

**M. SC. (ENVIRONMENTAL
SCIENCE) (MSCENV)
Term-End Examination
June, 2025**

**MEVE-13 : ENVIRONMENTAL
BIOTECHNOLOGY**

Time : 3 Hours

Maximum Marks : 100

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

(ii) All questions carry equal marks.

1. What is activated sludge ? Explain the principles involved in activated sludge treatment with suitable diagrams. 2+8=10
2. What is solid waste ? Discuss the sources and classification of solid waste based on hazard potential, nature and origin. 2+8=10

3. What are Xenobiotics ? Explain the mechanism involved in biodegradation of xenobiotics. 2+8=10
4. What are nanomaterials ? Discuss the applications of nanotechnology in bioremediation. 2+8=10
5. What is lignin ? Discuss the characteristics of lignin degrading microorganism and processes involved in lignin biodegradation. 2+8=10
6. Write short notes on the following : 5+5=10
 - (a) Composting
 - (b) Mushroom cultivation
7. What is silage ? Explain the exsiting process and the role of saccharolytic and proteolytic organisms in making of silage. 2+8=10
8. What is carbon sequestration ? Discuss the role of forests in carbon sequestration. 2+8=10
9. Explain the functions of microbial enzymes in bioremediation with suitable examples. 10

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10. What is Bioremediation ? Explain the salient features of *in-situ* and *ex-situ* bioremediation methods. 2+8=10
11. Write short notes on the following : 5+5=10
- (a) Bioscrubber
 - (b) Biofilters
12. What is phytoremediation ? Explain the different types of phytoremediation. 5+5=10
13. What is bioleaching ? Explain the factors affecting the process of bioleaching. 2+8=10
14. What are biomarkers ? Explain the applications of biomarkers in environmental monitoring. 2+8=10

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