

05th June DSC

Current Affairs 05th June 2025.

Ladakh Introduces New Quota and Domicile Policies

Background:

After Article 370 was revoked in August 2019, Ladakh was designated a Union Territory. Since then, local groups have called for constitutional protections for Ladakh's land, jobs, culture, and population structure—akin to Article 371 or the Sixth Schedule. The central government has now rolled out major policy measures addressing these demands.

(GS 2: Federalism, Governance)

Reservation Policy Update:

- **Increased Reservation Cap:**
The reservation limit, earlier restricted to 50% under the J&K Reservation Act of 2004, has now been increased to 85%, excluding the 10% EWS quota. With EWS included, total reservations reach 95%—one of the highest in India.
- **Tribal Representation:**
80% of government jobs are likely to be reserved for Scheduled Tribes, aligning with Ladakh's tribal-majority demographics.
- **Comparative Insight:**
Similar quotas are found in tribal states like Meghalaya (85%) and Arunachal Pradesh (80%).

Domicile Criteria:

To gain domicile status, individuals must have resided in Ladakh for 15 years continuously from October 31, 2019. The rule also applies to the children of central government personnel.

Objective: Protect Ladakh's unique identity and prevent demographic disruption.

Language Inclusion:

Ladakh's official languages now comprise English, Hindi, Urdu, Bhoti, and Purgi—acknowledging the region's cultural and linguistic richness.

Hill Council Reform:

One-third of seats in the LAHDCs (Leh and Kargil) are now reserved for women on a rotational basis, enhancing women's participation in governance.

Overall Impact:

These reforms address Ladakhi aspirations for autonomy, representation, and identity preservation. They reflect a decentralised approach to governing tribal-dominated UTs and may serve as a blueprint for tailored governance models in other regions.

IISc Develops Nanozyme to Prevent Harmful Blood Clots

Research Background:

Scientists from IISc, led by Prof. G. Mugesh, have created an artificial nanozyme to reduce

abnormal clotting linked to conditions like pulmonary thromboembolism and COVID-19.

(GS 2: Health | GS 3: Science & Tech)

Understanding Thrombosis:

- **Normal Clotting (Haemostasis):**
Occurs as a protective response to blood vessel injury, involving platelet activation.
- **Abnormal Clotting (Thrombosis):**
Triggered by oxidative stress and an excess of Reactive Oxygen Species (ROS), leading to unwanted platelet activation and dangerous clots.

Nanozyme Innovation:

- Redox-active nanomaterials were developed to replicate antioxidant enzyme activity.
- These synthetic compounds help neutralize ROS, thereby preventing clot-related complications.
- Synthesized via controlled chemical reactions, spherical Vanadium Pentoxide (V_2O_5) nanozymes emerged as the most effective.

Medical Importance:

- Potential treatment for PTE, COVID-related clotting, and possibly ischemic stroke.
- Offers a targeted alternative to blood thinners with fewer side effects.

Broader Relevance:

The research showcases a biomimetic approach in medicine—designing materials that mimic natural enzymes, opening new possibilities in nanotechnology and precision therapeutics.

Mustard Oil: Ban, Legal Dispute, and Health Risk

Overview:

Mustard oil ranks as India's third-most consumed cooking oil. It contains 40–54% erucic acid, which is considered a health concern in Western countries.

(GS 2: Governance | GS 3: Agriculture)

Key Regulatory and Legal Developments:

- **FSSAI Ban (2021):**
Prohibited blending mustard oil with other oils to curb adulteration and support local mustard farmers.
- **Supreme Court Ruling (2024):**
Rejected approval for GM mustard (DMH-11) due to inadequate health risk assessments. One judge expressed concern over possible safety issues.

Health Concerns – Erucic Acid:

- Indian mustard oil has significantly high erucic acid levels compared to the <5% standard in the U.S. and Europe.

- Animal trials suggest risks to heart, liver, and kidney, though human data remains inconclusive.
- Globally, oils like canola (with <2% erucic acid) are used as safer alternatives.

GM Mustard (DMH-11):

- Offers reduced erucic acid content (30–35%) and higher yield.
- Can lessen dependency on blended oils and imports—India’s edible oil import bill stands at over \$20 billion.
- Requires further research to meet international safety thresholds.

Pros and Cons of Blending:

- **Benefits:**
 - Lowers erucic acid levels
 - High in healthy unsaturated fats
 - Useful in the absence of low-erucic variants
- **Risks:**
 - High adulteration rates
 - Use of harmful additives
 - Mustard oil has the highest failure rate in FSSAI quality checks (2020)

Policy Suggestions:

- Permit only packaged, clearly labelled blended oils.
- Strictly enforce blending limits.
- Strengthen food safety at the state level.
- Prioritise research into low-erucic GM mustard strains.
- Adopt a comprehensive approach that integrates health, economics, and science.

Should Civil Services Examination Be Reformed?

Historical Context

The origins of India’s civil services exam date back to the **Macaulay Report (1854)**, which emphasized **merit-based recruitment**. Later, the **Kothari Committee (1975)** established the three-tier format: **Prelims, Mains, and Interview**.

Prelims: From Ambiguity to Reform

Initially, Prelims included an optional subject and a General Studies paper, with a 2:1 weight. Lack of transparency—no marks or cut-offs were published—left candidates in the dark. The **RTI Act (2005)** forced UPSC to reveal evaluation methods, pushing for reform. The **S.K. Khanna Committee (2010)** led to a key change in 2011:

- Optional paper removed

- Introduced GS Paper I and **CSAT** (Paper II)

Issues with CSAT

When CSAT marks counted for merit, it advantaged **urban, English-medium, and science/engineering candidates**, sparking rural and humanities aspirants' protests. Later, CSAT was made a **qualifying paper** with a 33% pass mark, and its score excluded from merit.

Concerns with Mains

Revised in 2013 post-Nigvekar Committee. GS papers now span diverse subjects. Yet, current format:

- Focuses on **short answers** (20 questions), promoting rote learning
- Lacks long-form analytical questions
- **Optional subject** choice often based on scoring potential, not academic relevance

Prelims as a Filter

Prelims acts as an eliminator, reducing ~5 lakh candidates to ~10,000. Paper-I is highly unpredictable, and even though CSAT is qualifying, it still favors science-background candidates. The **uncertainty and effort** required impose a high opportunity cost on aspirants.

Proposed Reforms

- Reimagine Prelims to assess **potential**, not just eliminate
- Restructure Mains to include **essay-style, analytical questions**
- Replace optional subjects with papers on **governance and public policy**
- Ensure the exam better reflects the **qualities needed in administrators**

Conclusion

Despite reforms, legacy inefficiencies persist. Overhauling the exam can help:

- Eliminate biases
- Increase diversity
- Promote analytical thought over cramming
- Better align aspirants with the administrative roles they aim for

Supreme Court on Contempt and Legislative Authority

Background

In 2012, Nandini Sundar and others filed a contempt case against Chhattisgarh for violating a **2011 SC order** directing the disbanding of armed tribal groups like **Salwa Judum** and Special Police Officers (SPOs).

Allegations

Petitioners claimed that the state:

- Legalised SPOs via **Chhattisgarh Auxiliary Armed Police Force Act, 2011**

- Didn't clear schools used by security forces
- Failed to compensate victims of the Salwa Judum

Supreme Court Verdict (May 2024)

The Court ruled:

- Enacting a **law does not amount to contempt**, unless it defies or contradicts a court's ruling
- **Legislatures have plenary powers** unless a law is declared unconstitutional
- Remedy lies in **constitutional challenge**, not contempt proceedings

Broader Observations

The Court:

- Emphasized **separation of powers**
- Recognized ongoing violence in Chhattisgarh
- Directed both the Centre and State to ensure **law and welfare** (Art. 315)

Significance

Reinforces legislative autonomy and judicial review as **distinct processes**

Upholds institutional checks and balances in governance

Flue Gas Desulphurisation (FGD) Not Needed for All Plants

Context

In 2015, FGD systems were mandated to reduce **sulphur dioxide (SO₂)** emissions from coal-based thermal power plants. Despite several deadline extensions, most plants haven't complied.

Expert Committee's Recommendation

A high-level committee led by PSA Ajay Sood suggested that FGDs are only essential for

Category A plants—those:

- Within **10 km of NCR**
- Located in cities with **1 million+ population**

Of 66 such plants, only 14 have installed FGDs.

Scientific Justification

- Ambient SO₂ levels in India (10–20 µg/m³) are **well below** the national limit (80 µg/m³)
- Indian coal has **naturally low sulphur content**
- No significant difference in SO₂ levels between areas with and without FGDs

Operational & Financial Challenges

- High installation costs
- Limited FGD vendors

- Tariff hikes if costs passed to consumers
- COVID-19 further delayed implementation

Environmental Compliance

Plants must still comply with standards for:

- **Particulate matter**
- **Water consumption**
- **SO₂ stack emissions**, as long as ambient air quality is within limits

Policy Shift

Indicates a **region-specific regulatory approach** rather than one-size-fits-all norms. Balances environmental protection with **economic feasibility**.

EC's Tech-Driven Voter Turnout Monitoring

Background

The Election Commission introduced a real-time voter turnout tracking system in response to past delays and transparency concerns. It will debut in **Bihar Assembly elections**.

New System Features

- **Presiding Officers** update turnout every two hours via the **ECINET app**
- Data is consolidated at constituency level
- Replaces slower manual systems (calls/SMS/WhatsApp)

Advantages

- Enables near **real-time updates**
- Improves accuracy and transparency
- Reduces manual errors
- Increases accountability of booth-level officers
- Builds **public confidence**

Challenges

- Connectivity issues in remote areas
- Need for **staff training**
- Data may still undergo post-poll adjustments

Implications

Marks a **digital leap** in election monitoring

Reinforces EC's **transparency and tech-driven approach**

Sets a **template for national roll-out**

Rajgir Hot Spring Bacteria Shows Antibacterial Activity

Scientific Context

Thermophilic bacteria, which thrive in extreme heat (45–70°C), often produce **strong antibiotics** to survive hostile environments like hot springs.

Study Overview

- Conducted by VIT, Tamil Nadu at **Rajgir Hot Spring Lake**, Bihar
- Sample temperatures: 43–45°C
- Used **16S rRNA metagenomics** to study microbial diversity

Key Findings

- Found **Actinobacteria** dominated (40–43%)—higher than global averages
- Isolated **7 strains** with potent activity against harmful bacteria like *E. coli*, *Salmonella*, *Klebsiella*, *Staphylococcus*

Discovery

- Identified **diethyl phthalate**, an antibacterial compound from *Actinomycetales*
- Effective against *Listeria monocytogenes*, which causes foodborne illness

Broader Impacts

- Addresses urgent need for **new antibiotics** amid rising **antimicrobial resistance (AMR)**
- Potential for **industrial** and **agricultural** applications (e.g., PCR enzymes, plant growth promoters)

Challenges

- India's hot springs remain under-researched
- Difficult sampling conditions
- Complex process to isolate effective compounds

Conclusion

Rajgir study shows the untapped potential of India's thermal ecosystems in **antibiotic discovery**, offering solutions for both healthcare and agriculture.

05th June 2025: Static MCQS

1. Consider the following statements:

Statements I:

The amount of dust particles in the atmosphere is more in subtropical and temperate areas than in equatorial and polar regions.

Statement II:

Subtropical and temperate areas have less dry winds.

Which one of the following is correct in respect of the above statements?

- a. Both Statement I and Statement II are correct and Statement II explains Statement I
- b. Both Statement I and Statement II are correct but Statement II does not explain Statement I
- c. Statement I is correct but Statement II is not correct
- d. Statement I is not correct but Statement II is correct

Correct Option: (c)

2. Consider the following statements:

Statement I:

In January, in the Northern Hemisphere, the isotherms bend equatoward while crossing the landmasses, and poleward while crossing the oceans.

Statement II:

In January, the air over the oceans is warmer than that over the landmasses in the Northern Hemisphere.

Which one of the following is correct in respect of the above statements?

- a. Both Statement I and Statement II are correct and Statement II explains Statement I
- b. Both Statement I and Statement II are correct but Statement II does not explain Statement I
- c. Statement I is correct but Statement II is not correct
- d. Statement I is not correct but Statement II is correct

Correct Option: (a)

3. Consider the following statements:

Statement I:

In the context of effect of water on rocks, chalk is known as a very permeable rock whereas clay is known as quite an impermeable or least permeable rock.

Statement II:

Chalk is porous and hence can absorb water.

Statement III:

Clay is not at all porous.

Which one of the following is correct in respect of the above statements?



- a. Both Statement II and Statement III are correct and both of them explain Statement I
- b. Both Statement II and Statement III are correct but only one of them explains Statement I
- c. Only one of the Statements II and III is correct and that explains Statement I
- d. Neither Statement II nor Statement III is correct

Correct Option: (c)

4. Consider the following statements:

- I. Without the atmosphere, temperature would be well below freezing point everywhere on the Earth's surface.
- II. Heat absorbed and trapped by the atmosphere maintains our planet's average temperature.
- III. Atmosphere's gases, like carbon dioxide, are particularly good at absorbing and trapping radiation.

Which of the statements given above are correct?

- a. I and III only
- b. I and II only
- c. I, II and III
- d. II and III only

Correct Option: (c)

5. Consider the following statements about the Rashtriya Gokul Mission:

- I. It is important for the upliftment of rural poor as majority of low producing indigenous animals are with small and marginal farmers and landless labourers.
- II. It was initiated to promote indigenous cattle and buffalo rearing and conservation in a scientific and holistic manner.

Which of the statements given above is/are correct?

- a. I only
- b. II only
- c. Both I and II
- d. Neither I nor II

Correct Option: (c)