

# Topics



- Typhoid and Widal test
- Standard time of moon
- Atomic clock
- DPSP and Fundamental rights
- Nagaland - Article 371A and 73rd AA
- Ritacuba Blanco glacier
- Mains



By saurabh Pandey



**THE HINDU**

# Target Mains -2024/25

**Q "Colonisation of moon has multiple objectives"  
"Elaborate.**

**प्रश्न "चंद्रमा के उपनिवेशीकरण के कई उद्देश्य हैं" विस्तार से बताएं।**

**Connect with sir  
9057921649**

**send your answer - Saurabh pandey upsc telegram  
channel**

# How the Widal test clouds India's sense of its typhoid problem

Because of the Widal test's propensity for erroneous results, the actual burden of typhoid in India remains obfuscated. A lack of awareness of the proper time at which to collect a blood sample, along with a lack of standardisation of kits and poor quality control, compound the problem

Yasudhara Rangaswamy  
Parth Sharma

**M**ore often than not, the experience for patients with a fever is to get tested and treated for a typhoid infection. The test is a rapid blood test called the Widal test. The subsequent treatment usually consists of tablets, typically in urban areas, or injections in rural ones.

Typhoid spreads through contaminated food and water and is caused by *Salmonella typhi* and other related bacteria. Also known as enteric fever, it presents with a high fever, stomach pain, weakness, and other symptoms like nausea, vomiting, diarrhoea or constipation, and a rash. Some people, called carriers, may remain symptom-free and shed the bacteria in their stool for several months to years.

These symptoms mimic those of malaria, dengue, influenza, and typhus, to name a few, each with different treatment modalities. If left untreated, typhoid can be life-threatening. Per the World Health Organisation, 50 lakh people are diagnosed worldwide with typhoid every year and 1.1 lakh die of it. A small 2023 study reported the burden to be 576,172 cases per 100,000 child-years (one child year is one child being followed up for one year) in urban areas and 35 per 100,000 child-years in rural Pune.

## How is typhoid fever diagnosed?

The gold standard for diagnosing typhoid – in addition to a detailed medical history and a thorough examination – is to isolate the bacteria from a patient's blood or bone marrow and grow them in the lab. Stool and urine samples can also yield the same but with lower sensitivity.

However, performing culture tests in smaller clinical settings presents practical problems. Cultures are time-consuming and skill- and resource-intensive. Prior antibiotic treatment can also affect the results of cultures – a common issue due to the indiscriminate use of antibiotics in India. Some PCR-based molecular methods are known to be better but are limited by cost, need for specialised infrastructure, skilled personnel, and the inability to retrieve live bacteria for further tests.

Against this backdrop, in India, clinicians use the Widal test extensively to diagnose typhoid in both public and private sectors.

As with other infections, our immune system produces antibodies in the blood against the bacteria, causing enteric fever. The Widal test rapidly detects and quantifies these antibodies. It's a point-of-care test and doesn't need special skills or infrastructure. Developed in the late 1800s by a French physician, it is no longer used in many countries because of its flaws – flaws that are rendered by the scale of the test's use in India to be abusive.

## Why is Widal inappropriate?

A single positive Widal test result doesn't necessarily mean a typhoid infection is present, and a negative report doesn't confirm the disease's absence. To diagnose an active infection, clinicians must test at least two serum samples taken at least 7-14 days apart, so that they may detect a change in concentrations of



The gold standard for diagnosing typhoid is to isolate the bacteria from, say, the blood of a patient and grow them in the lab. Representative image.

TETRAZELIENUNPLASH

the antibodies. But getting two samples is rarely feasible and time-consuming.

Second, in areas with high and continuous typhoid burden, certain levels of antibodies against the bacteria may already be present in the blood. Without knowing the baseline cut-off, it isn't possible to correctly interpret the test. A related issue is that different manufacturers of the test specify different cut-off values in their kits' user manuals.

Third, the reagents used in the Widal test to reveal the presence of various antibodies can cross-react with antibodies produced against infections by other bacteria, viruses or parasites, or even in typhoid vaccinated individuals, leading to false positives. Prior antibiotic therapy can also affect antibody levels and yield a false negative.

Correct diagnosis and appropriate treatment of enteric fever are important because serious complications, like severe intestinal bleeding or perforation, can develop within a few weeks if the disease is mismanaged. False negatives can thus delay diagnosis and lead to fatal outcomes.

## Consequences of the test's use

Because of the Widal test's propensity for erroneous results, the actual burden of typhoid in India remains obfuscated. A lack of awareness of the proper time at which to collect a blood sample, along with a lack of standardisation of kits and poor quality control compound the problem.

Further, a single test costs a couple hundred rupees. Patients in many States



Typhoid spreads through contaminated food and water and is caused by *Salmonella typhi*. Also known as enteric fever, it presents with a high fever, stomach pain, and weakness

have also reported being charged Rs 500 to Rs 4,000 per dose of antibiotic injections by local healthcare providers following a typhoid diagnosis based on a single Widal test. Patients in both urban and rural areas have reported selling assets to receive these antibiotics.

The irrational use of antibiotics is a major cause of antimicrobial resistance (AMR). Bacteria have also been known to be able to transmit AMR between strains and species, and they are not limited by geographical borders. This is why the threat of AMR in one country represents the threat of AMR everywhere. Some strains of *Salmonella* are also resistant to multiple drugs. Continued irrational use of the Widal test, which facilitates unnecessary use of antibiotics, will therefore only make it more and more difficult to control this preventable disease while adding to the financial woes of the patients already suffering.

## What is the alternative?

We need to discover better point-of-care tests that can replace the Widal test. And until they're available, clinicians can consider using best practice heuristics

that provide a rational diagnosis and subsequent treatment options based on the regional data of effective antibiotics available against the bacteria.

These options should be coupled with ensuring adequate and safe food and water and functional sanitation to address the disease's root cause.

Improving access to better diagnostic tests could also address this problem. Doing a blood or bone marrow culture is often not feasible as it requires laboratory infrastructure that most parts of the country lack. Healthcare workers can instead benefit from a 'hub and spoke' model, with sample collection sites at the periphery and district hospitals and medical colleges as the hubs that process samples. The latter facilities could also serve as research centres that generate regional prevalence and susceptibility data.

Next, we need better surveillance to stay on top of the AMR caused by the overuse of the Widal test. The Indian Council for Medical Research publishes an annual report highlighting the typhoid bacteria's resistance patterns. As per the last report, in 2021, the number of samples tested to report susceptibility ranged from one from the 'East' region to 126 samples from the 'North'.

Finally, as typhoid also has symptom-free carriers, constant entomological vigilance and data-sharing are imperative.

Dr. Yasudhara Rangaswamy is a microbiologist and a rural physician. Dr. Parth Sharma is a public health physician, writer, and researcher.

# Typhoid

Typhoid spreads through contaminated food and water and is caused by *Salmonella typhi* and other related bacteria.

## FACTS ABOUT TYPHOID FEVER

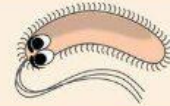
1

Globally, typhoid causes an estimated 21 million cases and 200,000 deaths every year.



2

Typhoid comes from a bacterium called *Salmonella Typhi*.



3

The disease may spread through contaminated food, water, or through contact with an infected individual.



4

An estimated 70% of the people infected from typhoid come from international traveling.



5

About 3 to 5% of people may still carry the typhoid fever bacteria, even if symptoms go away with treatment.



## Principle of Widal test:

- Antibody in the serum produced in the response to *Salmonella* organism, the kit contains antigen suspensions that are killed bacteria and they were stained to enhance the reading of agglutination tests.
- The blue stained antigens are specific to the somatic antigens (O-Ag), while the red stained antigens are specific to the flagella antigens (H-Ag).



Scientist astronaut Thomas B. Dunbar is photographed marking exactly a huge marker at Station 6 base of North Massif on the moon during the Apollo 17 mission in 1972.

## NASA working out a time standard for the moon

Suchitra Karthikeyan

In September 2025, NASA's four-member Artemis crew is scheduled to fly around the moon in preparation for the space agency's mission to land on the moon again.

To support such missions, the White House Office of Science and Technology Policy (OSTP) has directed NASA to establish a Coordinated Lunar Time (LTC) to standardize time-telling on the moon.

The LTC will be the standard to measure lunar operations with the earth's UTC Coordinated Universal Time (UTC).

Being in federal departments like the U.S. Department of Commerce, Defense, State, and Transportation, the White House has set a deadline of December 31, 2026, for NASA and its international partners to deliver a strategy to implement LTC.

The project falls under the current administration's National Cyber Security and Technology Strategy.

The idea for the UTC was formulated in the 1960s. Atomic clocks are known for their extreme accuracy. A weighted

**The White House's Celestial Time Standardisation policy seeks to assign a time standard to each celestial body and its surrounding space environment**

average of hundreds of atomic clocks produces the International Atomic Time (TAI).

Solar time on the other hand is calculated by measuring the earth's rotation relative to the Sun, and is variable in nature.

The UTC was designed to accommodate the difference between solar time and atomic time, and is kept within 0.9 seconds of solar time to follow the earth's rotational variations and within an exact number of seconds of the TAI.

Currently, moon missions follow the time of the country that operates the spacecraft, while clocks on the International Space station run on the UTC. There's currently no standardised time for lunar operations.

The White House's Celestial Time Standardisation policy seeks to assign a time standard to each celestial body and its surrounding space environment,

focusing on the lunar surface and mission operating in lunar space.

It outlines the four features such a standard must possess: "accuracy to the UTC", "scalability beyond the earth-based system", "accuracy for precision navigation and science", and "resilience to loss of contact with the earth".

Unlike the earth, however, the moon will have only one time zone and daylight saving will be unnecessary.

Nation space agencies around the world are currently planning to establish a permanent human presence on the moon.

A system like the LTC could help coordinate their activities with each other and with their respective ground stations as well as, in future, lay the foundation for a dedicated lunar satellite navigation system by 2030.

This system will function similar to how the Global Positioning System does

# Standard time for moon

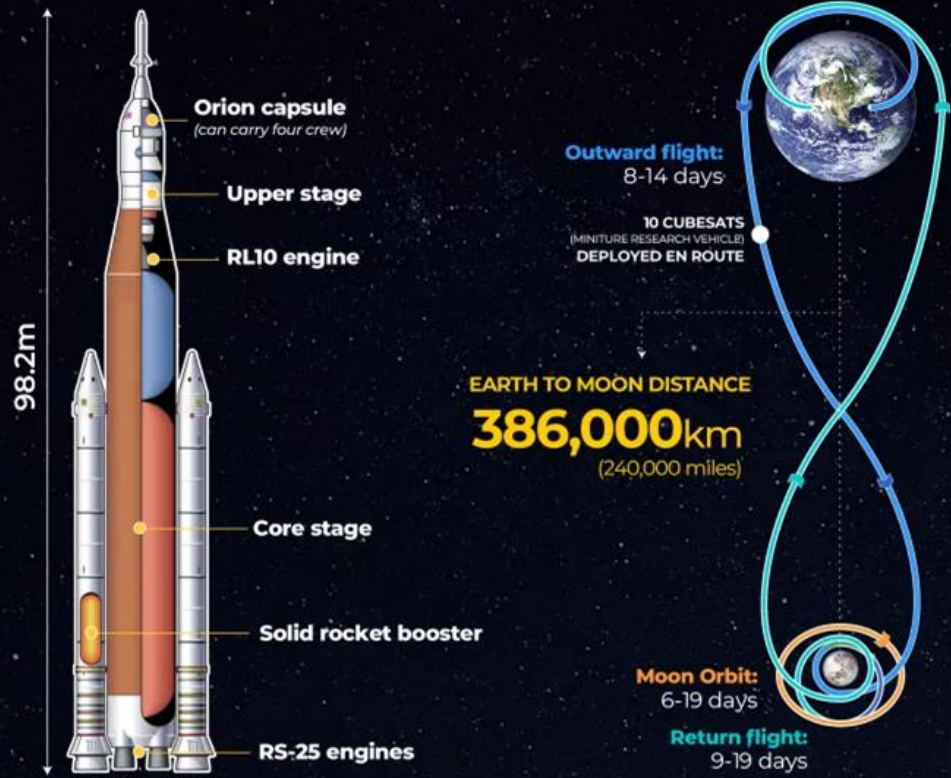
- **In September 2025, NASA's four-member Artemis crew is scheduled to fly around the moon in preparation for the space agency's mission to land on the moon again.**
- **To support such missions, the White House Office of Science and Technology Policy (OSTP) has directed NASA to establish a Coordinated Lunar Time (LTC) to standardise time-telling on the moon.**
- **The LTC will be the standard to measure cislunar operations with the earth's UTC Coordinated Universal Time (UTC).**

- **The idea for the UTC was formulated in the 1960s. Atomic clocks are known for their extreme accuracy.**
- **A weighted average of hundreds of atomic clocks produces the International Atomic Time (TAI).**
- **Solar time on the other hand is calculated by measuring the earth's rotation relative to the Sun, and is variable in nature.**
- **The UTC was designed to accommodate the difference between solar time and atomic time,**



# NASA's Artemis moon mission

Artemis I is the first stage of NASA's new lunar exploration programme, which has the ultimate goal of establishing a long-term presence on the moon's surface.

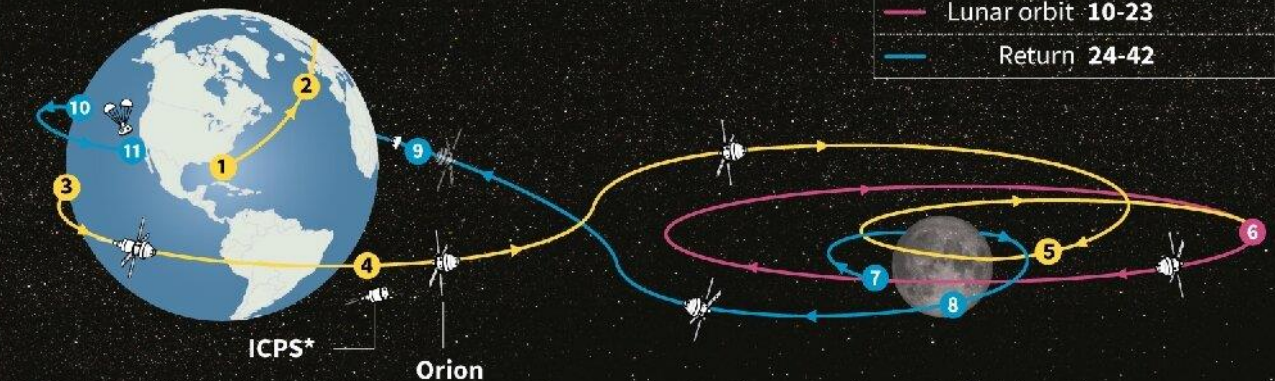


# Artemis I main flight stages

NASA's uncrewed moon mission scheduled to take off August 29

Total duration **42 days**

- Outbound **flight days 2-9**
- Lunar orbit **10-23**
- Return **24-42**



- 1 Launch**  
Kennedy Space Center
- 2 Main engine cutoff, separation** - 8.16 mins after launch
- 3 Earth orbit**  
Systems check, deploy solar arrays



- 4 ICPS\* separation** - 2:06 hrs  
Orion spacecraft on precise trajectory for the moon
- 5 Outbound powered flyby**  
(flight day 6)
- 6 Lunar orbit insertion**  
(day 10)
- 7 Starts return to Earth**  
(day 24)

- 8 Return powered flyby**  
(day 35)
- 9 Crew module separation**
- 10 Earth atmosphere entry**
- 11 Splashdown in Pacific Ocean**



\*Interim Cryogenic Propulsion Stage

Source: NASA

AFP



# Atomic clocks

- **Atoms are composed of a nucleus (consisting of protons and neutrons) surrounded by electrons.**
- **Each element on the periodic table represents an atom with a certain number of protons in its nucleus.**
- **The number of electrons swarming around the nucleus can vary, but they must occupy discrete energy levels, or orbits.**
- **A jolt of energy — in the form of microwaves — can cause an electron to rise to a higher orbit around the nucleus.**
- **The electron must receive exactly the right amount of energy — meaning the microwaves must have a very specific frequency — in order to make this jump.**

- **The energy required to make electrons change orbits is unique in each element and consistent throughout the universe for all atoms of a given element.**
- **For instance, the frequency necessary to make electrons in a carbon atom change energy levels is the same for every carbon atom in the universe.**
- **The Deep Space Atomic Clock uses mercury atoms; a different frequency is necessary to make those electrons change levels, and that frequency will be consistent for all mercury atoms.**



- **“The fact that the energy difference between these orbits is such a precise and stable value is really the key ingredient for atomic clocks,”**
- **“It’s the reason atomic clocks can reach a performance level beyond mechanical clocks.”**

- **Being able to measure this unchangeable frequency in a particular atom offers science a universal, standardized measurement of time.  
("Frequency" refers to the number of waves that pass a particular point in space in a given unit of time.**
- **So, by counting waves, it's possible to measure time.)**



# A chance to settle a constitutional clash



**T**wo questions of seminal importance are at stake in *Property Owners Association vs State of Maharashtra*, in which hearings recently concluded before a nine-judge Bench of the Supreme Court of India. First, what does the term “material resources of the community” used in Article 39(b) of the Constitution denote? Second, are laws made in furtherance of the goal stipulated in Article 39(b) – that is, legislation aimed at securing ownership of resources and distributing them to best subservise the common good – immunised from challenges premised on the fundamental rights to equality and freedom?

The second of these questions brings to sharp focus a clash between Part III of the Constitution, which delineates fundamental rights, and Part IV, which enumerates a set of “Directive Principles of State Policy” (DPSP). The Constitution expressly makes fundamental rights enforceable, while DPSPs are regarded as goals that the state is expected to work towards. The tension between these parts has simmered through India’s history, reaching boiling point in the 1970s when the Constitution was routinely amended, primarily to make certain kinds of legislation exempt from judicial review.

The Supreme Court has from time to time attempted to clarify where the law stands, starting with the verdict of its 13-judge Bench in *Kesavananda Bharati vs State of Kerala* (1973). But the conflict has never really gone away. The uneasy relationship between the two parts has now reared its head again. How the Bench in *Property Owners* answers the reference made to it will have a deep bearing on the Constitution’s future course.

At its inception, the Constitution’s bare text was clear enough. Article 13 declared that any law made in breach of a fundamental right would be void. Article 37, on the other hand, declared that DPSPs will not be “enforceable in any court”. Yet, it said that its precepts would be treated as fundamental in the country’s governance and the State would be obliged to apply them in making laws.

The Court in some of its earliest judgments described the hierarchy. Part III, wrote Chief Justice S.R. Das, in *Mohd. Hanif Qureshi vs State of Bihar* (1958), cannot be reduced to “a mere rope of sand”. He said, “the State should certainly implement the directive principles, but it must do so in such a way that its laws do not take away or abridge the fundamental rights”.

## The introduction of Article 31C

This balance came unstuck when the Constitution was amended in 1971. Through the 25th amendment, Parliament, in a bid to place



**Subrith Parthasarathy**

is an advocate practising at the Madras High Court

The top court has a chance, in *Property Owners Association vs State of Maharashtra*, to resolve the clash between fundamental rights and Directive Principles of State Policy

some of its laws beyond judicial review, introduced a new provision, Article 31C. This provision stipulated that a law giving effect to clauses (b) and (c) of Article 39 – which respectively entreated the state to make legislation towards securing the material resources of the community and towards implementing an economic system that does not result in concentration of wealth – could not be declared void on the ground that it violated the rights conferred by Articles 14 or 19. This meant that the laws so made were exempt from any challenge on grounds that they contravened the right to equality under Article 14 or one of the other of the bundle of freedoms contained in Article 19, including the rights to freedom of expression, and to profession, business, and trade.

Consider the consequences: Parliament might believe that the printing press is a material resource of the community. It might then proceed to nationalise the media. The measure, it might say, is made with a view to securing the common good under Article 39(b). As an upshot of the 25th amendment, this law could neither be challenged on the ground that it did not subservise the common good nor could it be found void on the ground that it infringed our right to free speech.

*Kesavananda* alleviated some of these potentially drastic results. Through a narrow majority of seven to six, with Justice H.R. Khanna’s controlling opinion tipping the balance, the Court found that an amendment which offended the Constitution’s basic structure would be void. Justice Khanna further found that the 25th amendment partially fell foul of this theory. He held that to the extent that it forbade any examination on whether a law made was in furtherance of Articles 39(b) and (c) it transgressed the principle of judicial review. But he upheld the amendment insofar as it protected such laws from challenges grounded on Articles 14 and 19. Oddly though, the six judges who otherwise formed part of the minority, by holding that Parliament had unlimited power to amend the Constitution, did not engage in any independent analysis on the 25th amendment. This meant that while a majority found a part of Article 31C void, *Kesavananda* offers no clear verdict on whether the amendment – insofar as it exempts certain laws from fundamental rights challenges – otherwise breaches the Constitution’s basic features.

## More changes

Despite this, in 1976, through the 42nd amendment, Parliament made further changes to Article 31C. These were even more far-reaching.

They stipulated that a law made in furtherance of any DPSP – and not merely a law made in furtherance of Articles 39(b) and (c) – would enjoy safe harbour.

In *Minerva Mills vs Union of India* (1980), a five-judge Bench declared the amendment unconstitutional. The Court found that while DPSPs provided the ends of governance, fundamental rights constituted the means to such ends. Articles 14, 19 and 21, wrote Chief Justice Y.V. Chandrachud stood between the “heaven of freedom into which Tagore wanted his country to awake and the abyss of unrestricted power”. This amendment, he added, “removed two sides of that golden triangle”.

But what is the precise consequence of this ruling? Does Article 31C now go back to its original form, as contained in the 25th amendment, sans the portions that were struck down by the majority in *Kesavananda*? Or is it in a state of suspended reality, where its validity remains in the balance?

The issue is complicated by another judgment delivered by Justice Y.V. Chandrachud, on behalf of a five-judge Bench in *Waman Rao vs Union of India*. Here, somewhat at odds with his own opinion in *Minerva Mills*, he held that the unamended Article 31C was valid, because it was impossible to conceive how a law made in furtherance of Articles 39(b) and (c) could at all infringe the rights under Articles 14 and 19. This finding is clearly incorrect. As we saw, a law made to purportedly subservise the common good – for example, a nationalising of the printing press – can have grave consequences on our liberty.

In *Property Owners*, the Court will decide on the validity of a law that allows a State government board to acquire complete control over dilapidated buildings, if done with the consent of at least 70% of residents. To resolve this, it will examine whether the law furthers Article 39(b) under which it is purportedly made. But even assuming it answers this in the affirmative, the question still remains: can the statute also be tested on the touchstone of Articles 14 and 19?

## An opportunity

Regardless of the judgments in *Waman Rao* and *Sanjeev Coke vs Bharat Coking Coal* (1982), which followed it, to date there is no conclusive analysis from the Supreme Court on Article 31C, in the form introduced by the 25th amendment, and its adherence to the Constitution’s basic structure. This has meant that fundamental rights and DPSPs have been in perennial conflict. The Court has a chance in *Property Owners* to resolve this clash and, in the process, provide a fillip to the Constitution’s most cherished guarantees.

- **First, what does the term “material resources of the community” used in Article 39(b) of the Constitution denote?**
- **Second, are laws made in furtherance of the goal stipulated in Article 39(b) — that is, legislation aimed at securing ownership of resources and distributing them to best subserve the common good — immunised from challenges premised on the fundamental rights to equality and freedom?**
- **The second of these questions brings to sharp focus a clash between Part III of the Constitution, which delineates fundamental rights, and Part IV, which enumerates a set of “Directive Principles of State Policy” (DPSP).**
- **The Constitution expressly makes fundamental rights enforceable, while DPSPs are regarded as goals that the state is expected to work towards**



- **Article 13 declared that any law made in breach of a fundamental right would be void. Article 37, on the other hand, declared that DPSPs will not be “enforceable in any court.**
- **Through the 25th amendment, Parliament, in a bid to place some of its laws beyond judicial review, introduced a new provision, Article 31C.**
- **This provision stipulated that a law giving effect to clauses (b) and (c) of Article 39 — which respectively entreated the state to make legislation towards securing the material resources of the community and towards implementing an economic system that does not result in concentration of wealth — could not be declared void on the ground that it violated the rights conferred by Articles 14 or 19.**

- **This meant that the laws so made were exempt from any challenge on grounds that they contravened the right to equality under Article 14 or one of the other of the bundle of freedoms contained in Article 19, including the rights to freedom of expression, and to profession, business, and trade.**
- **Kesavananda alleviated some of these potentially drastic results.**
- **Through a narrow majority of seven to six, with Justice H.R. Khanna's controlling opinion tipping the balance, the Court found that an amendment which offended the Constitution's basic structure would be void.**



**Justice Khanna further found that the 25th amendment partially fell afoul of this theory.**

**He held that to the extent that it forbade any examination on whether a law made was in furtherance of Articles 39(b) and (c) it transgressed the principle of judicial review.**

**But he upheld the amendment insofar as it protected such laws from challenges grounded on Articles 14 and 19.**



**42nd amendment, Parliament made further changes to Article 31C. These were even more far-reaching.**

**They stipulated that a law made in furtherance of any DPSP — and not merely a law made in furtherance of Articles 39(b) and (c) — would enjoy safe harbour. In *Minerva Mills vs Union of India* (1980), a five-judge Bench declared the amendment unconstitutional.**

**The Court found that while DPSPs provided the ends of governance, fundamental rights constituted the means to such ends. Articles 14, 19 and 21, wrote Chief Justice Y.V. Chandrachud stood between the “heaven of freedom into which Tagore wanted his country to awake and the abyss of unrestricted power”.**

**This amendment, he added, “removed two sides of that golden triangle”.**

- **justice Y.V. Chandrachud, on behalf of a five-judge Bench in Waman Rao vs Union of India.**
- **Here, somewhat at odds with his own opinion in Minerva Mills, he held that the unamended Article 31C was valid, because it was impossible to conceive how a law made in furtherance of Articles 39(b) and (c) could at all infringe the rights under Articles 14 and 19.**

- **In Property Owners, the Court will decide on the validity of a law that allows a State government board to acquire complete control over dilapidated buildings, if done with the consent of at least 70% of residents.**
- **To resolve this, it will examine whether the law furthers Article 39(b) under which it is purportedly made.**

- **Nagaland has been the only State where 33% of the seats or wards in the ULBs have not been reserved for women as mandated by clause IV of the 74th Amendment to the Constitution of India because of opposition from the Naga hohos (traditional apex tribal bodies) who argued that such a quota would violate the special provisions granted by Article 371A of the Constitution to Nagaland.**

- **The tribal bodies were initially opposed to reservation as Naga women have traditionally not been part of the decision-making bodies while pointing out Article 371A insulates the religious and social practices of the Nagas from any Act of Parliament.**



## *Columbia's missing snow*



A tourist explores the Ritacuba Blanco glacier at Colombia's El Cocuy National Natural Park. The glacier, one of Colombia's highest peaks, should be covered by a blanket of homogeneous snow. But a brutal El Niño phenomenon melted it and exposed gigantic crevasses. AFP

- **the Ritacuba Blanco glacier at Colombia's El Cocuy National Natural Park.**
- **The glacier, one of Colombia's highest peaks, should be covered by a blanket of homogeneous snow.**
- **But a brutal El Niño phenomenon melted it and exposed gigantic crevasses.**

# FOR UPSC 2025 /26 ( download saurabh pandey cse app ) -- Connect with sir 9057921649

## CURRENT AFFAIRS PLUS

★ Featured Course (UPSC 2025 )



### INCLUDES

- PIB Analysis with pdf
- Down to earth
- physics.org
- science daily
- Major newspapers
- With practice test and Mains Mock

starting  
1st may  
2024



BY SAURABH  
PANDEY SIR

Current affairs Plus For UPSC 2025 ( PIB, Down to earth, Yojana , ...

Created by: You(Owner)

## BOOKS SERIES

(FOR UPSC 2025/26 )

### Advance books coverage

- M. Laxmikant -polity
- Spectrum - history
- GC Leong - geography
- Shankar ias environment
- Governance in india By M .laxmikant
- Lexicon book on ethics
- TMH Book on internal security
- Indian society by SC dubey

starting  
1st june  
2024



BY SAURABH  
PANDEY SIR

Books series for UPSC 2025/26

Created by: You(Owner)



# FOR UPSC 2025 /26



## Launched

**1- Current affairs plus - PIB, YOJANA, Down to earth , physics.org , Major newspapers.**

**2- Books series - all advanced books in one course**

## UPCOMING

**1- Mains Mentorship program**

**2- GS-1 ,2,3 and 4**

**3- Mapping**

**4- NCERTS**

**5- Test series for 2025**

**6- essay**

**7- Agriculture optional**

**DOWNLOAD - Saurabh  
pandey cse app**

**+91 90579 21649**



**Courses for 2024 prelims (40 PER OFF TODAY)**

**1- PT 730 - 2YRS CURRENT AFFAIRS**

**2- INTERNATIONAL RELATIONS**

**3- Agriculture for GS**

**4- Advance topics of science tech**

**5- prelims vijay series ( 10 full length testS)**

**Connect with sir  
9057921649**

**Visit - [saurabhpandeyupsc.com](http://saurabhpandeyupsc.com)**



# Saurabh Pandey CSE

Saurabh Pandey CSE

4.8★

76 reviews

1K+

Downloads

E

Everyone

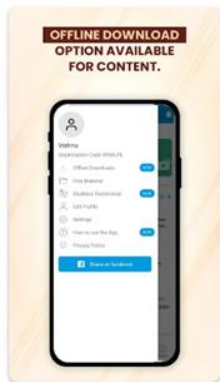


Share



Add to wishlist

You don't have any devices



App support



About this app →

# Target Mains -2024/25

**Q "Colonisation of moon has multiple objectives  
"Elaborate.**

**प्रश्न "चंद्रमा के उपनिवेशीकरण के कई उद्देश्य हैं" विस्तार से  
बताएं।**

**Connect with sir  
9057921649**

**send your answer - Saurabh pandey upsc telegram  
channel**

For pdf

**Telegram - The hindu analysis by saurabh sir**

Link

<https://t.me/gesreporter>

Link in description

