

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION No. 4204
TO BE ANSWERED ON 13/12/2019**

QUANTUM TECHNOLOGY AND SUPERCOMPUTERS

**4204. SHRI SANTOKH SINGH CHAUDHARY:
SHRI K. MURALEEDHARAN:**

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

- (a) whether the Government is going to launch a mission in the field of quantum technology;
- (b) if so, the details thereof along with the amount of monetary investment made in this regard;
- (c) whether the Government has taken steps to groom young researchers in quantum research, if so, the details thereof, if not, the reasons therefor;
- (d) the steps taken to make India an exporter of quantum technology;
- (e) whether the Government is considering to indigenously develop 60 supercomputers over the next three years, if so, the details thereof; and
- (f) whether these systems would be implemented by the centre for development of advanced computing and six machines likely to be installed by the year end and if so, the details thereof?

ANSWER

**MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND
TECHNOLOGY; AND MINISTER OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

**स्वास्थ्य और परिवार कल्याण मंत्री; विज्ञान और प्रौद्योगिकी मंत्री; और पृथ्वी विज्ञान मंत्री
डॉ. हर्ष वर्धन**

- (a) Yes, Sir.
- (b) Department of Science and Technology (DST) is in the process of developing Detailed Project Report (DPR) on National Mission on Quantum Technologies & Applications (NM-QTA). National Consultative Meetings are being carried out to capture aspirations of stakeholders into the DPR. Broad objectives of NM-QTA are to promote R&D, Develop and demonstrate Quantum Computers, Quantum Communication, Quantum Key Distribution, Quantum Devices, Human Research Development, strengthening international collaborative research, nurture innovation and startups. No investments made on NM-QTA as of now. Estimated cost of NM-QTA will be known only after finalization of DPR.

(c) Yes, Sir, Department of Science & Technology has initiated a research programme, Quantum Enabled Science and Technology (QuEST) to groom young researchers in quantum research. A total of 51 young researchers have been selected under this programme for initiating both experimental and theoretical research in the field of quantum technology at a total cost of Rs. 186 Crore for a period of 3 years. Rs. 10.80 Crore has already been released.

(d) As of now, the Quantum technologies are at the development stage and yet to mature to the level of products. For exporting Quantum Technologies, the mission NM-QTA is developing strategies to create a platform in the form of Special Purpose Vehicle (SPV).

(e) Yes Sir. However, the number of supercomputers would depend on the capacity of each because of rapidly changing technologies and speed which will have to be determined every year by an expert committee.

(f) 3 Supercomputers have already been installed and operationalized at Indian Institute of Technology (IIT) – Varanasi, IIT-Kharagpur and Indian Institute of Science Education and Research (IISER) – Pune through Center for Development of Advanced Computing (C-DAC) – Pune and 3 more machines are under preparation to be installed at IIT-Kanpur, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCAR)-Bangalore and IIT-Hyderabad. These should be ready for installation during the next financial year.
