



CBCS SCHEME

15BT833

Eighth Semester B.E. Degree Examination, June/July 2019

Environmental Biotechnology

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define pollution. Elaborate the sources of air and soil pollution. (08 Marks)
b. State the sources of heavy metals. Describe the various remedial measures to clean up heavy metals. (08 Marks)

OR

- 2 a. Analyse the effects of air pollution on humans, vegetation and materials. (08 Marks)
b. Elaborate the biosorption and detoxification mechanisms in microbes. (08 Marks)

Module-2

- 3 a. Distinguish between aerobic and anaerobic processes. List the unit operations in both the processes. (06 Marks)
b. Describe the aerobic attached growth processes in detail. (10 Marks)

OR

- 4 a. Discuss the various stages of anaerobic digestion with a note on technical process and conditions. (10 Marks)
b. Describe the use of genetically engineered organisms in wastewater treatment. (06 Marks)

Module-3

- 5 a. Define xenobiotics and highlight its characteristics. Discuss the biodegradation of Aliphatics and Polyaromatic hydrocarbons. (08 Marks)
b. Analyse the different methods of microbial treatment of oil pollution. (08 Marks)

OR

- 6 a. Compare and contrast different types of bioremediation with suitable examples. (08 Marks)
b. Describe the process of phytoremediation to clean up the environment. (08 Marks)

Module-4

- 7 a. Discuss the common prejudices against enzymes. (06 Marks)
b. Elaborate the advantages and disadvantages of biocatalysts. (10 Marks)

OR

- 8 a. Discuss various sources of enzymes. (06 Marks)
b. Describe the significance of catalytic antibodies. (10 Marks)

Module-5

- 9 a. Differentiate between (i) Biooxidation and Bioleaching (ii) Direct and Indirect Bioleaching. (08 Marks)
b. Discuss the bacterial oxidation of Chalcopryrite and Pyrite. (08 Marks)

OR

- 10 a. Elaborate the process of microbial desulfurization of coal. (08 Marks)
b. Describe the role of microbes and various processes involved in petroleum extraction. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.