No. of Printed Pages : 3

MEVE–13

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

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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