

TD n°5 TCE**Introduction to Biotechnology**

Biotechnology is a multidisciplinary field that combines biology, technology, and engineering to develop innovative solutions for various industries. It involves the use of living organisms or their components to create or modify products, improve processes, or solve problems. One of the significant applications of biotechnology is in medicine. Through genetic engineering, scientists have developed techniques to produce therapeutic proteins, such as insulin and growth hormones, using genetically modified organisms (GMOs). This has revolutionized the treatment of diseases like diabetes and growth disorders. In agriculture, biotechnology has played a crucial role in crop improvement. Genetic engineering has enabled the creation of genetically modified crops that are resistant to pests, diseases, and environmental stresses. This has increased crop yields, reduced the need for chemical pesticides, and improved food security. Biotechnology also contributes to environmental conservation. Bioremediation, for example, uses microorganisms to break down pollutants and clean up contaminated sites. Additionally, researchers are working on developing biofuels as a sustainable alternative to fossil fuels, reducing greenhouse gas emissions and dependence on non-renewable resources. In the field of industrial biotechnology, enzymes produced by microorganisms are used to catalyze chemical reactions, making industrial processes more efficient and environmentally friendly. This includes the production of bio-based materials, such as bioplastics, which are biodegradable and reduce plastic waste.

Read the text and answer the following questions:

Q1) Give the main idea of the text.

Q2) Provide six keywords for the text.

Q3) what is the main purpose of biotechnology?

Q4) Give some examples (not mentioned on the text) of biotechnology in industries, agriculture, and medicine

Q5) in your opinion, what are the challenges that face biotechnology?

Questions about the ‘ terminology and lab report’ lecture

Q6) why we write lab reports?

Q7) how a good lab report should be structured?

Q8) what should we do when our experiment in the lab fails?

Q9) Find the suffixes, prefixes and their meaning in the following words:

Nonrenewable, abiosis, anaerobic, antibiotic, antimicrobial resistance, autotrophs, diploid, biodiversity, biomagnification, Vitamin, chlorophyll, insecticide, cytology, mycology, entomology, chlorophyll, chromatophore, microscopic, symbiosis.