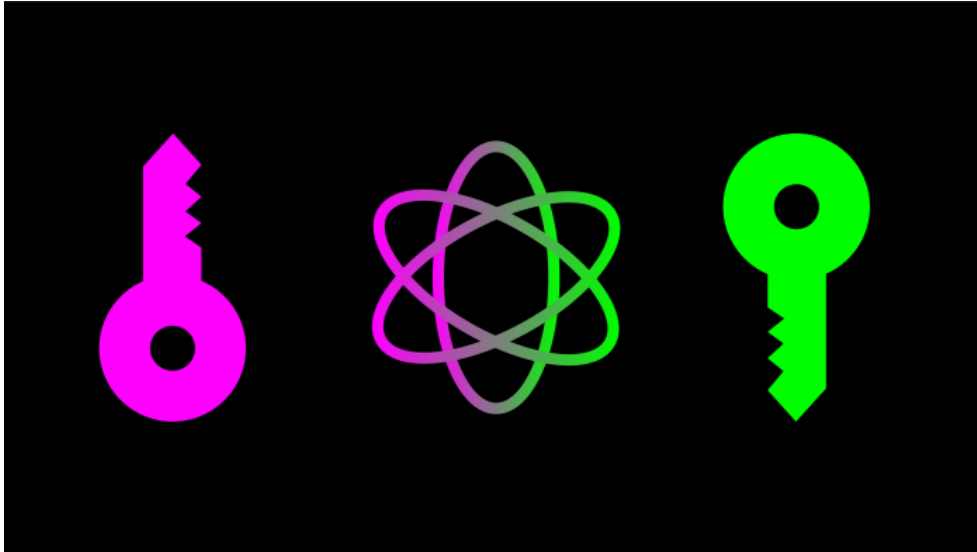# 1. Quantum Computing-based Telecom Network Link

Topic: Science and Technology

In News: India's first quantum computing-based telecom network link is now operational in Delhi.

More on the Topic

- The network has been developed by C-DoT (Centre for Development of Telematics).
- In quantum communication, information is encoded **in the properties of individual photons.**
- Here, when someone tries to tap into the system, the property of the photon changes in an irreversible manner.
- This ensures that you can detect any type of tapping or any attempt to intercept, so the system remains secure.
- This is in contrast to what happens in present day communication.
- Today, if two parties are communicating and someone taps into the system to intercept data, it goes undetected most of the time in the current digital systems.

About Quantum Key Distribution:

- 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**.
- In quantum communication network, data is transmitted via qubits. Qubits are particles – usually photons of light – in a superposition state, meaning they can be in multiple states and represent numerous combinations of 0 and 1.
- If a hacker tries to read them in transit, super-fragile quantum state "collapses" to either 1 or 0 and attempt to hack will also be recorded eventually.

Source: Indian Express

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2. Aravalli Green Wall Project
Topic: Environment and Ecology

➤ Forest belt likely to run roughly **from Porbandar to Panipat,** covering entire Aravali range and beyond

➤ 'Green wall' will act as barrier for dust from west and check eastward march of Thar desert

➤ It will check desertification by **restoring degraded land through massive afforestation**

➤ Project yet to get formal nod, details to be worked out

Delhi

Rough contours of proposed 1,400km 'green wall'

In News: The Haryana government has launched an extensive afforestation and plantation project called the "Green Wall" in 75 villages to revive the Aravallis.

More on the Topic:

- Aravallis are under threat from rampant mining, dumping of waste and encroachments.
- The project is conceptualised on the lines of the African Green Wall programme.
- The African Great Green Wall was an initiative launched in Sahel, the region bordering Africa's Sahara Desert, to increase the amount of arable land.
- The Aravalli Green Wall Project is **part of the Union Environment Ministry's vision to create green corridors across the country to combat land degradation and desertification.**
- The project covers states of **Haryana, Rajasthan, Gujarat and Delhi - where the Aravalli hills landscape span over 6 million hectares of land.**
- The project will involve planting native species of trees and shrubs on scrubland, wasteland and degraded forest land, along with rejuvenating and restoring surface water bodies such as ponds, lakes and streams.
- The project will also focus on agroforestry and pasture development to enhance the livelihoods of local communities.

Objectives of the Project:

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- Improving the ecological health of the Aravalli range
- To **prevent eastward expansion of Thar Desert** and to reduce land degradation by creating green barriers that will prevent soil erosion, desertification and dust storms.
- This green wall will help in **carbon sequestration and mitigating climate change** to enhance the biodiversity and ecosystem services of the Aravalli range by planting native tree species in the Aravalli region, providing habitat for wildlife, improving water quality and quantity.
- **Promote sustainable development and livelihood opportunities** by involving local communities in afforestation, agro-forestry and water conservation activities that will generate income, employment, food security and social benefits.
- It will Contribute to **India's commitments under various international conventions such as UNCCD (United Nations Convention to Combat Desertification), CBD (Convention on Biological Diversity) and UNFCCC (United Nations Framework Convention on Climate Change).**
- Enhancing India's image as a global leader in environmental protection and green development.
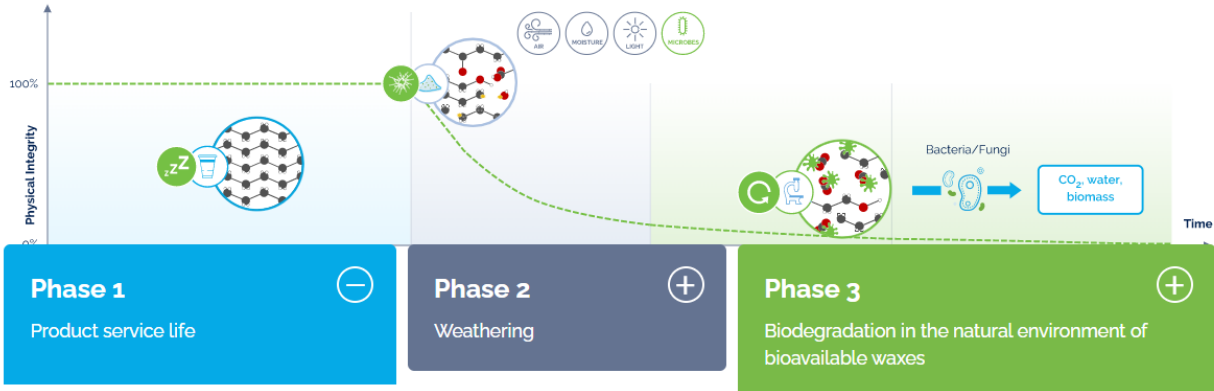
About Aravalli Range:

- The **Aravalli Range** is a hill chain in northern India that runs 560 kilometres **northeast across Rajasthan state.**
- The system is split into two sections: **the larger Sambhar-Sirohi ranges,** which include Guru Peak on Mount Abu, the highest peak in the Aravalli Range, and the shorter **Sambhar-Khetri ranges,** which are made up of three discontinuous ridges.
- The Aravalli Range is abundant in natural resources (including minerals) and acts as a **barrier to the western desert's expansion.**
- Several rivers flow from it, including the **Banas, Luni, Sakhi, and Sabarmati.**
- Though highly wooded in the south, it is mostly desolate and sparsely inhabited in the north, consisting mostly of **sand and stone and masses of rose-colored quartzite.**

Source: PIB

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3. Biotransformation Technology

Topic: Science and Technology

In News: UK-based startup claims to have developed Biotransformation technology that can alter the state of plastics and make them biodegradable without leaving behind any micro plastics.

More on the Topic:

- Biotransformation technology is a novel approach to ensure plastics that escape refuse streams are processed efficiently and broken down.
- Plastics made using this technology are **given a pre-programmed time during which the manufactured material looks and feels like conventional plastics** without compromising on quality.
- Once the product expires and is exposed to the external environment, it self-destructs and biotransforms into bioavailable wax.
- This wax is then consumed by microorganisms, converting waste into water, CO_2, and biomass.
- This biotransformation technology is **the world's first that ensures polyolefins fully biodegrade in an open environment causing no microplastics**.

Significance:

- **Food packaging and health care industries** are the two prime sectors that could use this technology to reduce waste.
- Within healthcare and pharma industries, this technology provides biodegradable solutions for non-woven hygiene products like diapers, sanitary napkins, facial pads, etc.

India's Plastic Scenario:

- India is generating 3.5 billion kgs of plastic waste annually and that the per capita plastic waste generation has also doubled in the past five years.
- Of this, a third comes from packaging waste.

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- According to 'Plastics: The Potential and Possibilities' report 2023, India recycles only 30% of its plastic waste.

What are the alternatives to reducing plastic waste in India?

- A switch to **jute or paper-based packaging** could potentially cut down plastic waste.
- This could also **build sustainability within the paper industry,** and save on the import bill on ethylene solutions.
- The **wooden packaging** is yet another alternative, but that will make the packaging bulkier and increase cost.

Source: Indian Express

4. Chenab Bridge

Topic: Infrastructure Development

In News: Chenab Bridge – World's Highest Rail Bridge will be completed soon.

More on the Topic:

- The Chenab Bridge, an engineering marvel, is a part of **the strategically important Udhampur-Srinagar-Baramullah (USBRL) railway link** that will connect Jammu & Kashmir to the rest of India.
- The 111 km stretch of railway from **Katra to Banihal is essential,** and the 1.3 km long Chenab Bridge is a crucial part of this stretch. Once completed, the entire USBRL Railway project will provide all-weather connectivity and join Jammu and Kashmir to the rest of India.
- The bridge **designed to withstand high wind speed up to 266 Km/Hour, bear earthquake forces of highest intensity zone-V in India**.

Source: Indian Express

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5.Earth Hour

Topic: Environment and Ecology

In News: Earth Hour was observed on 25th March.

More on the Topic:

* Earth Hour is **a worldwide movement organised by the World Wildlife Fund (WWF)** to encourage individuals, communities and businesses to turn off non-essential electric lights for one hour, from 8:30 pm to 9:30 pm on the last Saturday of March as a symbol of commitment to the planet.
* More than 100 countries across the world participated in Earth Hour.
* It was first started in **Sydney, Australia in 2007** and has since gained popularity and momentum. Check out some of the most iconic photos of Earth Hour 2023.

Source: Business Standard

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6. Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)

Topic: Government Schemes

In News: The Ministry of Rural Development (MoRD) will sign a Memorandum of Understanding (MoU) with 19 captive employers to aide employment of beneficiaries under the scheme.

More on the Topic:

- The MoRD launched the Captive Employment Guidelines under DDUGKY to ensure that the candidates are **trained as per the industry requirement and employed.**
- The captive employment model allows the employer to select the rural youths, skill & deploy them in one of its own establishment/sister-concern/subsidiaries.

About Deen Dayal Upadhyaya Grameen Kaushalya Yojana:

- It is a part of the **National Rural Livelihood Mission (NRLM)**.
- The scheme is under the Ministry of Rural Development, GOI.
- Its two major objectives are:
- Incorporating diversity to the incomes of rural poor families
- Catering to the career aspirations of rural youth
- The focus of the scheme is on rural poor youth between the ages of 15 and 35.
- It is a demand-driven skills training program that is placement-linked.

Source: Business Standard

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7. Kaziranga National Park

Topic: Environment and Ecology

In News: In the first poaching incident at Kaziranga National Park this year, the carcass of a rhino was found in the western range of the park.

More on the Topic:

- It is a national park in the **Golaghat and Nagaon districts of Assam.**
- **Brahmaputra lies on North and Karbi Anglong hills on South of Kaziranga.**
- The sanctuary, which hosts t**wo-thirds of the world's great one-horned rhinoceroses,** is a **World Heritage Site.**
- Kaziranga is recognized as an Important **Bird Area by BirdLife International for conservation of avifaunal species.**
- Kaziranga has the largest population of the **Wild water buffalo** anywhere accounting for about 57% of the world population.

Source: Business Standard

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