

## Prelim Bits 30-12-2021 | UPSC Daily Current Affairs

### Quantum Technologies

*Indian Army has established the Quantum Lab at Military College of Telecommunication Engineering, Mhow (MP).*

- Key thrust areas are Quantum Computing, Quantum Communication, Quantum Key Distribution and Post Quantum Cryptography.
- **Related Links** - [Quantum Random Number Generator](#)

Quantum Theory explains the behaviour of energy and material on the atomic and subatomic levels.

It works using the quantum bits or qubits.

### Quantum Computing

- Quantum computing is an area of computing focused on developing computer technology based on the principles of quantum theory.
- It helps to solve problems too complex for classical computers.
- Normal Computers can only encode information in bits that take the value of 1 or 0 - restricting their ability.
- Quantum computing uses quantum bits or qubits. They harnesses the ability of subatomic particles that allows them to exist in more than one state (1 and 0 at the same time i.e, a state of superposition).
- The power of quantum computers grows exponentially with more qubits.
- This is unlike classical computers, where adding more transistors only adds power linearly.

### Quantum Communication

- Quantum communication is a field of applied quantum physics closely related to quantum information processing and quantum teleportation.
- It takes advantage of the laws of quantum physics to protect data.
- These laws allow particles (qubits) - typically photons of light for transmitting data along optical cables - to take on a **state of superposition**.
- This means they can represent multiple combinations of 1 and 0 simultaneously.

### Quantum Key Distribution

- Quantum key distribution (QKD) is a secure communication method which implements a cryptographic protocol involving components of quantum mechanics.
- QKD enables two parties to produce a shared random secret key (encryption key) known only to them.
- These encryption keys can be exchanged only between the shared parties. (This makes the

communication private.)

- These keys can then be used to encrypt & decrypt messages.
- QKD involves sending encrypted data as classical bits over networks, while the keys to decrypt the information are encoded and transmitted in a quantum state using qubits.

## Post Quantum Cryptography

- The private communication of individuals and organizations is protected online by cryptography. Cryptography protects our information as it travels over and is stored on the internet.
- Post-quantum cryptography (quantum-proof, quantum-safe or quantum-resistant) refers to the existing cryptographic algorithms (especially public-key algorithms).
- These algorithms were thought to be secure against a cryptographic attack by a quantum computer.
- But, the problem with currently popular algorithms is that their security relies on one of three hard mathematical problems:
  1. Integer factorization problem,
  2. Discrete logarithm problem or
  3. Elliptic-curve discrete logarithm problem.
- All of these problems can be easily solved on a sufficiently powerful quantum computer running Shor's algorithm.
- Post-quantum cryptography is all about preparing for the era of quantum computing by updating existing mathematical-based algorithms and standards.

## Reference

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3. <https://www.techtarget.com/searchsecurity/definition/quantum-key-distribution-QKD>
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5. <https://www.ibm.com/in-en/topics/quantum-computing>
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## 'India Out' Campaign

*Recently, in Maldives, the 'India Out' campaign has gained momentum with their former President Abdulla Yameen leading it.*

- **Story Behind** - Over the last 3 years since Maldives President Ibrahim Mohamed Solih was elected to office, an 'India Out' campaign has cropped up every now and then within Maldives, mostly on social media.
- The campaign is led by government critics who accuse their government of "allowing Indian boots on the ground", and thereby "compromising the sovereignty" of the Indian Ocean island nation.
- But the ruling administration has denied there is any Indian military presence in the country, or a threat to Maldives' sovereignty.
- **Recent development** - Recently, the campaign has gained momentum with former President Abdulla Yameen leading it.
- [During Mr. Yameen's term as President, New Delhi-Male relations deteriorated drastically. He is perceived as a friend of China.]

- The campaign has got louder around key bilateral developments such as the signing of the Uthuru Thila Falhu harbour development deal with India.
- New Delhi is helping Male develop the Maldives National Defence Force Coast Guard Harbour.
- **Factors** that have led to such anti-India sentiments in Maldives are controversy over India's gift of Dhruv Advanced Light Helicopters, Domestic Politics, Perception of interference in Domestic Affairs, etc

## Reference

1. <https://www.thehindu.com/news/international/the-india-out-campaign-in-the-maldives/article38046584.ece>
2. <https://indianexpress.com/article/explained/the-maldives-india-out-campaign-explained-7396314/>

## Apatani Textiles

*An application seeking Geographical Indication (GI) tag for the Arunachal Pradesh Apatani textile product has been filed by a firm.*

- The Apatani weave comes from the Apatani tribe of Arunachal Pradesh living at Ziro, the headquarters of lower Subansiri district.
- The woven fabric of this tribe is known for its **geometric and zigzag** patterns and also for its angular designs.
- The tribe predominantly weaves shawls known as jig-jiro and jilan or jackets called supuntarii.
- They use different plant resources for organic dyeing the cotton yarns in their traditional ways.
- **Only women** folk are engaged in weaving.
- Their traditional handloom is a type of loin loom called **Chichin**, and is similar to the traditional handloom of the Nyishi tribe.
- **Related Links** - [GI tag](#)

## Apatani Tribes

- 'Apatani Tribes' of Arunachal Pradesh are one of India's larger tribes.
- Apatani, or Tanw, also known by Apa and Apa Tani, are known for their fish and paddy culture, along with cane and bamboo crafts.
- Their vibrant traditional village councils are called **bulyañ**.
- They speak a local language **Tani** and worship the sun and the moon.
- **Festivals** are Marun, Myako, Dree, and Yapung.
- The elders in the tribe propagate knowledge through folk stories, songs, couplets in the form of Miji-Migun, Busi-Ayu.
- They were the first tribe in India to come in contact with the British in the 12th century.

The UNESCO has proposed the Apatani valley for inclusion as a World Heritage Site for its "extremely high productivity" and "unique" way of preserving the ecology.



## Reference

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3. <https://lowersubansiri.nic.in/tribes/>

## Non-renewal of Registration of NGOs under FCRA

*The Ministry of Home Affairs (MHA) declined to renew the registration of 'Missionaries of Charity' under the Foreign Contribution (Regulation) Act.*

- **FCRA** - First enacted in 1976, Foreign Contribution (Regulation) Act, 2010 was amended in 2010 and 2020.
- The FCRA regulates foreign donations and ensures that such contributions do not adversely affect internal security.
- It is applicable to all associations, groups and NGOs which intend to receive foreign donations.
- Registered associations can receive foreign contribution for social, educational, religious, economic and cultural purposes.
- Filing of annual returns, on the lines of Income Tax, is compulsory.

## Rules for NGOs

- All NGOs must mandatorily register under the FCRA, initially valid for 5 years that can be renewed subsequently if it complies with all norms.
- According to Section 16 of the Act, the certificate of registration should be renewed within six months of its expiry.
- **In 2015**, the MHA notified new rules, which required NGOs to give an undertaking that the acceptance of foreign funds is **not likely to**

1. Prejudicially affect the sovereignty and integrity of India, or
  2. Impact friendly relations with any foreign state and
  3. Disrupt communal harmony.
- It also said all such NGOs would have to operate accounts in either nationalised or private banks which have core banking facilities to allow security agencies access on a real time basis.
  - **In 2020**, FCRA was amended to insert a new provision that makes it mandatory for all NGOs to receive foreign funds in a designated bank account at SBI's New Delhi branch.
  - Any other bank account can be linked to the main account but all foreign donations should be received in the SBI account.
  - The Act also made Aadhaar a mandatory identification document for all the office-bearers, directors and other key functionaries of an NGO.
  - It also capped the administrative expenses at 20% of the total foreign funds received - earlier, the upper limit was 50%.
  - It also barred sub-granting by NGOs to smaller NGOs who work at the grass roots level.

### **Not eligible to Receive Foreign Donations**

- Members of legislatures, political parties, government officials, judges, media persons are prohibited from receiving any foreign contribution.
- However, in 2017, the MHA through the Finance Bill route amended the 1976-repealed FCRA law.
- This 2017 amendment paved the way for political parties to receive funds from the Indian subsidiary of a foreign company or a foreign company where an Indian holds 50% or more shares.

### **Other Way to Receive Foreign Donations**

- Other way is by applying for prior permission from the MHA. It is granted for receipt of a specific amount from a specific donor for carrying out specific activities or projects.
- But the association should be registered under statutes such as the Societies Registration Act, 1860, Indian Trusts Act, 1882 or Section 25 of the Companies Act, 1956 etc.
- A letter of commitment from the foreign donor specifying the amount and purpose is also required.

### **Inspection**

The MHA is the controlling authority of FCRA and it conducts inspections and audits of NGOs to establish if their books are in order.

- The MHA on inspection of accounts and upon receiving any adverse input against the functioning of an association can suspend the FCRA registration initially for a period of 180 days.
- Till the time any decision is taken, the association cannot receive any fresh donation and cannot utilise more than 25% of the amount available in the designated bank account without permission of the MHA.
- The MHA can cancel the registration of an organisation which will not be eligible for registration or grant of 'prior permission' for 3 years from the date of cancellation.
- The MHA can also place foreign donors on the "watch list" or 'Prior Reference Category' (PRC), barring them from sending money to associations without the MHA's clearance.

## Reference

<https://www.thehindu.com/news/national/explained-how-will-the-foreign-funding-for-charity-issue-be-resolved/article38064211.ece>

