

The new discipline, synthetic biology can act as a foundation for modern industrial revolution & will lead to creation of Industry 5.0. Justify.

Synthetic biology is a field of science that involves re-designing of organisms for useful purposes by engineering them with new enhanced abilities.

It aims to solve problems in varied fields ranging from medicine to manufacturing & agriculture.

Major concern of 21st century is unsustainable development & its feature industrial revolution requires sustainable ~~these~~ eco friendly manufacturing, here synthetic biology can make it.

* as synthetic biology uses DNA/genome sequences it is possible to produce cultured meat & food crops in future industries.

Ex:- Sugar substitute by Evolva company

* Raw materials to various industries can be synthetically produced rather

than pressurising already climate sensitive agriculture

Ex: - cotton fabric, synthetically produced through analyzing fiber

* Without destroying actual natural resources, like forests coals, manne replicating similar manufacture products with same features is possible

Ex: - Wood, synthetic coals

* In pharmaceutical industries synthetic biology plays an important role in production of drugs, vaccines, enzymes, protein etc

* Food industries, flavour & taste of animal, fruits can be recreated without actually using them.

* Dependency of petroleum products also zeroed by developing new generation fuels

UN convention on Biological diversity had been working to provide global framework to deal with synthetic biology, negative effects of these products not underestimated it requires more research on these products