# The Hindu Important News Articles & Editorial For UPSC CSE

## Wednesday, 17 July , 2024

## Edition: International Table of Contents

## Page 03 : Prelims Fact

A synchronised population estimation in southern states revealed a decline in Kerala's elephant population from 1920 to 1793 in 2024, attributed to climate-induced migration.

# Elephant population in Kerala shows a considerable decline

**The Hindu Bureau**
THIRUVANANTHAPURAM

**Officials attribute it to climatic vagaries characterised by extreme dry period and late summer rain**

The recent synchronised population estimation exercise undertaken across southern States has revealed a considerable fall in Kerala's elephant count.

The population of elephants has declined from 1920, recorded during a State-level population assessment last year, to 1793, with a density of 0.19 per sq.km.

The Forest Department attributed the decline to a "natural variation" caused by elephant migration, which was triggered by extreme climate conditions.

Forest Minister A.K. Saseendran released the report of the Elephant Population Estimation in Kerala - 2024 here on Tuesday. The population estimation was conducted in the forests of Karnataka, Kerala, Tamil Nadu, and Andhra Pradesh from May 23 to 25. The exercise was part of the decisions adopted by the Interstate Coordination Committee comprising Karnataka, Kerala and Tamil Nadu to mitigate rising human-elephant conflicts in the region.

An elephant reserve (ER)-level analysis indicated largely stable elephant populations in Periyar and Wayanad ERs, while Wayanad and Anamudi ERs recorded significant reductions in population of 29% and 12% respectively.

The estimated populations in various ERs are: Anamudi - 615 (last year - 696), Nilambur - 198 (171), Periyar - 813 (811), and Wayanad - 178 (249).

**Habitat quality**

The stable numbers in Periyar and Nilambur has been attributed to the undulating topography along the inter-State boundaries that restricts frequent movement. Moreover, the Periyar ER is known to offer a better elephant habitat than the bordering forests in Tamil Nadu.

Forest officials maintain the noticeable drop in population in Wayanad has been influenced by the climatic vagaries characterised by extreme dry period followed by late summer rains.

**About of the news:**

- A recent synchronised elephant population estimation across southern states revealed a decline in Kerala's elephant count from 1920 last year to 1793 in 2024, with a density of 0.19 elephants per sq.km.
- The Forest Department attributed the decline to "natural variation" due to elephant migration caused by extreme climate conditions.
- Forest Minister A.K. Saseendran released the report, based on assessments conducted from May 23 to 25 in Kerala, Karnataka, Tamil Nadu, and Andhra Pradesh.
- The exercise was part of an Interstate Coordination Committee's efforts to mitigate human-elephant conflicts.

- **Elephant Reserve (ER)-**level analysis showed stable populations in Periyar and Nilambur ERs, while Wayanad and Anamudi ERs recorded population reductions of 29% and 12%, respectively.
- **Estimated populations in ERs:** Anamudi – 615 (previously 696), Nilambur – 198 (previously 171), Periyar – 813 (previously 811), and Wayanad – 178 (previously 249).
- Stable numbers in Periyar and Nilambur attributed to undulating topography and better habitat quality.
- The population drop in Wayanad was influenced by extreme dry periods followed by late summer rains.

**Project Elephant**

- Project Elephant was launched by the Government of India's Ministry of Environment and Forests in February 1992.
- It's a scheme aimed at supporting states in managing their wild Asian elephant populations through financial and technical assistance.

**Objectives of Project Elephant Simplified**

- **Conservation Planning:** Create and promote smart plans to protect elephants using science.
- **Combat Illegal Trade:** Stop the illegal buying and selling of elephant tusks and shield elephants from hunters and poachers.
- **Prevent Deaths:** Develop ways to stop unnatural causes of elephant deaths in India.
- **Restore Habitats:** Bring back the natural homes of elephants and the paths they travel.
- **Reduce Conflict:** Lower fights between people and elephants in areas where they both live.
- **Limit Human Activities:** Cut down on people and their animals moving into places where elephants live.
- **Support Research:** Encourage studies on elephant protection and spread awareness about them.
- **Healthcare:** Make sure domestic elephants get the right care to stay healthy and help them breed properly.
- **Community Development:** Help communities living near elephants to grow in a way that's good for both people and elephants.

**Species of Asian Elephants**

- **Asian elephants are categorised into three subspecies**: the Indian, Sumatran, and Sri Lankan.
- As the largest terrestrial mammal in Asia, Asian elephants inhabit grasslands and forests across 13 countries in South and Southeast Asia, adapting to various environments from dry to wet.
- Compared to African savannah elephants, Asian elephant herds are notably smaller in size.
- Within elephant herds, the largest and oldest female, known as the matriarch, assumes leadership and decision-making responsibilities.
- Asian elephants have the longest known gestational period among mammals, lasting up to 680 days (22 months).
- Female elephants typically give birth to calves every four years between the ages of 14 and 45. This interval increases to five years by age 52 and six years by age 60.

- Throughout Asia, elephants hold significant cultural importance and have a long history of close association with humans, evolving into symbolic figures in various cultures.

**Protection Status of Asian Elephants**

- **IUCN Red List:** Endangered.
- **Wildlife (Protection) Act, 1972:** Schedule I.
- **CITES:** Appendix I

## UPSC Prelims PYQ : 2020

**Ques : With reference to Indian elephants, consider the following statements:**

1. The leader of an elephant group is a female.
2. The maximum gestation period can be 22 months.
3. An elephant can normally go on calving till the age of 40 years only.
4. Among the States in India, the highest elephant population is in Kerala.

**Which of the statements given above is/are correct?**

(a) 1 and 2 only
(b) 2 and 4 only
(c) 3 only
(d) 1, 3 and 4 only

**Ans: (a)**

## Page 05 : GS 2 : Indian Polity : Judiciary

President Droupadi Murmu appointed Justices N. Kotiswar Singh and R. Mahadevan to the Supreme Court, restoring its full strength of 34 judges.

- Justice Singh is the first from Manipur, and Justice Mahadevan, from Tamil Nadu's backward community, adds diversity.

# With two new judges, Supreme Court back to its full judicial strength

Justice N. Kotiswar Singh is the first judge in the top court from Manipur; Justice R. Mahadevan, who belongs to a backward community from T.N., will bring diversity to Bench, collegium says

**The Hindu Bureau**
NEW DELHI

President Droupadi Murmu on Tuesday appointed Justices N. Kotiswar Singh and Justice R. Mahadevan as Supreme Court judges.

A five-member Supreme Court Collegium, headed by Chief Justice of India D.Y. Chandrachud, had recommended their names in a resolution on July 11.

The Centre notified the two appointments that would return the top court to its full sanctioned strength of 34 judges.

Justice Singh is the first judge from Manipur to be appointed to the Supreme Court. The State has been witnessing traumatic months of ethnic violence.

**New appointees:** Justices R. Mahadevan and N. Kotiswar Singh have been appointed as the new judges of the Supreme Court. ANI

Justice N. Kotiswar Singh's appointment as a judge of the Supreme Court will provide representation to Northeast India, and in particular, he will be the first from Manipur to be appointed a judge of the Supreme Court, the collegium had highlighted in its resolution. Justice Singh was serving as the Chief Justice of the High Court for Jammu and Kashmir and Ladakh. He was due to retire on February 28, 2025.

The collegium said Justice Mahadevan was "eminently suitable" for appointment as a Supreme Court judge. Justice Mahadevan, who belongs to a backward community from Tamil Nadu, would bring diversity to the Supreme Court Bench, it said.

**Collegium's resolution**

"The Collegium has taken due note of the fact that Mr. Justice R. Mahadevan ranks third in the order of presently serving judges of the Madras High Court including the judges who have been posted as Chief Justices outside the Madras High Court. At this stage, the Collegium has given precedence to the candidature of Mr. Justice R Mahadevan in order to give representation to the backward community," the collegium resolution said.

The two judges replace Justices Aniruddha Bose and A.S. Bopanna, who retired in April and May, respectively.

**Procedure for appointment of Supreme Court Judges:**

- **Constitutional Basis:**
  - The appointment process is outlined in Article 124 of the Indian Constitution.

- **Eligibility Criteria:**
  - As per article 124 [3] Indian Constitution, a person to be appointed as a Supreme Court judge of India Must be a citizen of India.
  - Must have been a judge of a High Court (or multiple High Courts in succession) for at least five years.
  - Alternatively, must have been an advocate of a High Court (or multiple High Courts in succession) for at least ten years.
  - Or, in the opinion of the President, must be a distinguished jurist.
- **Collegium System:**
  - Introduced through judicial decisions, particularly the Second and Third Judges Cases.
  - Comprises the Chief Justice of India (CJI) and the four senior-most judges of the Supreme Court.
  - The Collegium recommends appointments and transfers of judges.
- **Initiation of Process:**
  - **The process is initiated by the CJI.**
  - The CJI seeks recommendations and consults other judges of the Supreme Court and High Courts as deemed necessary.
- **Recommendation:**
  - The Collegium finalises the recommendations.
  - The CJI sends the recommendations to the Law Minister.
- **Executive Approval:**
  - The Law Minister forwards the recommendations to the Prime Minister.
  - The Prime Minister advises the President on the appointments.
- **Presidential Appointment:**
  - The President formally appoints the judges based on the recommendations.
- **Consultation Process:**
  - The President may seek additional information or reconsideration from the Collegium if needed.
  - The Collegium may reiterate its recommendations, which the President usually adheres to.
- **Final Appointment:**
  - After the President's approval, the appointment is notified by the Ministry of Law and Justice.

**Tenure and Removal of Supreme Court Judge:**

- The Constitution has not fixed the tenure of a judge of the Supreme Court. However, it makes the following provisions in this regard:
  - **Age of Retirement:** Supreme Court judges retire at the age of 65.
  - **Duration of Appointment:** Judges serve until they reach the retirement age of 65, unless they resign or are removed earlier.
  - **Resignation:** A judge can resign by writing under their hand addressed to the President of India.
  - **Removal**: Judges can be removed only through a process of impeachment for proved misbehaviour or incapacity.The impeachment process involves a majority of the total membership of each House of Parliament and a two-thirds majority of the members present and voting.

- **Post-Retirement Restrictions:** Retired judges are barred from pleading or acting in any court or before any authority in India.

## UPSC Prelims PYQ : 2021

**Ques : With reference to the Indian judiciary, consider thefollowing statements:**

1. Any retired judge of the Supreme Court of India can be called back to sit and act as a Supreme Court judge by the Chief Justice of India with the prior permission of the President of India.
2. A High Court in India has the power to review its own judgement as the Supreme Court does.

**Which of the statements given above is/are correct?**

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither I nor 2

**Ans: (c)**

## Page : 06 : GS 3 : Science and Technology

India plans a strategic ₹1,151 crore investment over five years, aiming to advance battery technology for electric vehicles.

# '1,151-cr. investment can help India in battery tech. race'

**Jacob Koshy**
NEW DELHI

A strategic investment of ₹1,151 crore over five years could give India a significant international lead in the development of advanced technology necessary to make batteries to electrify the vehicles of tomorrow, a report published on Tuesday said.

The report has been prepared by the Automative Research Association of India (ARAI) and commissioned by the Office of the Principal Scientific Adviser (PSA) to the Government of India.

The "e-mobility R&D Roadmap" breaks down necessary steps to achieve advanced capabilities in developing the technological knowhow to get a lead in battery technology. The four broad areas, or 'buckets', are: energy storage cells, electric vehicle aggregates, materials and recycling and, charging and refuelling. Each bucket is subdivided into projects that have timelines ranging from two to five years. The report includes a projected cost for each of these components and they cumulatively add up to ₹1,151 crore.

Battery technology is key to the electrification of vehicles. GETTY IMAGES/ISTOCKPHOTO

There are estimates of the degree of risk involved in the project ranging from 'nil' to 'high'. The projects also list out technical institutions that could potentially be roped in to deliver on specific components of the project.

"This is not a roadmap that will guarantee India's place as the world's foremost battery-maker in the next five years. Rather it is a strategic roadmap that shows what specifically needs to be done so that we do not lose the race (to be among the leaders in battery technology)," said Karthick Athmanathan, PSA fellow and professor of practice, Indian Institute of Technology, Madras.

India's fleet of electric vehicles is primarily dependent on lithium-battery imports. While there were announcements on large lithium reserves in India, they are yet to be sufficiently exploited though the government has recently paved the private sector to mine for some of these 'rare earth' minerals.

- **Strategic Investment:** A report suggests that a ₹1,151 crore investment over five years can position India as a leader in advanced battery technology for electric vehicles.

- **Report Details:** Prepared by the Automotive Research Association of India (ARAI) and commissioned by the Office of the Principal Scientific Adviser (PSA) to the Government of India.
- **E-mobility R&D Roadmap:** Outlines necessary steps to develop advanced battery technology capabilities, divided into four main areas:
  - Energy Storage Cells
  - Electric Vehicle Aggregates
  - Materials and Recycling
  - Charging and Refuelling
- **Project Timelines:** Each area is subdivided into projects with timelines ranging from two to five years, with a cumulative projected cost of ₹1,151 crore.
- **Purpose:** The roadmap is strategic, aiming to ensure India does not fall behind in the global battery technology race. The roadmap aims to reduce India's dependence on imported lithium batteries, despite known domestic lithium reserves yet to be fully exploited.
- **Current Dependency:** At present India's electric vehicle fleet relies heavily on imported lithium batteries.
- **Domestic Lithium Reserves:** Large lithium reserves have been announced but are yet to be exploited; the government has allowed private sector mining of these minerals..

## UPSC Prelims PYQ : 2016

**Ques: Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India?**

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'.
2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future.
3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

**Select the correct answer using the code given below.**

(a) 1 only
(b) 2 and 3 only
(c) 3 only
(d) 1, 2 and 3

**Ans : c)**

## Page 07 : GS 1 : Geography : Geographical Features & Their Location

The article explores theories on the origin of life, focusing on the Oparin-Haldane hypothesis and Miller-Urey experiment.

- It discusses LUCA as the common ancestor of all life, estimating its origin using the molecular clock.
- Recent studies suggest LUCA emerged around 4.2 billion years ago, predating known fossil evidence of early life.

# Glimpses of LUCA, the life-form from which all other life descended

As mysteries go, a close second to the origin of life is how life-forms started to evolve. Researchers believe bacteria, archaea, and eukarya all originated from the last universal common ancestor. There is no fossil evidence of its existence, but the fact that modern genomes share so many features provides some clues

Sridhar Sivasubbu
Vinod Scaria

The origin of life on earth is one of the world's most enduring mysteries. There are a number of competing theories, but all of them lack conclusive proof. Nonetheless, scientists widely believe a combination of geological, climatic, and chemical processes gave rise to the building blocks of life.

In the 1920s, Alexander Oparin and J. B. S. Haldane independently proposed their origin theories – the first of their kind. In 1924 and 1929, Oparin and Haldane, respectively, suggested the first molecules making up the earliest life forms gradually self-organised from a "primordial soup" in a young earth's tempestuous, prebiotic environment. This idea is today called the Oparin-Haldane hypothesis.

Researchers have also conducted biochemistry experiments and found evidence to support this hypothesis. A particularly famous one was the Miller-Urey experiment in 1952, in which University of Chicago researchers Stanley Miller and Harold Urey showed that in the right conditions, inorganic compounds could give rise to complex organic compounds. Miller and Urey mixed methane, ammonia, and water, and when they applied a strong electric current – like a lightning strike might have – the mixture contained amino acids, the building blocks of proteins. They reported their discovery the very next year in the journal *Science*.

While we have evidence today that the earth's environment then may not have been much like what the experiment presumed to mimic, the very fact that amino acids could be created in a broth of inorganic molecules was groundbreaking.

Other researchers have proposed other theories about the origin of life. A particularly prominent one is that meteorites from space could have brought the building blocks of life, sustained by discoveries on the earth as well as out there. In August 2019, French and Italian scientists reported discovering extra-terrestrial organic material 3.3 billion years old, whereas Japan's Hayabusa 2 mission to the asteroid Ryugu indicated the presence of more than 20 amino acids there.

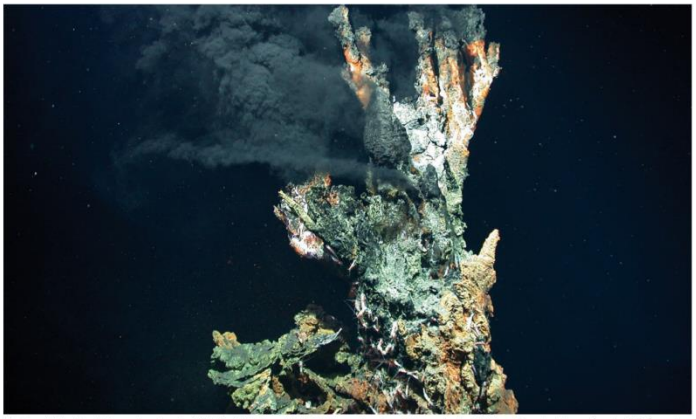
### LUCA and the molecular clock

As mysteries go, a close second to the origin of life is how life-forms evolved to produce the rich diversity we see around us today. Researchers believe all three branches of life – bacteria, archaea, and eukarya – originated from a single cell, called the last universal common ancestor (LUCA). There is no fossil evidence to support the existence of LUCA, but the fact that modern genomes share so many features provides some insights. An important concept that allows scientists to reconstruct the 'tree of life' is the theory of the molecular clock. Molecular biologist Emile Zuckerkandl and biochemist Linus Pauling proposed it in the 1960s, and biologist Motoo Kimura subsequently improved it.

According to a simplified version of the theory, the rate at which mutations are added or removed from a population's genome is proportional to the rate of acquiring new mutations, which is constant. Later studies also found that the mutation rate varies between species. Using these two facts, researchers developed a way to estimate how much time could have passed between two evolutionary events.

To calibrate the molecular clock to a particular rate of mutations, researchers establish links between a genome and known events, such as the 'date' on which the first mammal evolved or the age of certain fossils. These links act like temporal benchmarks.

Thanks to the large number of genome sequences and fossils of various organisms, as well as the computing power available today, researchers routinely use the molecular clock to understand the evolution of various life-forms on earth through time.



The 'Candelabra' hydrothermal vent on the Mid-Atlantic Ridge, which is 3.3 km underwater. In the past, scientists have found evidence of ancient life forms in the precipitates around such vents. MARUM (CC BY 4.0)

> Scientists widely believe a combination of geological, climatic, and chemical processes gave rise to the building blocks of life

### Which is older: LUCA or fossils?

In a recent paper in the journal *Nature Ecology and Evolution*, researchers at the University of Bristol and Exeter in the U.K. constructed a phylogenetic tree of 350 bacterial and 350 archaeal genomes. Then, using a molecular clock, the team estimated when LUCA could have originated: around 4.2 billion years ago, just 300 million years after the earth itself formed.

The team also reported that LUCA may have had a small genome, of some 2.5 million bases and encoding around 2,600 proteins, all just enough to help it survive in a unique environmental niche. The team also suggested the metabolites produced by LUCA – compounds produced as a result of its metabolism – could have created a 'secondary' ecosystem in which other microbes could have emerged.

Importantly, the origin of LUCA by 4.2 billion years significantly predates previous suggestions about the origin of life on earth. For context, researchers have found fossil records of the earliest life-forms in the Pilbara Craton in western Australia, one of the few places on the planet where archaean rocks are exposed aboveground and accessible. Studies of these fossils have suggested that life that lived on the rocks emerged around 3.4 billion years ago. The current study, on the other hand, pushes this date back by almost a billion years, almost on the heels of the birth of our planet itself.

The researchers also found some reasons to believe LUCA may have had genes responsible for immunity, suggesting it had to fight off viruses.

Taken together, the findings are tremendously significant, not just for understanding how life emerged and evolved on the earth: they also speak to our ability to look for similar forms of life across the universe. The insights into evolution they provide will also give a significant fillip to human ambitions to engineer synthetic organisms for various industrial, chemical, and biological processes on the earth, as well as to create or moderate ecosystems on other planets in the future.

*(The authors are senior consultants at Vishwanath Cancer Care Foundation, and adjunct professors at IIT Kanpur and Dr. D.Y. Patil Vidyapeeth, and distinguished visitors at Ashoka University.)*

### THE GIST

In 1952 researchers applied a strong electric current to a mixture of methane, ammonia, and water. This reaction formed amino acids, the building blocks of proteins

In 2019, scientists reported discovering extra-terrestrial organic material 3.3 billion years old. Japan's Hayabusa 2 mission to the asteroid Ryugu indicated the presence of more than 20 amino acids

Researchers recently constructed a phylogenetic tree of 350 bacterial and 350 archaeal genomes. Then, using a molecular clock, they estimated that LUCA possibly originated around 4.2 billion years ago, 300 million years after the earth formed

## About the Last Universal Common Ancestor (LUCA)

- Researchers believe that all life forms— the Bacteria, the Archaea, and the Eukarya —originated from a single cell known as the last universal common ancestor (LUCA).
- It is suggested to have been a "cellular organism that had a lipid bilayer and used DNA, RNA, and protein".

- There is a lack of clarity about direct fossil evidence of LUCA.
- However, the shared features of modern genomes provide significant insights into this ancient ancestor.

**LUCA and the Molecular Clock:**

- The molecular clock theory was proposed by molecular biologist Emile Zuckerkandl and biochemist Linus Pauling in the 1960s and later refined by biologist Motoo Kimura.
- The theory allows scientists to reconstruct the evolutionary timeline.
- According to the theory, the rate at which mutations are added or removed from a population's genome is proportional to the rate of acquiring new mutations, which is constant.
- By calibrating the molecular clock with known events, such as the emergence of the first mammals or the age of certain fossils, researchers can estimate the time between evolutionary events.

**Recent Research Findings on LUCA's Age and Genome**

- Researchers at the University of Bristol and Exeter estimate that LUCA originated around 4.2 billion years ago, nearly 1 billion years earlier than previously thought.
  - They obtained evidence from the 3.3 km deep Candelabra' hydrothermal vent on the Mid-Atlantic Ridge.
- LUCA had a small genome of about 2.5 million bases encoding 2,600 proteins, sufficient for survival in a unique niche.
- Its metabolites may have created a secondary ecosystem for other microbes.
- The presence of immunity genes in LUCA suggests it had to defend against viruses.

**Evidence Verification using Miller-Urey Experiment**

- In 1952, Stanley Miller and Harold Urey conducted an experiment at the University of Chicago, simulating lightning strikes on a mixture of methane, ammonia, and water, which resulted in the formation of amino acids.
- This demonstrated that complex organic compounds could arise from inorganic compounds under the right conditions.

**Which is older: LUCA or fossils?**

- LUCA's estimated origin at 4.2 billion years predates the earliest fossil records by almost 1 billion years.
- Fossil records from the Pilbara Craton in Australia suggest life emerged around 3.4 billion years ago, but the study pushes this date back.

## UPSC Prelims PYQ : 2012

**Ques : Which one of the following sets of elements was primarily responsible for the origin of life on the Earth?**

(a) Hydrogen, Oxygen, Sodium
(b) Carbon, Hydrogen, Nitrogen
(c) Oxygen, Calcium, Phosphorus
(d) Carbon, Hydrogen, Potassium

**Ans : b)**

# In News : Civil Servants and Integrity of Services'

The Centre has set up a single-member committee under the Department of Personnel and Training (DoPT) to review the documents submitted by IAS probationer Puja Khedkar, who secured a rank of 821 in the 2022 UPSC Civil Services Examination.

- Khedkar was allotted the IAS under the OBC and Physically Handicapped quotas. Questions have been raised about her appointment under these categories.
- It should be noted that Khedkar's actions as a civil servant are governed primarily by two rules: the All-India Services (Conduct) Rules, 1968, and the Indian Administrative Service (Probation) Rules, 1954.


## Rules for probationers

### Rules

- There is an additional set of rules that govern the conduct of officers during their probation period, which lasts for at least two years after selection to the services.
- IAS officers, in addition, are governed by the IAS (Probation) Rules during their probation period.

### Probation Conditions

- Officers undergo training at the Lal Bahadur Shastri National Academy of Administration (LBSNAA) in Mussoorie.
- At the end of two years, they must pass an examination to be confirmed in their service.

### Salary and Allowances

- Probationers receive a fixed salary and travel allowance but do not have entitlements like an official car, official accommodation, or an official chamber with staff.

**Probationer Discharge**

- Rule 12 outlines circumstances under which probationers can be discharged, such as being found ineligible or unsuitable for the service by the central government, neglecting duties, or lacking essential qualities needed for the service.

**Enquiry Process**

- If disciplinary action is initiated against a probationer, a summary enquiry is conducted by a committee appointed by the Department of Personnel and Training (DoPT).
- The committee submits its report within two weeks to inform decisions regarding the.

## Rules on 'integrity of services'

**Rules**

- All IAS, Indian Police Service (IPS) and Indian Forest Service (IFoS) officers are governed by the All-India Services (Conduct) Rules from the time they join their respective services, and begin their probation period.

**Integrity and Devotion to Duty**

- According to Rule 3(1), officers must uphold absolute integrity and dedication to their duties at all times.

**Gifts and Benefits**

- Rule 11(1) regulates the gifts and benefits received by a civil servant.
- Acceptance of gifts is limited to those from near relatives, with strict reporting requirements for any gift exceeding Rs 25,000 to prevent influence on their duties.
- This rule also prohibits officers from engaging in any trade or business to maintain impartiality and prevent conflicts of interest.

**Unbecoming of an officer**

- Rule 4(1) is more specific about what is unbecoming.
- It states that officers must not use their position or influence to secure employment for any member of his family with any private undertaking or NGO.

**Property details**

- Rule 13 of the All-India Services (Conduct) Rules mandates that officers must annually submit property returns.
- These returns must detail all immovable properties that officers or their family members own, inherit, acquire, or hold through lease or mortgage.

- This requirement ensures transparency and prevents illicit accumulation of wealth among civil servants.

**Sub-rules added in 2014**

- In 2014, the government added a few sub-rules.
- This included that officers should maintain:
  - high ethical standards, integrity and honesty;
  - political neutrality;
  - accountability and transparency;
  - responsiveness to the public, particularly to the weaker sections;
  - courtesy and good behaviour with the public.

## UPSC Mains PYQ : 2021

**Ques :** Identify ten essential values that are needed to be an effective public servant. Describe the ways and means to prevent non-ethical behavior in the public servants.

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1878
Daily News Analysis



# Centralised examinations have not aced the test

**Vrinda Sarup**
former Secretary, Education, Government of India

**K. Sujatha Rao**
former Secretary, Health, Government of India

In 2017, the Government of India established the National Testing Agency (NTA) to conduct entrance examinations for professional courses. Envisioned to conduct multiple choice question (MCQ)-type of examinations in electronic mode, the NTA was to have specialists in the science of testing to set up appropriate question banks and also evaluator frameworks and organisational expertise. The NTA, that conducts more than 15 entrance examinations for various higher education institutions including the Common University Entrance Test (CUET) for central university admissions and the post-graduate admissions in medical and University Grants Commission (UGC) courses, is a lean and thin organisation, with most of the work outsourced. It is headed by a chairman and an Indian Administrative Service officer working as the chief executive officer, neither of whom have the required competence to build an institution as contemplated.

**Pertinent questions**

Contrary to the grand vision, the NTA conducts examinations in pen to paper mode that provides huge scope for malpractice – from the setting of the paper, to its printing, distribution and final delivery to a large number of examination centres – 4,750 for the National Eligibility cum Entrance Test (Undergraduate), or NEET-UG, for admission in undergraduate medical courses. The fiasco this year in the conduct of the NEET-UG has created dismay and a complete loss of trust in the NTA's ability or willingness to conduct a fair examination. The question is could this have been avoided? And what needs to be done to ensure the integrity of the examination system in India?

NEET, which is conducted by the NTA, was conceived with the best intentions but has gone hopelessly wrong due to faulty and incompetent implementation. The idea was to standardise the quality of students aspiring to become doctors, which is an important concern given the varying standards of school boards across India. Its flawed implementation, the widespread leakage of question papers, the arbitrary manner of awarding grace marks, conducting a re-examination for just a handful of students, and now tinkering with the ranking have all made the whole process murky.

Over a month has passed. Instead of ordering a re-examination – that would have been the most straightforward and fairest way of handling the issue – all this tampering with the results has only deepened distrust and raised difficult questions. How is the government convinced that the leaks are localised, only to Patna and Godhra, when the arrests of wrongdoers are being reported from more than four to five States? Or, is it that the government is uncertain of the NTA's capability to conduct a flawless re-examination of NEET, giving rise to even more serious concern?

The Supreme Court of India has stepped in and is hearing petitions. The government has said that it intends starting the counselling process (the final stage for admissions), from the third week of July. This is an examination where rank is critical. Those with higher ranks get admission to government institutions, getting quality education at subsidised rates. The fact that the cut-off percentages in previous years were in the abysmal range of 19% to 22% indicates how several students with a decent rank were unable to get admission due to high capitation fees, forcing the cut-off percentage to be reduced. This is shameful and needs reflection.

In the wake of widespread fears of the integrity of other national tests having been compromised and after the below par functioning of the NTA, the government has now constituted a seven-member high-level committee of experts chaired by the former chairman of the Indian Space Research Organisation, K. Radhakrishnan. Its terms of reference are: reforming the mechanism of the examination process to forestall any possible breach, and based on a review of the standard operating procedures, suggesting monitoring mechanisms; improving data security protocols to enhance the robustness of the examination; making recommendations on the structure and the functioning of the NTA; defining the roles and the responsibilities of functionaries at all levels, and establishing a responsive grievance redress mechanism. These are basic issues that ought to have been examined and addressed when the NTA was formed. Clearly, the governance mechanism seems to have collapsed somewhere along the way.

**Decentralisation as a workable option**

Reports of widespread cheating and leakages in examinations conducted at the national levels force us to reconsider and review the centralised testing mechanism for higher education institutions. There are options. Why cannot the central government restrict testing for entry to its own institutions and decentralise, where States fill up their own seats on the basis of entrance examinations? This could be based on a standard template that can be prepared by the central government to ensure that the requisite standards are maintained for the test and the evaluator framework.

Testing bodies could be restructured to incorporate domain experts, testing experts and also IT measures of not just testing tools but also cyber safety and multiple types of safeguards that are necessary to conduct large-scale exams in a fair manner and where every decimal counts for a student.

Of all the options listed, the case for decentralisation seems strong and appropriate for our present-day conditions. The examinations that 24 lakh students appear for to fill one lakh seats are high stake tests, bitterly contested and fraught with risk.

Strong vested interests and criminal elements would want to do everything to undermine streamlined systems of merit-based entrance to professional education or to coveted universities and colleges. This would include selling examination papers for financial gain. Decentralising the examination processes to States and different governing entities could reduce the element of risk. The central government's role could be to mandate the standard to be followed for higher education institutions.

**Rejuvenate the schooling system**

While the integrity of a national or State-level examination is in the spotlight, what has certainly been missed out in the public discourse is the gradual ruination of the school system which is responsible for creating the citizens of tomorrow. With the emergence of national-level common entrance examinations for every professional course or university course, school-leaving examinations have become redundant and there are now 'dummy' schools. Instead, coaching centres have mushroomed with the sole purpose of preparing students for these national examinations.

The growth of the coaching industry has damaged the schooling system insidiously and relentlessly. This trend has to be stemmed and the value of schools restored by introducing a percentage of school-leaving marks to the final score of the candidates' entrance examination. This was factored in the entrance examination to the Indian Institutes of Technology some years ago but was abandoned without debate. If we cannot safeguard merit, based on good school education, our schooling system will decay even further. Standards of academic competency, hard work and good values that are built up at the school level can never be achieved at the time of higher studies, when a student is much older and is poised for the world of work. This is an issue that needs to be addressed urgently.

While a review of the centralised testing mechanism for higher education institutions is necessary, what has been missed out is the damage to the school system

**GS Paper 02 : Governance – Government Policies**

**Practice Question Discuss the challenges and implications of centralised testing mechanisms in India's higher education system, with a focus on recent controversies surrounding the National Testing Agency (NTA).**

**(150 w/10m)**

**Context**

- The National Testing Agency (NTA) was established in 2017 by the Indian government to conduct electronic mode entrance examinations for professional courses.
- Despite its mandate, operational challenges, including recent controversies over examination integrity, have sparked calls for reforms and decentralised testing mechanisms across India's educational landscape**.**

**What is the National Testing Agency?**

- **About:**
  - The National Testing Agency (NTA) was established as a Society registered under the Indian Societies Registration Act, of 1860.
  - It is an autonomous and self-sustained testing organisation to conduct entrance examinations for admission in higher educational institutions.
- **Governance:**
  - NTA is chaired by an eminent educationist appointed by the Ministry of Human Resource Development.
  - The Chief Executive Officer (CEO) will be the Director-General to be appointed by the Government.
  - There will be a Board of Governors comprising members from user institutions.
- **Functions:**
  - To identify partner institutions with adequate infrastructure from the existing schools and higher education institutions that would facilitate the conduct of online examinations without adversely impacting their academic routine.

- To create a question bank for all subjects using modern techniques.
- To establish a strong R&D culture as well as a pool of experts in different aspects of testing.
- To collaborate with international organisations like ETS (Educational Testing Services).
- To undertake any other examination that is entrusted to it by the Ministries/Departments of Government of India/State Governments.

- The NTA conducts over 15 entrance examinations, including the Common University Entrance Test (CUET) and NEET-UG, but most operations are outsourced due to its lean structure.
- It lacks the necessary internal expertise in testing methodologies and organisational capabilities to meet its intended goals, leading to operational shortcomings and a lack of trust.

**Core Issues with Practices**

- Contrary to its electronic mode vision, the NTA conducts many exams in pen-and-paper format, increasing the risk of malpractice from question setting to distribution across 4,750 examination centres.
- Recent incidents, such as the NEET-UG fiasco involving leaked papers and irregular grace mark allocations, have severely undermined public confidence in the NTA's fairness and competence.

**Governance and Oversight Concerns**

- The leadership, comprising a chairman and a chief executive officer from the Indian Administrative Service (IAS), lacks specialised competence in building and managing an institution dedicated to advanced testing methodologies.

**Steps Taken and Current Challenges**

- Following the NEET-UG controversy, a high-level committee chaired by a former Indian Space Research Organisation (ISRO) chairman has been constituted to review and reform examination processes.
- The committee's mandate includes improving data security, enhancing examination robustness, and defining roles and responsibilities within the NTA.

**Proposal for Decentralization of Examination Processes**

- Given the failures of centralised testing mechanisms, there is a growing call to decentralise the process, allowing states to conduct their own entrance exams while maintaining standardised templates set by the central government.

- This approach aims to reduce risks associated with centralised testing, such as widespread cheating and paper leaks, by incorporating domain experts and implementing stringent IT measures.

**Impact on Schooling System and Coaching Culture**

- The dominance of national-level entrance exams has diminished the relevance of school-leaving examinations, leading to a proliferation of coaching centres focused solely on exam preparation.
- This trend has eroded the quality and integrity of the school education system, emphasising rote learning and exam-oriented preparation over holistic learning and character building.

**Urgent Need for Reforms and Conclusion**

- To address these challenges, there is a pressing need to rejuvenate the school education system by reintegrating school-leaving marks into entrance exam criteria, as previously done for entrance exams to Indian Institutes of Technology (IITs).
- Failure to safeguard merit based on solid school education foundations will perpetuate the decline of educational standards and values critical for future academic and professional success.

**Conclusion**

- While the NTA was established with noble intentions to streamline entrance exams and ensure fair access to professional education, its operational failures have highlighted systemic issues in governance, testing integrity, and the broader impact on India's education system.
- Moving forward, robust reforms, including decentralisation and revitalization of school education, are crucial to restoring trust and ensuring equitable access to quality higher education in India

**National Medical Commission (NMC)**

- NMC is the apex regulatory body for medical education and practice in India.
- NMC was established in 2020 by the National Medical Commission Act, 2019, replacing the Medical Council of India (MCI).
- NMC consists of four autonomous boards: the Undergraduate Medical Education Board, the Post-Graduate Medical Education Board, the Medical Assessment and Rating Board, and the Ethics and Medical Registration Board.
- NMC also has a Medical Advisory Council, which advises the commission on matters related to medical education and practice.

- NMC also regulates the standards and quality of medical education and training, the registration and ethics of medical practitioners, and the assessment and rating of medical institutions.
- NMC has also achieved the prestigious World Federation for Medical Education (WFME) recognition, which means that the medical degrees awarded by the NMC are recognized globally.

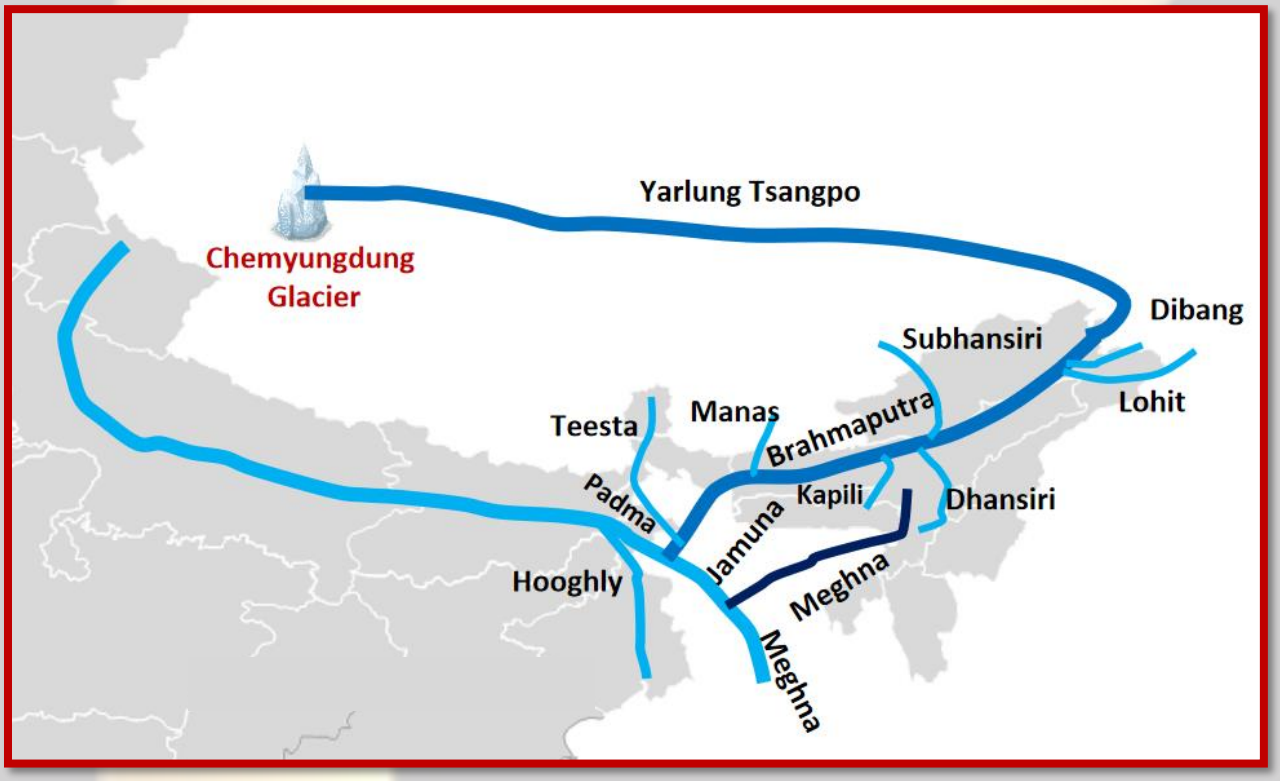
**NEET:**

- The NEET (National Eligibility cum Entrance Test) is an entrance examination for students who wish to pursue undergraduate medical courses (MBBS/BDS) and postgraduate courses (MD/MS) in government or private medical colleges.
- Objective: To standardize the admission process for medical and dental courses across India, ensuring a uniform evaluation of candidates' eligibility.
- The NTA conducts NEET on behalf of the Ministry of Education.

# Mapping : The Brahmaputra River System

| | |
|---|---|
| **Origin** | Kailash Range of Tibet |
| **Length** | 2900 km (total) |
| **Other names** | 1. Yarlung Tsangpo (Tibetan name)<br>2. Dihang (in Arunachal Pradesh)<br>3. Brahmaputra (in Assam)<br>4. Jamuna (in Bangladesh) |
| **Catchment Area** | – Total: 12 lakh km2<br>– India: 3.21 lakh km2 |
| **Tributaries** | **Left Side Tributaries: Dibang**, **Lohit**, Dhansiri, **Kelong**, Kapili , Dikhu<br><br>**Right Side Tributaries: Kameng**, Manas, Raidak, **Subansiri** , **Teesta** |

## Flow of Brahmaputra




### Flow in Tibet

- Brahmaputra River originates in **Chemyungdung Glacier** in the Kailash Range of Tibet.
- It traverses eastward longitudinally for 1,200 km in southern Tibet (known as Yarlung Tsangpo in Tibet). In Tibet, it receives water from tributaries (like Raga Tsangpo, Ngangchu, Kyichu etc.)

## Flow in India

- After flowing for 1800 km eastward, Brahmaputra suddenly turns and emerges as a turbulent river after carving out a deep gorge (Dihang Gorge) in the Central Himalayas near Namcha Barwa. Here the

river is known as Dihang or Siang. The river enters India in the west of Sadiya Town of Arunachal Pradesh.

- From **Sadiya in Arunachal Pradesh to Dhubri in Assam**, the river is navigable, and the Government of India has designated it as **National Waterway 2**.
- Here also, a large number of tributaries join the Brahmaputra. These include:

| | |
|---|---|
| **Right Bank Tributaries** | **Kameng**, Manas, Raidak, **Subansiri** , **Teesta** |
| **Left Bank Tributaries** | **Dibang**, **Lohit**, Dhansiri, **Kelong**, Kapili , Dikhu |

- **Note**: Before the terrible **floods of 1787, the Teesta was a tributary of the Ganga**; however, it changed its path to join the Brahmaputra by heading east.
- Most of the Brahmaputra's passage through Assam has a **braided course.** The river keeps on shifting its channel constantly. It forms many islands, the most important of which is **Majauli** (the largest river island in Asia, having 144 villages on it)
- Due to concentrated rainfall during the monsoon months, the river has to carry enormous amounts of water and silt, resulting in disastrous floods in the rainy season. Hence, it is also called a 'River of Sorrow.'

## Flow in Bangladesh

- At Dhubri, the river takes a southward turn and enters Bangladesh.
- It flows for 270 km under the name **Jamuna** and joins the Ganga. The united stream is known as **Padma**.
- Later, **Meghna** joins Padma on the left bank (Meghna originated in the mountainous region of Assam). The united stream of Padma and Meghna is known as Meghna, which forms a broad **estuary** before entering the Bay of Bengal.

## Teesta River

- **Origin: Kangse Glacier, Sikkim**
- Teesta River enters Bangladesh after passing through West Bengal & meets Brahmaputra before entering the Bay of Bengal.
- It is the fourth largest river in Bangladesh after Brahmaputra, Ganga & Meghna.
- **India & Bangladesh have a Water Dispute** over sharing of the Teesta waters. After various rounds of dialogue, no consensus has been reached. It is the major source of irritant between Indo-Bangla Relations, which otherwise is a valuable ally of India.

## Barak River

- Barak River rises in **Manipur**, then passes through **Mizoram & Assam.**
- The famous city of Silchar (Assam) is situated on it. After Silchar, it flows for about 30-odd kilometres & near Badarpur, it divides itself into the **Surma and Kushiyara rivers** and enters Bangladesh. **Surma River then merges with the Meghna River.**
- It is declared as **National Waterway-6** by Govt. of India.
- India has also proposed **the Tipaimukh Dam**, which has become a source of conflict between India and Bangladesh.