

(i) Printed Pages : 2

Roll No.

(ii) Questions : 9

Sub. Code :

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| 2 | 5 | 9 | 4 | 4 |
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Exam. Code :

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M.Sc. (Bio-Technology) 2nd Semester
(2056)

ENVIRONMENTAL BIOTECHNOLOGY

Paper : MBIO-204

Time Allowed : Three Hours]

[Maximum Marks : 80

Note :— Attempt **five** questions in total. Q No. 1 is compulsory.
Attempt **one** question from each unit.

1. (a) Discuss the transports and diffusion of air pollutants.
- (b) What are ecotoxicological effects of soil pollutants?
- (c) Explain the principle of rotating biological contactor.
- (d) Why treatment of wastewater from antibiotic industry is required?
- (e) Define xenobiotics and give two examples.
- (f) What is biosorption in bioremediation?
- (g) What are characteristics of municipal solid waste?
- (h) Explain types of municipal solid waste. 2×8

UNIT-I

2. (a) What are objectives of air quality standards? Explain various air quality standards.
- (b) Explain monitoring methods of particulate air pollutants. 10,6

3. (a) How noise pollution is measured? Explain its impact on human health.
(b) Explain physicochemical and biological analysis of soil. 8,8

UNIT-II

4. (a) Discuss industrial wastewater treatment for distillery and sugar industries.
(b) Explain methods for measurements of water pollution. 10,6
5. (a) Describe chemical and biological wastewater treatment strategies.
(b) How does biotechnology play a role in a clean environment? 10,6

UNIT-III

6. (a) Discuss ecological factors influencing biodegradation of xenobiotics.
(b) Explain the role of degradative plasmids in microbial metabolism.
(c) Describe biodegradation pathways of pesticides. 5,5,6
7. (a) Discuss microbial bioremediation techniques for contaminated soils.
(b) Describe IPM strategies used in modern agriculture. 8,8

UNIT-IV

8. (a) Explain sources and composition of municipal solid waste.
(b) Describe recycling and transformation technologies used in waste management. 8,8
9. (a) Explain the steps involved in Environmental Impact Assessment.
(b) Discuss bioindicators used for monitoring pollution.
(c) Explain the principle and environmental applications of biosensors. 5,4,7