

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9262

J

Unique Paper Code : 2534001201

Name of the Paper : Microbes in Environment Management

Name of the Course : **B.Sc. (Hon) Microbiology**

Semester : IV (UGCF)

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **four** questions.
3. **All** questions carry equal marks.
4. Attempt **all** parts of a question together.

1. (a) How is lignin degraded by microbes in the natural environment? (5)
(b) Comment on role of microbes in biogas production. (6)
(c) Explain microbial degradation of 2, 4, 5-T. (4)
2. (a) Discuss the Role of microbes in bioremediation of marine pollutants. (7)
(b) What do you understand by the term biofuel. Enlist any two types giving examples, substrate used, and microbes involved. (2+6=8)
3. Write short notes on the following (**any three**) : (5×3=15)
 - (i) Sanitary land fill
 - (ii) Anaerobic sludge digester

P.T.O.

(iii) Biogas production

(iv) Trickling filter

4. (a) What is nitrogen fixation. Name the enzyme involved in nitrogen fixation.
Give an example of symbiotic and non-symbiotic nitrogen fixer.

(3+1+2=6)

(b) Explain the process of composting, giving its various types? (6)

(c) Differentiate between Bio-augmentation and Bio-stimulation. (3)

5. (a) Write a short note on solubilization and Mineralization of Phosphorus.

(5)

(b) Briefly discuss role of microbes in bioremediation of soil contaminated by heavy metals. (6)

(c) Comment on working of septic tank. (4)