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## **BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL (BIRAC)**

**SYLLABUS:** GS PAPER–III (Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment)

**CONTEXT:** PM Narendra Modi said that India's bio–economy has grown eight times in the last eight years from \$10 billion to \$80 billion and that the country is not too far from reaching the league of top 10 nations in biotech –global ecosystem.

### **WHAT IS BIO-ECONOMY?**

- The bio–economy or the bio–based economy is a new model for industry and the economy.
- According to the United Nations Food and Agriculture Organisation (FAO), bio–economy is "the production, use and conservation of biological resources, including related knowledge, science, technology, and innovation to provide information, products, processes and services to all economic sectors with the aim of moving towards a sustainable economy".

### **NEED FOR BIO–ECONOMY**

- The transition from a fossil fuel based to bio–based economy is expected to reduce our dependence on fossil fuels and achieve more sustainability, thereby contributing to climate and environmental protection.
- It also exploits the untapped potential stored within millions of tons of biological waste and residual materials.
- Bio–economy, in recent years has become a key focus of political and technological interest both nationally and internationally.

### **ABOUT BIRAC**

- Biotechnology Industry Research Assistance Council (BIRAC) is a not–for–profit, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs.
- BIRAC's aim is to play a transformative and catalytic role in building a US\$ 100 billion Indian bio–economy.
- It is an industry–academia interface that implements its mandate through a wide range of impact initiatives such as:
  1. providing access to risk capital through targeted funding
  2. technology transfer
  3. IP management
  4. hand-holding schemes that help bring innovation excellence to the biotech firms and make them globally competitive.
- In its eight years of existence, BIRAC has initiated several schemes, networks and platforms that help to bridge the existing gaps in the industry–academia Innovation research and facilitate novel, high quality affordable products development through cutting edge technologies.
- BIRAC has initiated partnerships with several national and global partners to collaborate and deliver the salient features of its mandate.

## FOUR NEW CORALS RECORDED FROM INDIAN WATERS

### SYLLABUS: PRELIMS

**CONTEXT:** Scientists have recorded four species of corals for the first time from Indian waters.

### FACTS

- These new species of **azooxanthellate corals** were found from the waters of **Andaman and Nicobar Islands**.
- Azooxanthellate corals are a group of corals that do not contain azooxanthellae and derive nourishment not from the sun but from capturing different forms of plankton.
- These groups of corals are deep-sea representatives, with the majority of species reporting from between 200 m to 1000 m. Their occurrences are also reported from shallow coastal waters.
- These four species are as follows:
  1. Truncatoflabellum crassum
  2. T.incrustatum
  3. T. aculeatum
  4. T. irregulare
- These azooxanthellate corals which come under the family Flabellidae were previously found from Japan to the Philippines and Australian waters while only T. crassum was reported within the range of Indo-West Pacific distribution including the Gulf of Aden and the Persian Gulf.

## G-7 SUMMIT

### SYLLABUS: GS PAPER-II (IMPORTANT INTERNATIONAL INSTITUTIONS)

**CONTEXT:** PM Modi will attend the G-7 summit to be held on June 26 and 27 as a special invitee.

- The 48th G7 summit is scheduled to be held from 26 to 28 June 2022 in Schloss Elmau, Krün, Bavarian Alps, Germany.

### ABOUT G-7

- The G7 or the Group of Seven is a group of the seven most advanced economies as per the International Monetary Fund (IMF). The seven countries are Canada, the USA, UK, France, Germany, Japan and Italy.
- The bloc meets annually to discuss issues of common interest like global economic governance, international security and energy policy.
- All the G7 countries and India are a part of G20.
- The G-7 does not have a formal constitution or a fixed headquarters. The decisions taken by leaders during annual summits are non-binding.

## CRYPTOCURRENCY

### SYLLABUS: GS PAPER-III (MOBILIZATION OF RESOURCES, IT & COMPUTERS)

**CONTEXT:** The precipitous downturn of the crypto market has brought cryptocurrencies into limelight.

## ABOUT CRYPTOCURRENCY

- A cryptocurrency is a form of digital or virtual currency based on a network that is distributed across a large number of computers. It is nearly impossible to counterfeit or double-spend.
- Many cryptocurrencies are decentralized networks based on **blockchain technology**.
- Cryptocurrencies are generally not issued by any central authority. Therefore, it makes them theoretically immune to government interference or manipulation.
- As per computer experts, any system that falls under the category of cryptocurrency must meet the following requirements:
  1. Absence of any centralised authority and is maintained through distributed networks.
  2. The system maintains records of cryptocurrency units and who owns them.
  3. The system decides whether new units can be created and in case it does, decided the origin and the ownership terms.
  4. Ownership of cryptocurrency units can be proved exclusively cryptographically.
  5. The system allows transactions to be performed in which ownership of the cryptographic units is changed.

## TYPES OF CRYPTOCURRENCIES

- The first type of crypto currency was **Bitcoin**, which to this day remains the most-used, valuable and popular. Along with Bitcoin, other alternative cryptocurrencies with varying degrees of functions and specifications have been created.
- Bitcoin was launched in 2009 by an individual or group known by the pseudonym "Satoshi Nakamoto."
- The competing cryptocurrencies that were created as a result of Bitcoin's success are known as altcoins. Some of the well known altcoins are as follows:
  1. Litecoin
  2. Peercoin
  3. Namecoin
  4. Ethereum
  5. Cardana

## ADVANTAGES OF CRYPTOCURRENCY

**Cryptocurrency has the following advantages:**

1. Funds transfer between two parties will be easy without the need of third party like credit/debit cards or banks.
2. It is a cheaper alternative compared to other online transactions.
3. Payments are safe and secured and offer an unprecedented level of anonymity.
4. Modern cryptocurrency systems come with a user "wallet" or account address which is accessible only by a public key and private key. The private key is only known to the owner of the wallet.
5. Funds transfer are completed with minimal processing fees.

## DISADVANTAGES OF CRYPTOCURRENCY

1. The almost hidden nature of cryptocurrency transactions makes them easy to be the focus of illegal activities such as money laundering, tax-evasion and possibly even terror-financing.
2. Payments are not irreversible.
3. Cryptocurrencies are not accepted everywhere and have limited value elsewhere

4. There is concern that cryptocurrencies like Bitcoin are not rooted in any material goods. Some research, however, has identified that the cost of producing a Bitcoin, which requires an increasingly large amount of energy, is directly related to its market price.

#### **INDIA AND CRYPTOCURRENCY**

- 2009: First cryptocurrency, Bitcoin launched in 2009 by Satoshi Nakamoto.
- 2018: RBI banned banks and other regulated entities from supporting crypto transactions.
- 2019: Inter-ministerial committee recommended banning all private cryptocurrencies.
- 2020: SC struck down the ban on the trading of cryptocurrency as unconstitutional.
- 2021: Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 introduced.
  - Under this, a plan to ban private digital currencies favours RBI backed currency.
  - A 3–6 month exit period prior to banning the trading, mining and issuing of cryptos.
  - Finally, Cryptocurrencies, though unregulated, are not illegal in India.