

# UPSC

Only write question number in this margin

Candidate must adhere to the word limit specified in the question.  
Any page or portion of the page left blank must be clearly struck off.

2. India needs a holistic approach to tackle newest threat in the Cyber space sector from quantum techniques. Explain.

India recently established cryptographic techniques for secure networks with quantum technology, built up of Quantum lab established at Mohan, M.P

Need for Quantum resistant techniques

1. Traditional Cryptographic models are at risk.
2. Increasing military application using quantum techniques
3. Possibility of quantum - <sup>cyber</sup> threat to existing digital Infrastructure.
4. Chinese threat
  - a. 2 of world's fastest super computer with China
  - b. Chinese sponsored cyber attacks on india's infrastructure.
  - c. Increased reliance on chinese hardware adds to vulnerability.

India's progress

2019-20 India announced Quantum Technology as Mission of National Importance

# UPSC

Candidate must adhere to the word limit specified in the question.  
Any page or portion of the page left blank must be clearly struck off.

इस हाशिए में केवल प्रश्न संख्या लिखें।  
Only write question number in this margin

2020-21 - Budget - Launched National mission on quantum technologies and applications.

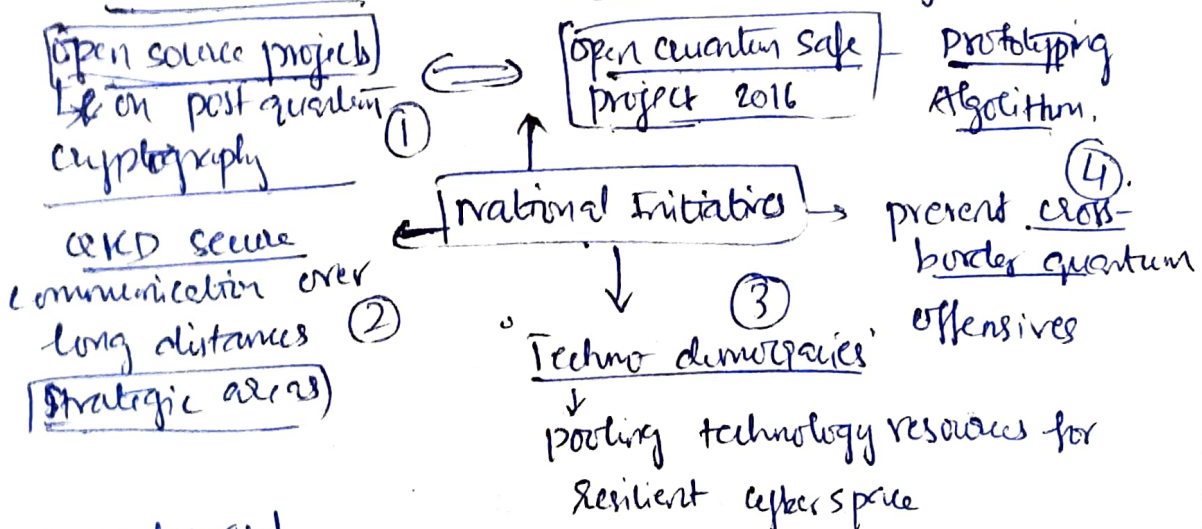
2022 - QKD secure communication between U.P. Prayagraj and Vidyanalhal 100km apart

Further progress needed

Foreign assistance

1. procuring US - NSA's - quantum suite - B- Cryptographic quantum resistant suite - for algorithm.

2. Guidelines on US National Institute of Standards & Techniques (NIST) - for post quantum cryptography.



Way forward

Need for holistic approach, along with post quantum cryptographic techniques to make cyber space free from quantum threat.