

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

**Term-End Examination**

**December, 2025**

**MEVE-13 : ENVIRONMENTAL  
BIOTECHNOLOGY**

*Time : 3 Hours*

*Maximum Marks : 100*

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

(ii) All questions carry equal marks.

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