Drug Discovery Hackathon 2020

Why in News

Recently, the government has launched **Drug Discovery Hackathon 2020 (DDH2020),** a first of its kind national initiative for **supporting the drug discovery process.**

- The objective is to **identify drug candidates against** SARS-CoV-2 (Covid-19) by **in-silico drug discovery.**

In-Silico Drug Discovery

- In-Silico is an expression used to mean **"performed on computer or via computer simulation."**
- In-Silico drug discovery process is thus the identification of the drug target molecule **by employing bioinformatics tools.**

  - Drug target molecules generally include **DNA, RNA and proteins** such as receptors, enzymes etc.
  - Identification of drug target molecules help in knowing their pharmacological relevance to the disease under investigation.
- **Bioinformatics** is the application of computational technology (such as **Artificial Intelligence/Machine Learning**) to handle the rapidly growing repository of information related to molecular biology.

Key Points

- **Joint Initiative:** DDH2020 is a joint initiative of the Ministry of Human Resource Development (MHRD), **All India Council for Technical Education (AICTE)** and the **Council of Scientific and Industrial Research (CSIR)** and supported by partners like **Centre for Development of Advanced Computing (CDAC), MyGov** and private players.
- **Participants:** Researchers/Faculty across the world, students studying in India and abroad.
- **Functioning:**

  - It will primarily focus on computational aspects of drug discovery and will have three Tracks.
  - **Track-1** will deal with computational modelling for drug design or identifying 'lead' compounds from existing databases that may have the potential to inhibit SARS-CoV-2.
  - **Track-2** will encourage participants to develop new tools and algorithms using data analytics and AI/ML approach for predicting drug-like compounds with minimal toxicity and maximal specificity and selectivity.
  - **Track 3** will only deal with novel and out-of-the-box ideas in this field.
  - Participants will submit their ideas online after which the CSIR and other labs will work towards executing them.

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