

**M. SC. (ENVIRONMENTAL
SCIENCE) (MSCENV)**

Term-End Examination

December, 2025

**MEVE-13 : ENVIRONMENTAL
BIOTECHNOLOGY**

Time : 3 Hours

Maximum Marks : 100

Note : (i) Answer any **ten** questions.

(ii) All questions carry equal marks.

1. Explain the bioleaching process with suitable examples. 10
2. Explain the strategies to minimize silage degradation by undesirable micro-organisms. 10
3. Explain the functions and characteristics of xenobiotic compounds degrading micro-organism. 10

4. Explain the factors affecting the process of bioremediation. 10
5. What is bioscrubber ? Explain the processes involved in bioscrubber. List down the advantages and disadvantages of bioscrubber. 2+8
6. What are biofuels ? Explain the characteristic features of first generation and second generation biofuels. 2+8
7. What are bioplastics ? Discuss the applications, advantages and challenges for bioplastics. 2+8
8. What are biofertilizers ? Explain the characteristics of Nitrogen fixing biofertilizer. 2+8
9. Write short notes on the following : 5+5
 - (a) Biomonitoring
 - (b) Biomethanation
10. Explain the principles involved in anaerobic wastewater treatment with suitable diagrams. 10

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11. What are bioreactors ? Explain the different types of bioreactors and applications of bioreactors. 2+8
12. What are hemicelluloses ? Discuss the characteristics of hemicellulose degrading microorganisms. 2+8
13. Write short notes on the following : 5+5
- (a) Vermicomposting
 - (b) Greenhouse gases emissions from soil
14. What is trickling filter ? Explain the principles involved in the application of trickling filters in wastewater treatment with suitable diagrams. 2+8

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