



# The Hindu Important News Articles & Editorial For UPSC CSE

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# Page 07 : GS 3 : Science and Technology

In the quest for quantum supremacy-the point where a quantum computer outperforms classical computers on a specific task—researchers from the University of Oxford and Universidad de Sevilla have demonstrated a significant breakthrough using a simple, understandable game rather than complex algorithms. Their results were published in Physical Review Letters (Feb 2025), marking a step towards accessible verification of quantum advantage.

# Scientists demonstrate clear quantum advantage using simple game

Previous attempts at showing quantum supremacy have used complicated problems. Google used random circuit sampling for its Sycamore processor, and Chinese researchers used the Gaussian boson sampling problem for the Jiuzhang computer. Both require specialised equipment to perform, making it difficult to verify the results

#### Tejasri Gururaj

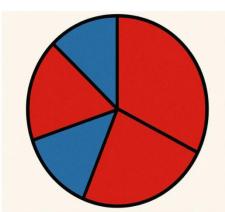
or a long time, researchers have been looking for the sort of task that a quantum computer will be better at doing than a classical computer. Because if a quantum computer shows that it can be superior, it will achieve a milestone called quantum supremacy.

will achieve a milestone called quantum supremacy. Researchers from the University of Oxford and Universidad de Sevilla eventy demonstrated quantum supremacy using a simple game. Their finding, published in *Physical Review Letters* in February, borrowed a concept from the odd-cycle graph. The aim here is simple: to colour a circle containing an odd number of points with containing an odd number of points with two colours, such that no two adjacent points have the same colour. This is mathematically impossible. The researchers adapted this game to use as test of quantum supremacy. Previous attempts at showing quantum supremacy have used complicated problem. Scher example, Google used a problem called random circuit sampling to demonstrate the supremacy of its system processor in 2019. Researchers in China went with the Gaussian boson sampling problem for the fuzuhang quantum computer. Both these problems require complex mathematics and specialised equipment to perform, which makes it difficult to verify the results.

The colouring problem The setup for the odd-cycle problem is simple. Consider a circle with an odd number of points inside it, say three. The challenge is to use two colours, blue and red, to colour the points such that no two adjacent points have the same colour.

that no two adjacent points have the same colour. Once one of the points is coloured red and the other blue, the third point has to be red or blue, breaking the rule. In the researchers' experiment, there are two players named Alice and Bob who can't communicate with each other. A referee asks them questions about the colour of the points in an odd-numbered circle. The game ends in victory if two conditions are met: when asked about the same points, the players must answer with the same colour (e.g., both must say "blue"), and when asked about adjacent points, they must answer with different colours (i.e., Alice says "blue" and Bob says "red"). The classical scenario, the players agree on a colouring pattern for the points before the game begins, yielding a success rate of 83.3% for a three-point

**Key Concepts** 



Can you colour a circle containing an odd number of sections with two colours, such that no two adjacent sections have the same colour? IMAGE CREATED WITH CHATGPT

# circle. In other words, the game can be won 83.3% of the time.

Playing the quantum game To implement the quantum version of the experiment, the researchers trapped two strontium atoms in separate locations 2 m strontium atoms in separate locations 2 m apart. Using lasers, the researchers entangled the two atoms. When two particles are entangled, they are correlated in a way that classical physics cannot explain. Measuring one particle – 1.e., checking its present condition – will instantaneously affect the other. A single computer acted as the referee,



STIL Google Quantum AI's Hartmut Neven (L) and Anthony Megrant (R) examine a cryostat

mputing chips erator for cooling quantum computing ogle's Quantum lab in Santa Barbara, California. REUTERS

Using lasers, the researchers entangled two trapped strontium entangied two trapped strontium atoms. When two particles are entangled, they are correlated in a way that classical physics cannot explain. Measuring one particle will instantaneously affect the other

sending the questions to two separate control systems controlled by Alice and Bob. After receiving the questions, each player performs specific quantum operations on the atom using laser pulses. These operations involved rotating their particles through specific angles that were mathematically related to which point on the circle a question was about. The first question meant rotating some angle, say, and the second question meant rotating through a different angle. After performing the operations, the players measured their atoms to determine the answer, which could be 0 or 1.

#### ensure they are quantum in nature. im advantage

For the 3-point circle, the quantum scenario had a win rate much greater than the classical scenario (i.e., 83.3%). It clearly demonstrated quantum supremacy, which the team showed for circles with up to 19 points. Across all the 101,000 games, their

implementation achieved a win rate of 97.8%. The remaining 2.2% gap was attributed to noise while creating the antandement between the atoms

entanglement between the atoms. Their test to make sure the atoms were properly entangled was also found to be the strongest such correlation ever observed between two separated quantum systems.

Why this matters As demonstrated in the study, the odd-cycle game approach is much simpler to implement to establish quantum supremacy. In order to prove the Sycamore processor had achieved quantum supremacy, Google fitted if with 53 superconducting qubits, an enormous computational resource. On the other hand, the researchers used only two entangled qubits, which is much simpler and less computationally demanding than Google's setup.

entangiee quoits, which is much simpler and less computationally demanding thar Google's setup. According to the researchers, their approach could be used in practical scenarios where collaborating agents can't communicate, such as the rendezvous task. A type of coordination problem, the rendezvous task is about two or more people meeting at a particular location without communicating with each other. A classical computer may try to determine where they will meet by systematically exploring potential meeting points and the routes the two people may take to get there. A quantum computer will leverage quantum entanglement to create correlations that classical physics can't reproduce, speeding up its search for the most likely meeting point.

speeding up its search for the most likely meeting point. If there are 1 million meeting points, for example, the worst-case number of steps for a classical computer to find the meeting point is 1 million, whereas for a quantum computer using Grover's algorithm, would be 1,000 steps. For now, the odd-cycle game is an example of the kind of power quantum computers have, without requiring complicated mathematics to make sense of. *Tetasri Gururai is a freelance science* 

algorithm, would be 1,000 steps. Each number was mapped to a colour, Each number was mapped to a colour, blue or red, and its value was reported to the referee. The researchers played this game for circles containing 3 to 27 points 101,000 (*fejasri Gururaj is a freelance science* They also performed additional tests to verify the strength of the correlations and

#### THE GIST

the classical scenario, the players agree on a colouring pattern for the points before the game begins, yielding a success rate of 83.3% for a three-point circle. In other words, the game can be won 83.3% of the time

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A quantum computer will leverage entanglement to create correlations that classical physics can't reproduce. If there are 1 million meeting points in a rendezvous task, the worst-case number of steps for a classical computer is 1 million, whereas a quantum computer would require 1,000

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- Quantum Supremacy
  - Refers to a quantum computer performing a task that a classical computer cannot solve in reasonable time.
- Previous demonstrations:
  - o Google's Sycamore processor (2019) using random circuit sampling.
  - China's Jiuzhang quantum computer using Gaussian boson sampling.
- The Odd-Cycle Game
  - A logic puzzle based on graph theory.
  - Setup: A circle with an odd number of points (e.g., 3, 5, 7...).
  - Objective: Colour the points using only two colours such that no two adjacent points have the same colour.
  - Mathematically impossible for odd cycles this makes it ideal for testing the difference between classical and quantum logic.

# How the Game Demonstrated Quantum Supremacy

- Classical Scenario
  - Two players (Alice and Bob) agree on a strategy.
  - Cannot communicate during the game.
  - Maximum win rate: 83.3% for a 3-point circle.
- Quantum Setup
  - Two strontium atoms entangled and placed 2 meters apart.
  - A referee sends questions to Alice and Bob.
  - Each player performs quantum operations (rotations via laser pulses) based on the question.
  - Measurement results (0 or 1) are mapped to colours (red/blue).
- Results
  - Over 101,000 trials, quantum implementation achieved 97.8% win rate.
  - Demonstrated clear quantum advantage up to 19-point circles.
  - Verified the strongest entanglement correlation observed between two spatially separated systems.

# Why This Matters

- Simplicity & Accessibility
  - Unlike earlier demonstrations, the odd-cycle game uses only two qubits, making it:
    - Easier to implement
    - Easier to verify
    - More scalable for future practical uses
- Practical Implications

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- Useful in coordination problems like the rendezvous task, where agents must coordinate without communication.
- Quantum entanglement can reduce computational complexity drastically, e.g., via Grover's algorithm:
  - Classical search: O(N)
  - Quantum search:  $O(\sqrt{N})$

## Step Towards Real-World Applications

- Shows how minimal quantum resources can still outperform classical logic.
- Lays foundation for building simpler and efficient quantum-based protocols in communication and cryptography.

### Conclusion

• The odd-cycle game marks a pivotal moment in making quantum supremacy demonstrable, verifiable, and understandable. It signals a future where quantum solutions are both powerful and practical, bridging the gap between cutting-edge science and real-world application — a space where India must actively participate and invest.

# **UPSC Mains Practice Question**

**Ques** :What is quantum supremacy? Discuss the significance of the recent demonstration of quantum advantage using a simple odd-cycle game. How does it differ from previous demonstrations, and what are its potential applications? **(250 words)** 

# **GURUKULAM V**AIAS

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# Page 09 : GS 2 : Indian Polity

The article underscores a critical but often overlooked dimension of India's judicial system — the **enforcement of judicial orders**. While landmark verdicts are frequently celebrated, many fail to deliver intended outcomes due to weak or absent implementation frameworks.

# Strengthening enforcement of judicial orders

esidents of central Jaipur face persistent disturbances from air horn usage by buses and trucks even during late hours Despite existing noise pollution regulations, enforcement has been inadequate. The National Green Tribunal (NGT) issued an order limiting air horn usage on major roads between 10 p.m. and 6 a.m. However, enforcement agencies, including the traffic police transport department, and pollution control board, have still not implemented the order. What the NGT should have done is to evaluate the possibility of its order being implemented or taken action which would be implementable. This would mean complete ban of air horns, which it did not consider. Consequently, the issue remains unresolved after more than two years. Judicial orders that incorporate strategies to overcome enforcement challenges have the potential to optimise resource utilisation and foster public satisfaction. By focusing on practical and actionable enforcement strategies, meaningful and lasting outcomes can be achieved. Inspiration can also be drawn from Kathmandu in Nepal, where strict enforcement of noise control measures, combined with public awareness campaigns, has led to remarkable change. It demonstrates how proactive enforcement, supported by public education and cooperation, can drive change. Enforcement is not merely a procedural task – it is integral to justice itself. The consequences of weak enforcement of judicial decisions are profound, undermining both governance and

#### public trust in the judiciary. **Anticipating hurdles** The challenges in enforcing

The challenges in enforcing judicial decisions are emblematic of systemic issues. Enforcement agencies are often reluctant to act on violations they deem "minor", creating a significant disconnect between judicial intent and The

effectiveness of iudicial reform

undermined by

enforcement

mechanisms

in India is

weak



Pradeep S. Mehta Secretary General of CUTS International ground reality. This gap highlights the need for judicial foresight during decision-making to anticipate enforcement hurdles and ensure the implementation framework is robust and realistic. Consider the State of Tamil Nadu v. K. Balu (2017) case,

popularly known as the liquor base, popularly known as the liquor ban case. The Supreme Court aimed to curb road accidents caused by drink driving and prohibited liquor sales within 500 metres of the highways. However, enforcement challenges soon emerged. The decision led to widespread circumvention, including the reclassification of highways as urban roads and the relocation of liquor outlets just beyond 500 meters of highways. This revealed a lack of foresight in anticipating implementation hurdles and delays in execution procedures which can even render judgments ineffective.

There may be certain exceptions where it may be prudent for the court to consider certain aspects for effective enforcement. Section 38 of the Code of Civil Procedure (CPC) in India gives the power to execute a decree to both the court that passed it and the court to which it is sent for execution. Order 21 of the CPC addresses the formal process of executing decrees issued by courts at all levels, from the grassroots level to the highest authority. Despite these provisions, the actual execution of judgments often falls short as there are concerns regarding the validity of a decree and judicial misconduct.

India has witnessed several instances where judicial enforcement has been effective. In *Common Cause v. Union of India* (2018), the Supreme Court legalised passive euthanasia and the success of this judgment stemmed from its clarity: specific guidelines for healthcare institutions, stringent monitoring mechanisms, and systematic oversight ensured that the decision translated into action. The Taj Tapezium Zone directives highlighted the significance of inter-agency collaboration. Based on the Varadarajan Committee's recommendation, a green belt was established around the Mathura oil refinery, and regular air quality monitoring was mandated. These examples show that effective enforcement requires actionable directives and concurrent monitoring frameworks.

How to ensure enforcement To achieve the aim of effective enforcement, there is a pressing need to establish a system where an officer could be appointed in every government department and agency to review and remedy the situation. The officer would be responsible for executing orders, ensuring compliance through regular audits and reporting, and would face the threat of consequences for failing to execute such orders.

It is essential to leverage technologies to identify government departments and agencies whose jurisdictions align with specific judicial directives enabling the entities to report back to the court within designated time frames. Enforcement mechanisms play a critical role in encouraging compliance, particularly through the use of positive measures. Transparency, as a key mechanism, fosters compliance by ensuring robust policy formation and the effective dissemination of

information. In conclusion, the effectiveness of judicial reform in India is undermined by weak enforcement mechanisms. To bridge these systemic gaps, it is imperative to establish a structured system with officers accountable to the judiciary while maintaining transparency. Tech-driven monitoring, clear accountability frameworks, and fostering public engagement can significantly improve compliance. Furthermore, inter-agency coordination is essential to translate judicial rulings into trangible real-world outcomes.

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### **Core Issue**

Despite existing laws and judicial directives, enforcement agencies often **neglect "minor" violations**, such as noise pollution from air horns in Jaipur, resulting in persistent non-compliance. This illustrates the **disconnect between judicial intent and administrative action**.

### Why Enforcement Fails

- 1. Lack of Judicial Foresight
  - Courts often pass judgments without anticipating practical enforcement hurdles.
  - *Example*: In *State of Tamil Nadu v. K. Balu (2017)*, a liquor ban within 500m of highways led to administrative loopholes like highway reclassification.

# 2. Institutional Apathy

- Agencies like traffic police or pollution control boards fail to act on "non-priority" directives.
- 3. Structural Weaknesses in Execution Mechanisms
  - Although Order 21 of CPC and Section 38 give courts execution powers, implementation remains weak due to bureaucratic inertia and lack of accountability.

# Successful Examples of Enforcement

- Common Cause v. Union of India (2018)
  - Legalised passive euthanasia with clear guidelines, monitoring, and institutional clarity.
- Taj Trapezium Zone (TTZ) Case
  - Enforced environmental protection through inter-agency collaboration and regular monitoring.

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These illustrate that well-structured, multi-agency enforcement mechanisms lead to real-world

# Way Forward

outcomes.

# . . .

- Institutional Accountability

   Designate an enforcement officer in every government department to execute court orders, conduct audits, and report back to the judiciary.
- 2. Technology Integration
  - Use **tech-based dashboards** and **GIS mapping** to monitor compliance and map responsibilities.
- 3. Transparency and Public Engagement

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• Disseminate court directives clearly and promote **citizen participation** in monitoring compliance.

### 4. Inter-Agency Coordination

o Judicial mandates must clearly assign responsibilities to all relevant departments.

## 5. Positive Enforcement Measures

• Encourage compliance through **incentives**, not just punitive actions.

## Conclusion

Judicial effectiveness in India is no longer just about pronouncing progressive judgments, but about ensuring that justice reaches the ground. A framework of judicial foresight, administrative accountability, technological tools, and citizen participation is vital to translating court orders into actual change — reinforcing the rule of law and restoring public trust in institutions.

#### **UPSC Mains Practice Question**

**Ques :** "Enforcement is integral to justice." Examine the challenges in enforcing judicial decisions in India. Suggest institutional and systemic reforms to strengthen compliance with judicial orders. **(250 words)** 

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# Page: 10:GS 3: Enviroment

With rising urban congestion, pollution, and pedestrian fatalities, active mobility has become a crucial component of sustainable urban planning in India. This mode of transport not only addresses environmental concerns but also improves public health and accessibility.

# Why is active mobility necessary in India?

What is active mobility and how is it a sustainable mode of transportation? What is the Karnataka Active Mobility Bill, 2022? How will non-motorised modes of transport increase health benefits? How have other countries integrated active mobility in their infrastructures?

#### EXPLAINER

Dev Nath Pathak Ruth Anna. A

#### The story so far:

poradic reports of accidental deaths and injuries of pedestrians, cyclists, street-hawkers, and others in the metro cities of India are on the rise. While urban development in various metro cities include patches of dedicated service lanes for pedestrians and cyclists, motor vehicles tend to ply on them as well. As a result, the risk of accidents are as high on these pathways as on the main roads with vehicular traffic. In such a grim situation, active mobility is the need of the hour.

#### What is active mobility?

Active mobility refers to modes of transportation that use human power instead of a motorised form of mobility. Active modes of transport include walking, cycling, skateboarding, and other non-motorised modes that are used for travel and not recreational activities.

Active mobility in India has gained attention due to increasing traffic congestion, pollution, health concerns, and rising pedestrian deaths. This is accompanied by the growing importance of sustainable transport in national policies like the National Transit Oriented Development (NTOD) policy and the Smart Cities Mission (SCM), along with international efforts such as the Paris Agreement which emphasises reducing carbon emissions and promoting eco-friendly mobility.

Bengaluru's first Bicycle Mayor, Sathya Sankaran, has been a key advocate for cycling and pedestrian-friendly infrastructure since 2018. His efforts contributed to the drafting of the Karnataka Active Mobility Bill, 2022, In 2020, Karnataka recorded the highest number of pedestrian deaths in the country at 13%. Therefore, the Bill aims to promote urban mobility through the

What is Active Mobility?

0

 Walking Cycling



Towards a healthy city: Cycling lanes in Bengaluru. SPECIAL ARRANGEMENT

protection of the rights of pedestrians and cyclists. The inherent goal of this bill is to provide a legal structure protecting and promoting active mobility, and ensuring equal access to public space. Several other States are also giving attention to active mobility. Delhi is expanding cycling tracks and pedestrian-friendly streets under its Delhi EV policy. Pune has implemented a Comprehensive Bicycle Plan and developed over 300 km of cycling lanes. Chennai is redesigning roads under the SCM to improve pedestrian safety, while Kochi has introduced a Public Bicycle Sharing (PBS) system to enhance last-mile connectivity.

#### What is its significance?

As stated by the World Health Organization (WHO), active mobility in all its forms has economic, social, environmental, and health benefits. The

Active mobility refers to human-powered modes of transport such as:

economic benefits include reduced household expenditure on fuel and transportation and lower healthcare costs due to enhanced public health. It also boosts local businesses since pedestrian-friendly infrastructure attracts higher foot traffic.

Walking and cycling are sustainable modes of transport as compared to motorised vehicles due to their marginal carbon emissions. They enhance energy security and significantly reduce India's 12% carbon emissions from road transportation. Cities with well-developed infrastructure for active transport report cleaner air and reduced traffic congestion. Moreover, active modes of transport are known to reduce the risk of

chronic diseases, improve cardiovascular health, promote mental well-being, and enhance public health among citizens. It is a mode of transportation that makes

cities more vibrant and climate-conscious.

#### THE GIST

#### What are the harriers? Active mobility remains severely

underutilised because urban infrastructure actively discourages it. The lack of adequate pedestrian and cyclist-friendly infrastructure hinders active mobility as a primary mode of transport. As of 2021, more than 85% of roads do not meet the minimum safety requirements for walking and cycling. This is also accompanied by the availability of low-cost, alternative modes of motorised transport. Additionally, extreme weather conditions and long distances of travel discourage people from adopting active modes of transport.

Moreover, social perceptions act as significant barriers. In many regions, cars and bikes are associated with a higher social status. India has a burgeoning number of privately owned motor vehicles plying on the road. According to the Society of Indian Automobile Manufacturers, over 12,000 cars are sold every day in India. High traffic congestion, along with weak enforcement of traffic regulations, makes walking and cycling unsafe.

How have other countries fared? With more than 35,000 km of dedicated cycling lanes, The Netherlands is a global leader in promoting active mobility through cycling. The European Union's Mobility and Transport department prioritises promoting walking and cycling as a means of transport to enable more sustainable mobility. This is accompanied by Vision Zero, which aims to mitigate the number of incidents between pedestrians, cyclists, and motor vehicles. Germany's Berlin Mobility Act mandates wider sidewalks and dedicated cycling lanes, reduced speed limits for motorised vehicles within city limits, and prioritises pedestrians/cyclists in urban planning.

Dev Nath Pathak, Associate Dean, Faculty of Social Science, South Asian University. Ruth Anna A is a Research Scholar, Christ University.

#### Active modes of transport include walking, cycling, skateboarding, and other non-motorised modes that are used for travel and not recreational activities

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drafting of the Karnataka Active Mobility Bill, 2022.

dedicated cycling lanes, The

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- Skateboarding
- These are used primarily for travel rather than recreation.
- It is a sustainable, inclusive, and low-carbon mode of transport gaining traction globally and now increasingly in India.

## Why is Active Mobility Necessary in India?

- 1. Public Health and Safety
  - Rise in pedestrian and cyclist fatalities (e.g., Karnataka recorded 13% pedestrian deaths in 2020).
  - WHO highlights that active transport reduces chronic diseases and improves mental and cardiovascular health.
- 2. Environmental Benefits
  - Reduces carbon emissions (India's road transport contributes ~12%).
  - Helps meet international commitments like the Paris Agreement.
- 3. Economic and Social Impact
  - Lower household expenditure on transport and health.
  - Boosts local economies through higher footfall.
  - Reduces traffic congestion and air pollution.

### Karnataka Active Mobility Bill, 2022

- Drafted with the support of Bengaluru's Bicycle Mayor, Sathya Sankaran.
- Aims to:
  - Protect rights of pedestrians and cyclists.
  - o Provide legal backing to active mobility infrastructure.
  - Ensure equitable access to public spaces.
  - Recognises active transport as a legitimate urban mobility option.

# **Efforts Across Indian Cities**

- Delhi: Expanding cycling tracks under EV Policy.
- Pune: Implemented Comprehensive Bicycle Plan, 300+ km cycling lanes.
- Chennai: Redesigning roads for pedestrian safety under Smart Cities Mission.
- Kochi: Public Bicycle Sharing (PBS) system for last-mile connectivity.

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# **Challenges and Barriers**

- Infrastructure Deficit
  - Over 85% of Indian roads are unsafe for non-motorised users.
  - Encroachment by vehicles on designated pedestrian/cyclist lanes.
- Socio-Cultural Barriers
  - Preference for private vehicles due to status symbol and perceived convenience.
  - Weak law enforcement and lack of awareness.
- Climate and Distance
  - Extreme weather conditions and long commuting distances deter active modes.

# **Global Best Practices**

- The Netherlands
  - 35,000+ km of dedicated cycling lanes.
  - Integrated with public transport and urban planning.
- Germany Berlin Mobility Act
  - Mandates wider sidewalks, cycling lanes, and reduced speed zones.
  - Emphasis on Vision Zero aiming for zero traffic deaths.
- European Union
  - Promotes active mobility as a core transport strategy to reduce emissions and enhance liveability.

# Way Forward

- Policy and Governance
  - National-level Active Mobility Policy to standardise and incentivise non-motorised transport.
  - o Integrate active mobility in urban planning, Smart Cities, and AMRUT schemes.
- Infrastructure Development
  - Develop safe, accessible, and shaded pathways.
  - Encourage Public Bicycle Sharing and last-mile solutions.
- Behavioral and Social Change
  - Campaigns to promote cycling culture.
  - o School and workplace-based incentives for non-motorised commuting.
- Legal and Institutional Framework
  - Empower local bodies with funds, functions, and functionaries to implement active mobility projects effectively.

# Conclusion

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• Active mobility is not merely a lifestyle choice but a socio-economic and environmental imperative for India. With the right mix of policy, infrastructure, and behavioural change, India can transform its cities into healthier, inclusive, and climate-resilient urban spaces.

# **UPSC Mains Practice Question**

**Ques** :Examine the challenges faced in promoting active mobility in Indian cities. Suggest measures to overcome them. (250 words)



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# Page 10 : GS 2 : International Relations

On April 4, 2025, South Korea's Constitutional Court upheld the impeachment of President Yoon Suk Yeol with a unanimous 8-0 ruling, citing unconstitutional use of martial law and breach of democratic norms. This marks a significant political event in East Asia, with wide implications for South Korea's domestic stability, democracy, and regional geopolitics.

# What is the current political situation in South Korea?

Why did former President Yoon Suk Yeol declare martial law last year? Did the Corruption Investigation Office try to arrest the former President?

#### Femy Francis

#### The story so far:

n April 4, South Korea's constitutional court upheld the impeachment of former President Yoon Suk Yeol. The Court unanimously (8-0) agreed in favour of the impeachment. Mr. Yoon is the second president to be removed from office in the last eight years. According to the constitution, South Korea will have to elect a new President within 60 days.

What led to his impeachment?

On December 3, 2024, President Yoon announced an emergency and declared

martial law to protect South Korea from

the 17th martial law in the history of

"anti-state forces" and to eliminate "despicable pro-North Koreans." This was

independent South Korea. Six hours later,

the National Assembly convened and 190

members voted in favour of lifting the martial law under Article 77. On December 14, 2024, in its second motion, the Assembly succeeded in voting President Yoon out of office with 204 votes in favour. Of the 300 seats in the National Assembly, the Democratic Party of Korea (DPK) holds 170, while the People's Power Party (PPP), to which Mr. Yoon belongs, has 108 seats.

What happened after impeachment? The declaration of martial law and the impeachment motion ignited public protests across South Korea. It polarised society; thousands protested against the impeachment, supporting Mr. Yoon, while 2,00,000 people gathered outside the parliament, supporting his removal. On January 17, the Corruption Investigation Office requested an arrest warrant against Mr. Yoon, which was approved, leading to Yoon supporters attacking the courthouse. The 11th and final hearing on the martial decree took place on February 25. In his last hearing, he stated that his intention was only to warn the public of anti-state forces.

What does the verdict say? The constitutional court upheld the impeachment of Mr. Yoon and expressed disillusionment with his reasoning. It held that Mr. Yoon did not follow the constitutional mandate, rules, and procedure. While Mr. Yoon argued that he imposed martial law due to the presence of anti-state forces, the verdict contradicted the same and stated that he declared martial law to overcome the National Assembly, which composed mostly of the opposition. The verdict ruled that his actions threatened the military's political neutrality and placed the soldiers serving the nation in direct confrontation with its people.

Furthermore, the verdict argued that the political and economic cost of impeachment is more acceptable than the negative repercussions of a violated constitutional and democratic process. Mr. Yoon's claims of alleged election fraud were also dismissed. Based on all the above, the court upheld the removal of Mr. Yoon and said he "abandoned his duty to uphold the Constitution and gravely betrayed the trust of the sovereign citizens of Korea." Mr. Yoon will now face a series of criminal charges that he was shielded from during his tenure.

#### What is next for South Korea?

The Presidential elections will be held on June 3. As crowds of supporters and protestors clear off the streets, the interim heads and security forces are on high alert to maintain peace and order. The PPP is now in disarray, with Mr.

The PPP is now in disarray, with Mr. Yoon being seen as a wronged leader by many of his supporters. Lee Jae-Myung of the DPK is the most favoured contender for the elections. He had led his party to victory in last year's parliamentary elections. South Korea also faces an external challenge with the U.S. imposing 25% "reciprocal tariffs". Thus, the next President will have to address both political and economic challenges.

Femy Francis is a researcher at Global Politics Area Studies on China, East Asia and the Pacific at the National Institute of Advanced Studies, Bengaluru

#### THE GIST

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On December 3, 2024, President Yoon announced an emergency and declared martial law to protect South Korea from "anti-state forces" and to eliminate "despicable pro-North Koreans."

On December 14, 2024, in its second motion, the Assembly succeeded in voting President Yoon out of his office with 204 votes in favour.

The constitutional court upheld the impeachment of Mr. Yoon and expressed disillusionment with his reasoning.

#### **Background: Why was Yoon impeached?**

- On December 3, 2024, President Yoon declared martial law, citing threats from "anti-state forces" and "pro-North Korean elements."
- This was the 17th martial law in South Korea's post-independence history.
- Within hours, the National Assembly (dominated by the opposition Democratic Party of Korea) voted to lift martial law and initiated impeachment proceedings.
- On December 14, 2024, Yoon was officially impeached by 204 out of 300 members.

#### **Constitutional Court Verdict**

- The Court held that Yoon's martial law declaration violated constitutional norms and threatened military neutrality.
- It ruled that the action was not to protect the nation, but to bypass a legislature dominated by the
  opposition.

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- His claims of election fraud were dismissed as unfounded.
- Verdict: Yoon gravely betrayed the trust of the citizens and abandoned his constitutional duty.

# **Post-Impeachment Developments**

- Public opinion is deeply polarized:
  - ~2,00,000 citizens protested in support of impeachment.
  - Thousands also rallied in support of Yoon.
  - On January 17, the Corruption Investigation Office sought and received an arrest warrant for Yoon.
  - Violent attacks occurred outside the courthouse by pro-Yoon protesters.
  - Yoon now faces multiple criminal charges, no longer protected by presidential immunity.

# **Implications for South Korea**

- 1. Political
  - South Korea will hold Presidential elections on June 3, 2025.
  - Opposition leader Lee Jae-Myung (DPK) is currently the front-runner.
  - The ruling People's Power Party (PPP) is in disarray, caught between moderates and Yoon loyalists.
  - The event marks the second presidential impeachment in 8 years, raising questions about executive accountability and democratic resilience.
- 2. Social
  - The impeachment has divided public opinion, with implications for social cohesion.
  - Rising polarization may lead to long-term ideological rifts in South Korea's democracy.
- 3. Institutional
  - The Constitutional Court and National Assembly have asserted their roles as guardians of democratic order.
  - It strengthens the checks and balances in South Korea's political system.
- 4. Economic & Strategic
  - The country faces economic challenges, including new 25% reciprocal tariffs by the U.S., straining trade.
  - Regional concerns persist amid North Korea tensions and the U.S.-China rivalry.

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## **International Significance**

- South Korea's democratic institutions acted decisively in contrast to rising authoritarian trends globally.
- The development may influence democratic movements in Asia, reinforcing the importance of rule of law and civil oversight.
- Its outcome will be closely watched by regional allies and adversaries alike.

## Conclusion

• The impeachment of Yoon Suk Yeol underscores the strength and volatility of democratic processes in South Korea. It is a textbook case of constitutional checks prevailing over executive overreach. As South Korea prepares for a new leadership, its experience offers valuable lessons for democracies worldwide in maintaining institutional integrity amidst political crises.

## **UPSC Prelims Practice Question**

**Ques**: What led to the impeachment of South Korea's President Yoon Suk Yeol? Discuss the constitutional and political implications of this crisis for South Korean democracy. **(250 words)** 

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# In News : Soyuz Spacecraft

A Soyuz spacecraft, adorned to commemorate the 80th anniversary of World War II's conclusion, departed from Kazakhstan's Baikonur Cosmodrome recently, transporting an American and two Russians to the International Space Station (ISS).

# About Soyuz Spacecraft

- The Soyuz spacecraft is a Russian (formerly Soviet) spacecraft that has been used since the 1960s to transport astronauts and cosmonauts to and from space.
- The Soyuz programme is the longest operational human spacecraft programme in the history of space exploration.
- The first crewed flight into space was on 23 April 1967.
- Soyuz means "union" in Russian.
- Although they were conceived by the Soviet Union at the start of the sixties, the Soyuz spacecraft are still used today, but with important modifications.
- It has served mainly as a crew ferry to and from Earth-orbiting space stations, specifically the Salyut stations, Mir, and the International Space Station (ISS).
- The Soyuz vehicles are launched by Russian rockets of the same name, which have already had over 1680 successful launches in total, including satellites and manned spacecraft.
- Neither the Soyuz rockets nor the Soyuz vehicles are reusable.
- The journey of the Soyuz to the ISS can last six hours or two days depending on the mission profile. The return journey, in contrast, lasts only 3 hours.

# Soyuz Spacecraft Features

- The Soyuz spacecraft weigh 7 tonnes; they measure 7.2 m in length and 2.7 m in diameter.
- With the solar panels open (they remain closed during launch), the Soyuz measures 10.6 m across.
- A Soyuz vehicle can carry up to three astronauts.
- A Soyuz is made up of three modules: the service, the orbital, and the reentry modules.
- The orbital module (the "tip" of the spacecraft) carries the equipment necessary to dock with the International Space Station.
- The service module (the lower part) transports, among other things, telecommunications and altitude control equipment and the coupling of the solar panels.
- The descent module (in the middle) is where the astronauts travel, and it is the only section that reenters the atmosphere the orbital module breaks up during reentry.





# **Page : 08 Editorial Analysis** *The gradual transformation of the Home Ministry*

overnments are often judged by how well they react, but true leadership is about how well they reform. Ministries tend to excel in responding to crises such as managing disasters, controlling conflicts, and restoring law and order. While necessary, this approach only addresses immediate threats without securing long-term solutions. Reforms, on the other hand, shape governance for the future.

When Prime Minister Narendra Modi speaks of 'Reform, Perform, and Transform', he highlights the need for structural reforms rather than temporary fixes. This shift is very much visible in the Ministry of Home Affairs (MHA), which was traditionally seen as a 'Crisis Ministry,' stepping in when riots erupted, insurgencies escalated, or States faced governance failures. Its interventions were often reactive, tackling unrest rather than preventing it through institutional reforms.

#### A new focus

In recent years, the MHA has fundamentally transformed itself, moving from crisis response to building a structured security architecture. It now focuses on strengthening counter-terror laws, modernising agencies, adopting technology and improving intelligence coordination. From legislative overhauls to institutional restructuring, the Ministry is pre-empting threats, ensuring that India's internal security is future ready.

The MHA is the backbone of India's internal security and federal governance. Unlike many countries that divide security and governance, the MHA integrates them, making it a critical pillar of national stability. The Indian Constitution empowers the MHA through Articles 355, 256, and 356, ensuring Centre-State coordination on security matters.

The MHA's growth has largely been shaped by security challenges of the day. The rise of terrorism and insurgency since the 1980s led to increased security spending. Punjab's militancy, Kashmir's terrorism, and Maoist violence required direct intervention, as State police struggled to contain these threats. Many States were slow to modernise their police forces, increasing their reliance on the Central Armed Police Forces or the CAPFs (Assam Rifles; Border Security Force; Central Industrial Security Force, or CISF; Central Reserve Police Force; Indo-Tibetan Border Police; National Security Guard and Sashastra Seema Bal). Reliance on the Rapid Action Force (RAF) of the CRPF for riot control is one example.

Industrial unrest in the 1970s-80s had some role in the creation of the CISF – to manage strikes, particularly in West Bengal and Kerala.



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There has been

an evolution,

crisis-response

structured and

from a

body to a

proactive

institution

Meanwhile, administrative restructuring saw north-east affairs and the Department of Justice separated from the MHA, while Disaster Management and the Narcotics Control Bureau (NCB) were added.

For nearly four decades, India's three major security hotspots, i.e., Kashmir, the North-East, and Central India (Naxal areas) dominated the MHA's priorities, costing thousands of lives. The lives of nearly 36,000 personnel and an equal number of civilians have been lost, with security forces largely turning their focus on these conflict zones.

This focus on insurgency, terrorism and border security has meant that other critical areas such as police modernisation, agency coordination, narcotics control, technology adoption, disaster management and federal governance have received less attention.

Frequent leadership changes have historically affected the Home Ministry's policymaking. Indira Gandhi's third term and Rajiv Gandhi's tenure saw four Home Ministers, leading to instability in internal security reforms. It is only Prime Ministers P.V. Narasimha Rao and Atal Bihari Vajpayee who had a single Home Minister throughout their full tenure. Mr. Modi has maintained stability at the MHA, in a reinforcement of a long-term vision for internal security and governance.

#### Reforms and a shift in responses

On the legislative front, the MHA's earlier responses were largely event-driven. The Terrorist and Disruptive Activities (Prevention) Act, or TADA, was enacted after the Punjab insurgency, the Prevention of Terrorism Act (POTA) after the 2001 Parliament attack, and the National Investigation Agency (NIA) was formed after the 26/11 Mumbai attacks. These laws though critical, were reactive/reactions rather than being a part of a structured security framework. But since 2019, over 27 legislative reforms have established a strong security jurisprudence, shaping law enforcement and national stability. These include transformative changes in terror jurisprudence, Kashmir integration and the criminal justice system.

The idea of whole-of-government now drives a multi-agency approach, where legislative provisions are backed by operational strengthening, budgetary support and outcome-oriented reviews.

India has long faced terror threats, but past responses have often been short-sighted and temporary. The current Home Ministry has strengthened terror jurisprudence – amending the NIA Act and the Unlawful Activities (Prevention) Act, or UAPA, by defining terrorism in Indian criminal law, and aiming to financially choke terror groups. But at the same time, this has been complemented by strengthening and expanding the NIA, creating technology databases, revamping the Multi-Agency Centre (MAC), and promoting a 'duty to share' intelligence culture.

A similar approach is visible in criminal justice system reforms. Three new criminal laws (the Bharatiya Nyaya Sanhita, the Bharatiya Nagarik Suraksha Sanhita and the Bharatiya Sakshya Adhiniyam) have been enacted but their foundation was laid much earlier. There has also been the establishment of the National Forensic Sciences University (NFSU) and full implementation of the Crime and Criminal Tracking Network and Systems (CCTNS) which integrates 17,130 police stations, courts, jails and forensic laboratories. States are now encouraged to separate investigation from forensics, further strengthening the justice system.

In 2019, for the first time, the MHA budget crossed ₹1 lakh crore. The 2025 Budget allocation has surged to ₹2.33 lakh crore, reflecting the government's focus on internal security and modernisation. The expenditure on the Central Paramilitary Forces has also risen, from ₹38,000 crore in 2013-14 to ₹97,000 crore in 2024-25, highlighting the enhanced investment in national security and force modernisation.

#### Impact on the ground

The new approach has led to a significant reduction in violence across Kashmir, the North-East, and Naxal-affected areas. The dilution of Article 370, peace deals in the North-East, and a dual strategy of a filling up of security and development vacuums in Naxal-affected regions have collectively transformed India's internal security landscape. These measures have attempted full integration, political stability, and economic growth in conflict-prone areas. The impact is evident - violence across these three major hotspots has declined by 70%, incidents of stone pelting in Kashmir have declined, insurgency in the North-East has weakened, and Naxal strongholds are witnessing social transformation.

The MHA has evolved from a crisis-response body to a structured, proactive institution. By shifting from reactionary interventions to strategic reforms, it has strengthened India's internal security architecture and built a future-ready governance framework. The MHA is now preempting threats rather than merely responding to them, shaping India's internal security for the years ahead.



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# **Daily News Analysis**

# Paper 02:Governance

UPSC Mains Practice Question:"India's internal security architecture is shifting from reactive to proactive. Analyse with reference to recent reforms by the Ministry of Home Affairs." (250 words).

# **Context** :

- Governance in any democracy is often evaluated by how swiftly and effectively governments respond to crises.
- Yet, genuine leadership is better measured by the ability to anticipate challenges and reform institutions to prevent future upheavals.
- In India, this transformation is particularly evident in the Ministry of Home Affairs (MHA), which has historically been perceived as a reactive body, responding to crises as they emerged.
- However, recent developments indicate a paradigm shift from reaction to reform, marking a new era of governance and internal security.

# A Historical Context of Ministry of Home Affairs

- Traditionally, the MHA has been synonymous with crisis management. Whether in quelling riots, responding to insurgencies, or restoring law and order after disasters, its interventions were typically reactive.
- For decades, India's internal security landscape was defined by violence in Kashmir, insurgency in the North-East, and Naxalite movements in Central India.
- These conflict zones dictated the Ministry's priorities, resulting in the loss of thousands of lives, both civilian and personnel.
- The Central Armed Police Forces (CAPFs) were deployed extensively as many States lacked the capacity to modernise their police forces.
- The MHA's growing responsibilities during these years shaped its identity as a Crisis Ministry.
- This reactive approach extended into legislation. Key security laws such as the Terrorist and Disruptive Activities (Prevention) Act (TADA), the Prevention of Terrorism Act (POTA), and the formation of the National Investigation Agency (NIA) were born out of violent episodes.
- While these legal responses were necessary, they often lacked continuity and long-term vision.
- Frequent changes in leadership during critical political periods also undermined consistent policymaking in internal security.

# A Shift Towards Structural Reform

• The narrative began to shift under the leadership of Prime Minister Narendra Modi, whose emphasis on 'Reform, Perform, and Transform' captured the essence of future-ready governance.

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Daily News Analysis

- This vision translated into a fundamental reorientation of the MHA's objectives, from crisis response to structural preparedness.
- One of the most striking changes has been the Ministry's focus on building a modern security architecture.
- This includes strengthening counter-terror laws, modernising agencies, integrating technology, and improving intelligence coordination.
- From 2019 onwards, over 27 legislative reforms have been introduced, reflecting a deliberate and strategic shift in internal security jurisprudence.
- The amendments to the NIA Act and the Unlawful Activities (Prevention) Act (UAPA) not only defined terrorism more clearly but also sought to financially undermine terror networks.
- These legislative changes have been complemented by institutional reforms such as expanding the NIA, revamping the Multi-Agency Centre (MAC), and fostering a "duty to share" intelligence culture across agencies.

# Key Aspects of MHA and Tangible Impact on the Ground

# • Integration of Governance and Security

- Unlike many global counterparts that separate governance and security, India's MHA integrates the two.
- Empowered by constitutional provisions such as Articles 355, 256, and 356, the MHA plays a crucial role in Centre-State coordination, national stability, and federal governance.
- It has also undergone administrative restructuring, relinquishing responsibilities like North-East affairs and justice while absorbing functions related to disaster management and narcotics control.
- This structural consolidation allows the MHA to function as the backbone of India's internal security.
- Initiatives like the establishment of the National Forensic Sciences University (NFSU), the Crime and Criminal Tracking Network and Systems (CCTNS), and the promotion of separating forensic and investigative functions in State police forces are reformative steps aimed at professionalising law enforcement.
- The introduction of three new criminal laws, the Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita, and Bharatiya Sakshya Adhiniyam, further signify the Ministry's commitment to overhauling India's colonial-era criminal justice system.

# • Budgetary Support and Institutional Modernisation

- The transformation of the MHA has also been backed by unprecedented budgetary support.
- For the first time in 2019, the Ministry's budget crossed ₹1 lakh crore, and by 2025, it surged to ₹2.33 lakh crore.
- Spending on paramilitary forces rose from ₹38,000 crore in 2013-14 to ₹97,000 crore in 2024-25.

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• These investments underscore the government's priority in modernising internal security and equipping forces with the necessary infrastructure.

### • Tangible Impact on the Ground

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- The reformed approach has yielded significant results. Violence in Kashmir, the North-East, and Naxal-affected regions has declined by 70%.
- Stone-pelting incidents in Kashmir have subsided; insurgent activity in the North-East has been curtailed through peace deals; and Naxal-affected areas are now witnessing social development and integration into the national mainstream.
- These outcomes are not merely coincidental but are the result of a dual strategy that combines enhanced security presence with development initiatives.
- The dilution of Article 370, the integration of Kashmir, and socio-political engagements in the North-East and Central India reflect the Ministry's holistic approach.

# Conclusion

- The evolution of the Ministry of Home Affairs from a reactive crisis management body to a reformoriented institution marks a pivotal shift in India's internal governance.
- It illustrates the broader truth that while responses are necessary, it is reforms that secure the future.
- The MHA's new model, grounded in strategic planning, legislative consistency, inter-agency collaboration, and institutional modernisation, offers a blueprint for resilient and future-ready governance.
- By pre-empting rather than merely reacting to threats, the Ministry has emerged as a cornerstone of India's internal stability and federal strength.

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