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**17 July, 2024**

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 **SAMYAK IAS, NEAR RIDDHI-SIDDHI, JAIPUR**

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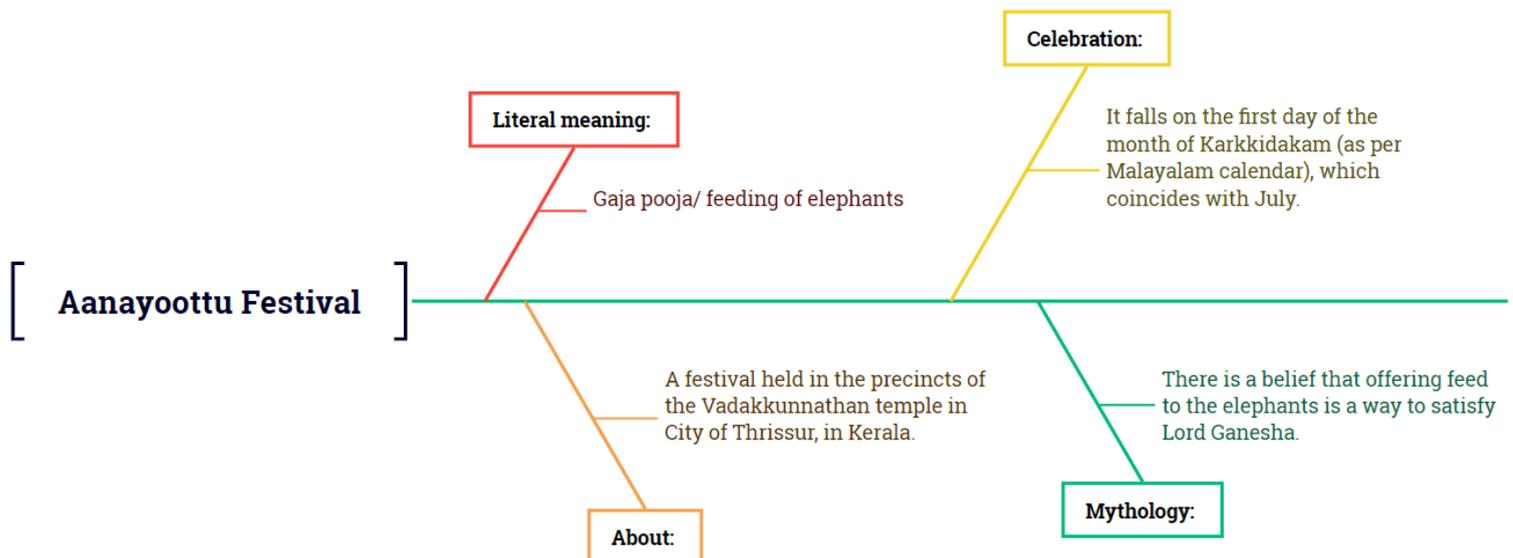
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## Art & Culture

### 1. Aanayoottu Festival at the Sree Vadakkunnathan Temple - The Hindu



#### Vadakkunnathan Temple

- **About:** An ancient Hindu temple of Lord Shiva at Thrissur, Kerala.
- **Architecture:** It has monumental towers on all four sides and also a kuttambalam.
- **Significance:** The temple, along with the mural paintings, has been declared as a National Monument under the AMASR (Ancient Monuments and Archaeological Sites and Remains Act 1958).
- **Mythology:** It is believed to be the first temple built by Parasurama, the sixth avatar of Vishnu.



## Geography

### 2. Mount Etna volcano - The Hindu

- **About:** A stratovolcano, which means it is composed of layers of lava, ash, and rocks that have accumulated over thousands of years of eruptions.
- **Location:** East coast of Sicily, an island in Mediterranean Sea that belongs to Italy.
- **Dimensions:** It covers an area of about 1,200 square kilometres.
- **An active volcano:** It has been erupting almost continuously since 1500 BC, making it one of the most active volcanoes in the world.



#### **Stratovolcano/ Composite volcano**

- **About:** This volcano has a conical shape formed by layers of volcanic material deposited during successive volcanic eruptions.
- **Hieght:** These volcanoes tend to slope gently at the base but rise quickly near the summit to form tall mountain peaks.
- **Location:** They are typically found above subduction zones, and they are often part of volcanically active regions, like Pacific Ring of Fire.

## Polity

### 3. Karnataka Bill seeks to create 50% quota for local residents in management posts - The Hindu

#### **Context**

The Karnataka Cabinet has cleared a Bill mandating that industries, factories and other establishments appoint local candidates in 50% of management positions and 75% in non-management positions.

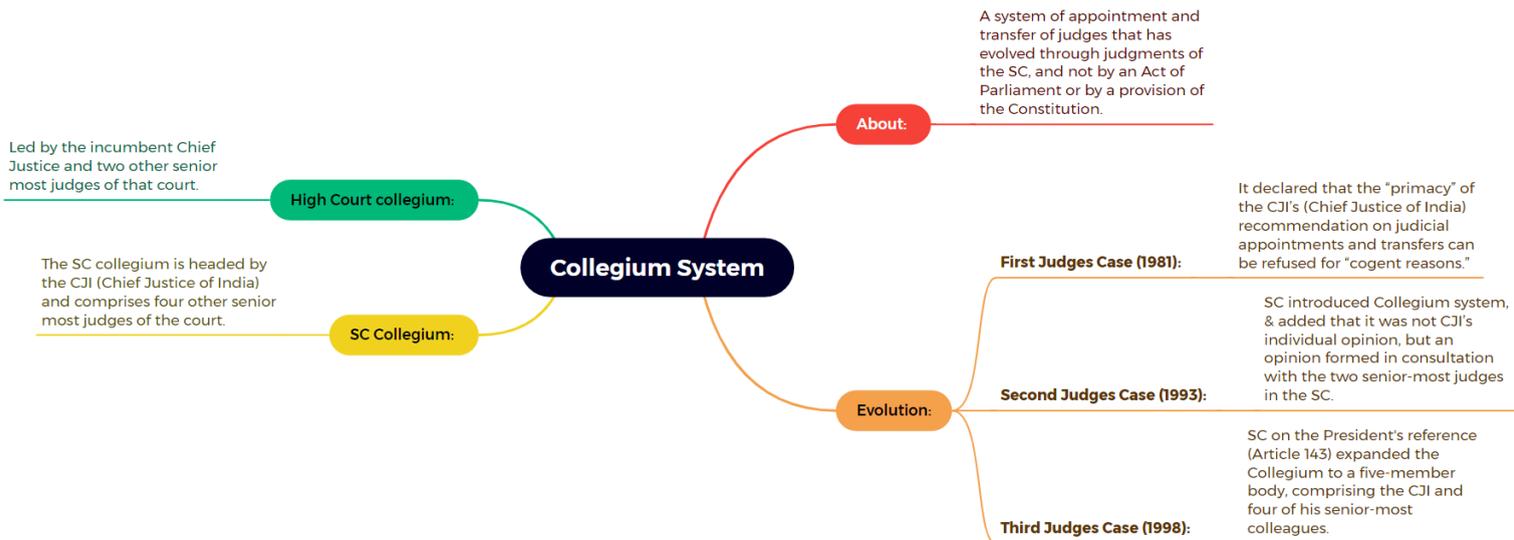
#### **Provisions of Karnataka State Employment of Local Candidates in the Industries, Factories and Other Establishments Bill, 2024**

- **Defines local candidate:** A person “who is born in the State of Karnataka and who is domiciled in the State for a period of 15 years and who is capable of speaking, reading and writing Kannada in a legible way and has passed a required test conducted by the nodal agency”.
- **Mandate:** Candidates must have a secondary school certificate with Kannada as a language. If not, they should pass a Kannada proficiency test, as specified by the nodal agency notified by the government.
- **Non- availability of qualified or suitable local candidates:** If so, the industries and establishments, in collaboration with the government, should take steps to train local candidates within three years.
- **Relaxation in norms:** If sufficient number of local candidates are not available, then an industry or factory or other establishments may apply for relaxation from the provisions of this Act to the government.
- **Minimum quota:** The percentage of local candidates should not go below 25% in management positions and 50% in non-management categories. Failure to comply may attract penalties ranging from ₹10,000 to ₹25,000.

### 4. SC Collegium/ With two new judges, Supreme Court back to its full judicial strength - The Hindu

Indian President recently 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, had recommended their names earlier. The two appointments would return the top court to its full sanctioned strength of 34 judges.

#### **Collegium System**



## 5. Centralised examinations have not aced the test - The Hindu

### Context

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.

### Issues with the NTA

- **Conducts examinations in pen to paper mode:** It 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.
- **Loss of credibility:** The NEET-UG fiasco caused a complete loss of trust in the NTA's ability or willingness to conduct a fair examination.

### Government measure to curb paper leak

- **Constitution of a 7 -member high-level committee of experts:**
  - **Reforming the mechanism of examination** process to forestall any possible breach
  - **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
  - **Establishing a responsive grievance redress mechanism.**

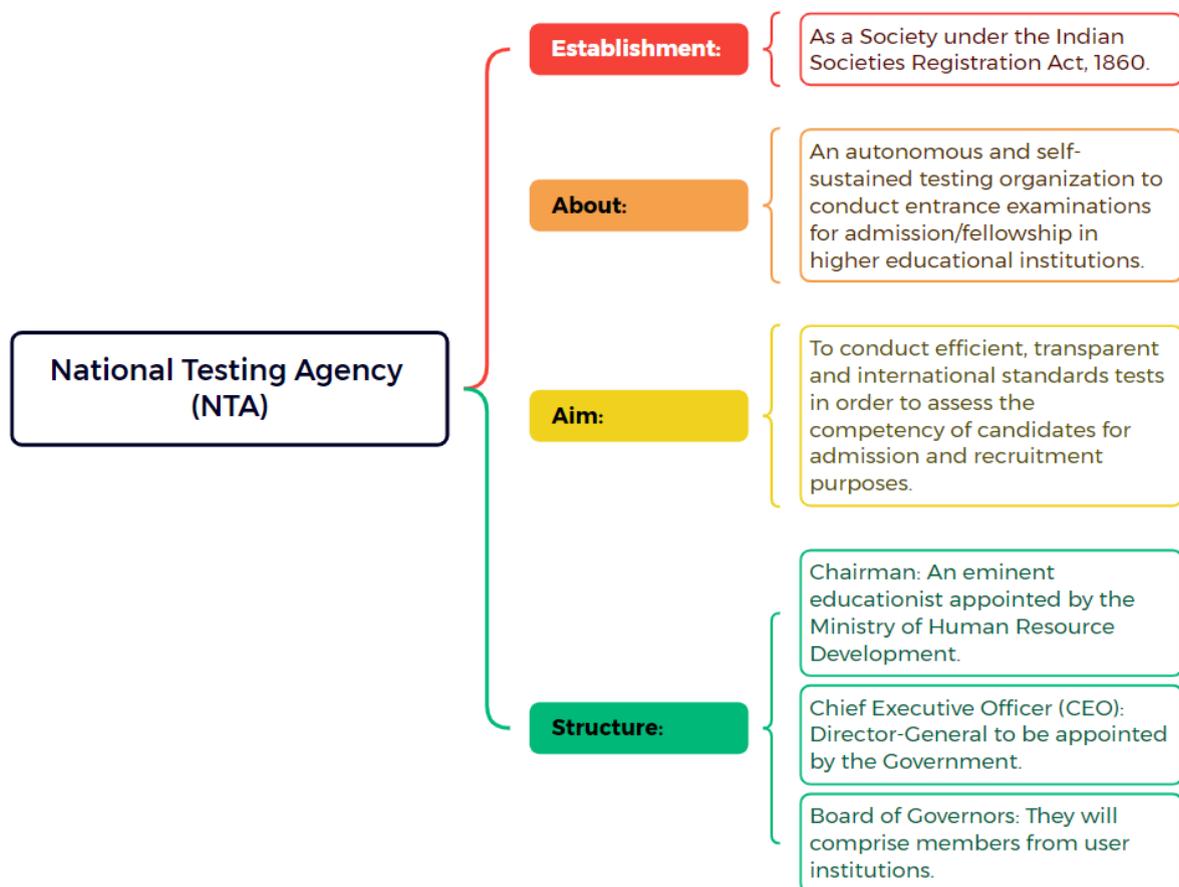
### Decentralisation as an option

- **Restructuring of testing bodies:** To incorporate domain experts, testing experts and also IT measures of not just testing tools but also cyber safety and multiple types of safeguards.
- **Can reduce the element of risk:** The central government's role could be to mandate the standard to be followed for higher education institutions.

#### Rejuvenating the schooling system

- **Introducing a % of school-leaving marks** to the final score of the candidates' entrance examination.
- **Safeguarding merit** based on good school education.
- **Ensuring standards of academic competency**, hard work and good values at lower levels of schooling.

#### National Testing Agency (NTA)



## 6. PM SHRI, the 'showcase' schools scheme that Centre is pushing in states - Indian Express

### Context

The Centre has stopped funding for the umbrella program for school education in three opposition-ruled states that have refused to implement its PM SHRI scheme. The Samagra Shiksha Scheme, for which funding has been stopped in

West Bengal, Punjab, and Delhi, supports implementation of the Right of Children to Free and Compulsory Education (RTE) Act, 2009.

### Pradhan Mantri Schools for Rising India (PM-SHRI) Scheme

A 60:40 ratio by the Centre and states, barring the 11 Northeastern and Himalayan states, which have to bear only 10% of the cost.

**Funding:**

PM SHRI Schools to be developed as Green Schools, incorporating environment-friendly aspects.

The pedagogy adopted in these schools will be holistic, integrated, play/toy-based, inquiry-driven, discovery-oriented, learner-centric, discussion-based, flexible and enjoyable.

Learning outcomes of every child in every grade will be focussed again.

Assessment at all levels will be based on conceptual understanding.

Linkage with Sector Skill Councils and local industry for enhancing employability.

A School Quality Assessment Framework (SQAF) is being developed, specifying the key performance indicators to measure outcomes.

**Features:**

### Pradhan Mantri Schools for Rising India (PM-SHRI) Scheme

**About:**

A Centrally Sponsored scheme announced in 2022.

**Aim:**

To develop over 14500 schools to "showcase" the National Education Policy (NEP), 2020.

**Duration:**

2022-23 to 2026-27 after which it shall be the responsibility of States/UTs to continue to maintain the benchmarks achieved.



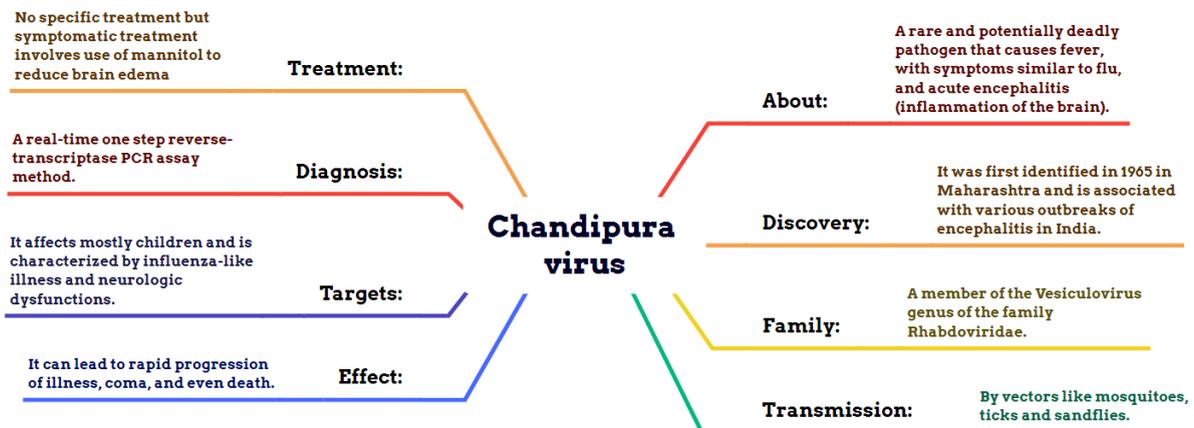
## Sci and Tech

### 7. CHILDREN DEATHS IN GUJARAT: WHAT IS THE CHANDIPURA VIRUS INFECTION? - Indian Express

#### Context

The Gujarat government recently said that six children have died of suspected Chandipura virus (CHPV) infection in the state since July 10. So far, a total of 12 suspected cases have been reported.

#### Chandipura virus



### 8. Glimpses of LUCA, the life-form from which all other life descended - The Hindu

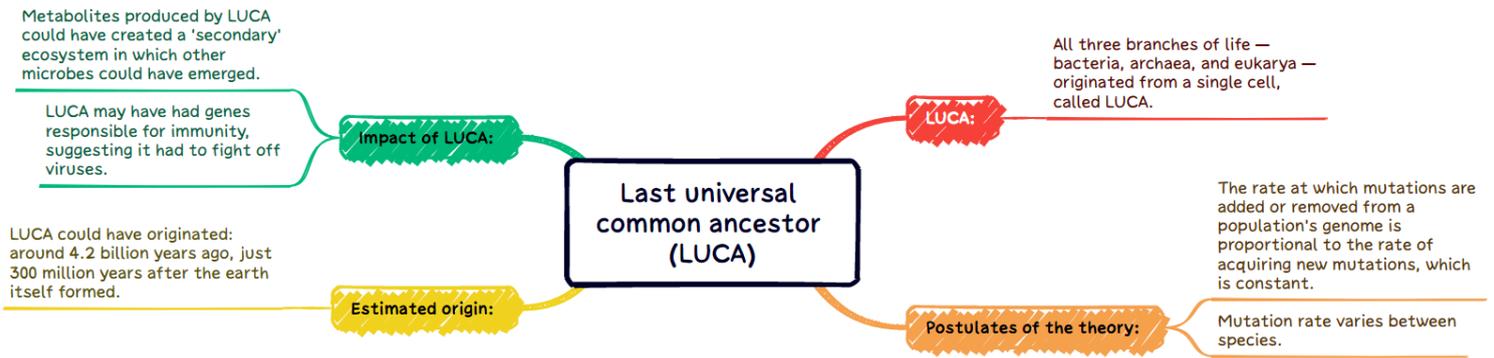
#### Context

Many theories have been propounded by scientists on the origin of earth. However, there is no consensus on the exact mechanism of origin of life on earth.

#### Theories about origin of life

Oparin-Haldane hypothesis:	They 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.
Miller-Urey experiment, 1952:	The University of Chicago researchers Stanley Miller and Harold Urey showed that in the right conditions, inorganic compounds could give rise to complex organic compounds.
Theory of meteorites:	It held that meteorites from space could have brought the building blocks of life, sustained by discoveries on the earth as well as out there.

## Last universal common ancestor (LUCA) and the molecular clock

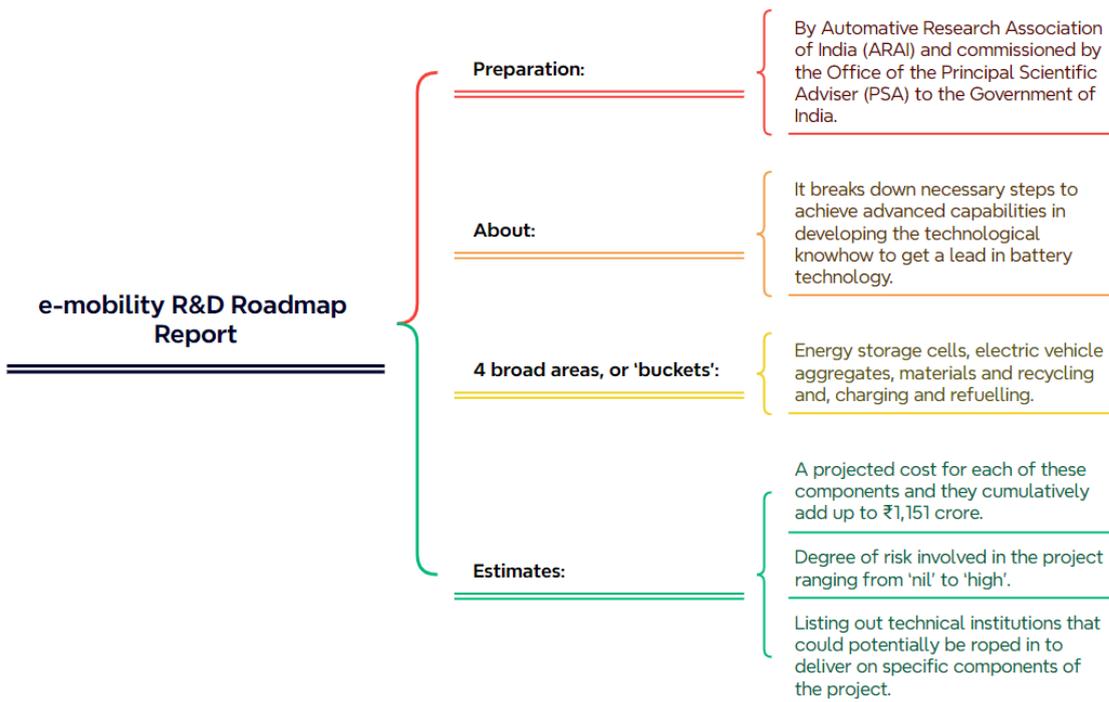


## 9. '1,151-cr. investment can help India in battery tech. Race' - The Hindu

### Context

As per a report, 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.

### e-mobility R&D Roadmap Report

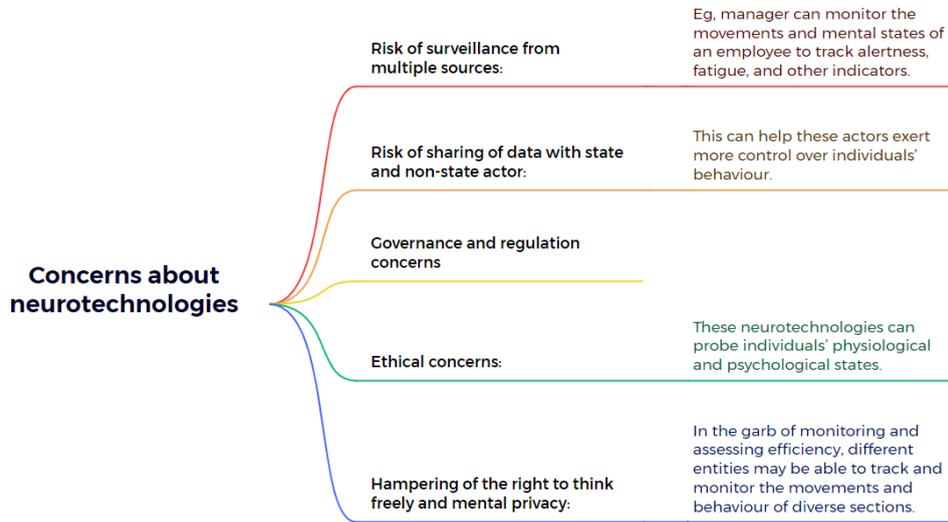


## 10. As thoughts become digitised, who will protect our neurorights? - The Hindu

### Context

Elon Musk's Neuralink has also kindled hope about using brain-computer links to help physically impaired people restore some lost function. Neurotechnologies range from MRI that health workers routinely use to the rarer Brain-Computer Interfaces (BCI).

**Concerns about neurotechnologies**

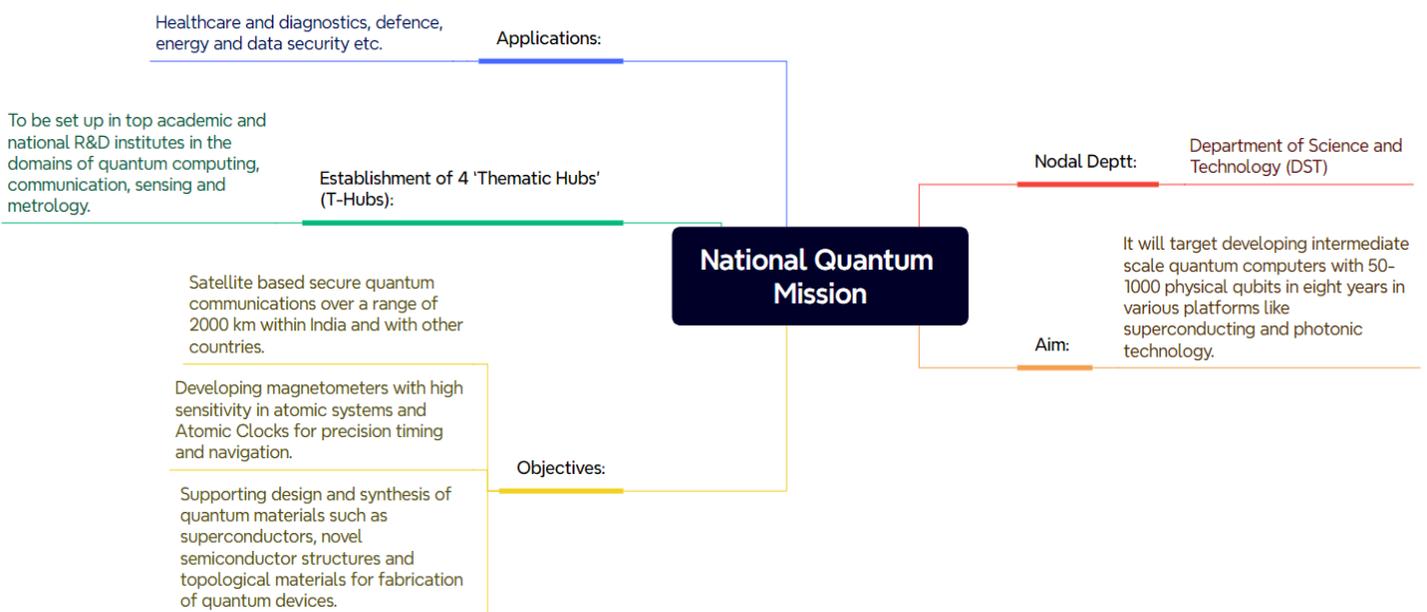


**11. India's quantum future - Indian Express**

**Context**

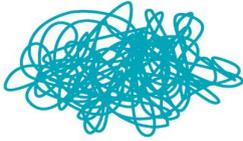
India launched the National Quantum Mission last year and became one of the few countries in the world to have a dedicated programme to harness the power of quantum technologies. These technologies, which use special properties of the tiniest particles of matter, can yield radical solutions to some of the most intractable problems of our age, such as clean energy and affordable healthcare.

**National Quantum Mission**



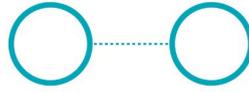
**Quantum Technology**

- **About:** A class of technology (developed in early 20th century) that works by using the principles of quantum mechanics - the physics of subatomic particles, including quantum entanglement and quantum superposition.
- **Principles of quantum technology:**



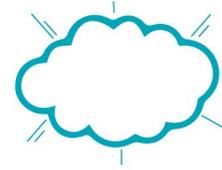
## SUPERPOSITION

Superposition describes a particle's ability to exist across many possible states at the same time. So the state of a particle is best described as a "superposition" of all those possible states.



## ENTANGLEMENT

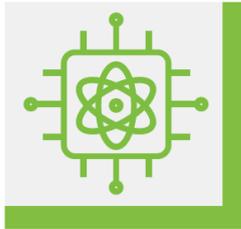
Quantum entanglement refers to a situation in which two or more particles are linked in such a way that it is impossible for them to be described independently even if separated by a large distance.



## OBSERVATION

Superposition and entanglement only exist as long as quantum particles are not observed or measured. "Observing" the quantum state yields information but results in the collapse of the system.

### Three key quantum use cases: Computing, communication, and sensing



#### Quantum computing

Quantum computing solves advanced computational problems by leveraging quantum phenomena to process information and make calculations.

Enterprise use of quantum computers is expected to ramp up over the next several years, likely growing dramatically within a decade with the appearance of fault-tolerant quantum machines.



#### Quantum communication

Quantum communication creates secure, theoretically tamper-proof communication networks that can detect interception or eavesdropping.

Several quantum communication networks either have been deployed or are in progress, but it likely will be several years before they can overcome the unpredictability of quantum particles.



#### Quantum sensing

Quantum sensing devices provide higher responsiveness, accuracy, and performance than conventional sensors, due to the nature and sensitivity of subatomic particles.

Quantum sensors are available today for limited production use cases and their availability and capability likely will increase substantially within five to 10 years.