GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 4233
ANSWERED ON 26/03/2025

AIM OF NATIONAL QUANTUM MISSION

4233. Dr. NISHIKANT DUBEY:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Government has approved a National Quantum Mission;

(b) if so, the details thereof; and

(c) the details of the aims and objectives of the said mission?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES (DR. JITENDRA SINGH)

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)

(डॉ. जितेंद्र सिंह)

(a) Yes Sir

(b) The Union Cabinet approved the National Quantum Mission (NQM) on 19th April 2023 at a total cost of Rs.6003.65 crore for a period of eight years.

(c) The aims of the mission are:

1. **To seed, nurture and scale up scientific and industrial R&D and create vibrant & innovative ecosystem in Quantum Technology (QT).**
2. **To accelerate QT led economic growth and ecosystem in the country.**
3. **To be among the leading nations in the development of Quantum Technologies.**

The objectives of the mission are:

1. **Develop intermediate scale quantum computers with 20-50 physical qubits (3 years), 50-100 physical qubits (5 years) and 50-1000 physical qubits (8 years) in various platforms like superconducting and photonic technology.**
2. **Develop satellite based secure quantum communications between two ground stations over a range of 2000 kilometers within India as well as long distance secure quantum communications with other countries.**
3. **Develop inter-city quantum key distribution over 2000 km with trusted nodes using wavelength division multiplexing on existing optical fiber.**
4. **Develop multi-node Quantum network with quantum memories, entanglement swapping and synchronized quantum repeaters at each node (2-3 nodes).**
5. **Develop magnetometers with 1 femto-Tesla/sqrt(Hz) sensitivity in atomic systems and better than 1 pico-Tesla/sqrt(Hz) sensitivity in Nitrogen Vacancy-centers; Gravity measurements having sensitivity better than 100 nano-meter/second^2 using atoms and Atomic Clocks with 10^{-19} fractional instability for precision timing, communications and navigation.**
6. **Design and synthesis of quantum materials such as superconductors, novel Semiconductor structures and topological materials for fabrication of quantum devices for development of qubits for quantum computing and quantum communication applications, single photon sources/detectors, entangled photon sources for quantum communications, sensing and metrological applications.**

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