

2053  
M.Sc. (Biotechnology) Second Semester  
MBIO-205: Environmental Biotechnology

Time allowed: 3 Hours

Max. Marks: 80

**NOTE:** Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Attempt the following:-

- a) Define Photochemical smog.
- b) What is MPN in water pollution measurement?
- c) Give names of aerobes involved in secondary wastewater treatment.
- d) Differentiate between Biosensors and Bioindicators.
- e) What is BOD? How is it significant?
- f) What are Biofertilizers? Give examples.
- g) Define Thermal inversion.
- h) What are Degradative plasmids?

(8x2)

**UNIT - I**

II. a) What are Air Quality standards? How is Air Quality monitored?

b) Discuss methods to measure Noise Pollution.

(2x8)

III. a) Discuss the Fate of pesticides in soil.

b) Discuss methods for bacteriological analysis of Soil.

(2x8)

**UNIT - II**

IV. a) Discuss the Microbiology of Wastewater treatment.

b) Write the Working principle of Activated Sludge treatment.

(2x8)

V. Describe effluent characteristics and treatment strategies for Dairy and Sugar industry and Distilleries.

(16)

**UNIT - III**

VI. a) List factors contributing to Recalcitrance of Xenobiotics.

b) Discuss the Ecological considerations and Decay Behaviour of Xenobiotics in the environment.

(6,10)

P.T.O.

(2)

VII. Write notes on:-

- a) Bioremediation of contaminated soil.
- b) Integrated Pest Management.

(2x8)

**UNIT - IV**

VIII. a) Deliberate on Sources and composition of Municipal Solid Waste.

b) Write a note on Bioleaching.

(10,6)

IX. a) What is the principle of remote sensing and GIS? Discuss application in Ecological mapping.

b) What are Bioplastics? Discuss environmental significance and properties. (10,6)

x-x-x