaining the "cold chain" for vaccines and operating medical equipment.
- The initiative also fosters local employment in the installation and maintenance of solar systems.

Key Points & Provisions:

- **Renewable Energy Target:** India aims to achieve 500 GW of non-fossil fuel energy capacity by 2030.
- **Subsidies:** Financial aid provided by the government to make solar technology affordable for common families⁹³.

Definitions:

- **Decentralized Energy:** Electricity generated close to where it will be used, rather than at a large central plant.

Conclusion:

Grassroots adoption of solar energy is the key to meeting India's climate commitments while ensuring energy security for all.

UPSC Relevance: GS Paper III (Energy, Environment).