

6. (a) Discuss cellulose degradation giving examples of microbes involved. (4)
- (b) What is biogas? Write its usage. Comment on the role of microorganisms in its production. (6)
- (c) What is the importance of *Zooglea ramigera* in environment management? (2)

[This question paper contains 4 printed pages.]

**Your Roll No.....**

**Sr. No. of Question Paper : 6082**

**H**

Unique Paper Code : 2534001201

Name of the Paper : Microbes in Environmental Management

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

Semester : II (UGCF)

Duration : 2 Hours

Maximum Marks : 60

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** carry equal marks.

1. (a) Comment on the degradation of the pesticide 2,4-D. (4)

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(b) Give an example of a microbe used in (**any four**) :

(i) Hydrogen biofuel production

(ii) Recovery of Iron

(iii) Phosphorus solubilization

(iv) Symbiotic Nitrogen fixation

(v) Lignin degradation (1×4=4)

(c) What are different steps of primary sewage treatment ? (4)

2. Differentiate between the following (**any three**) :

(i) Ex-situ and In-situ soil Bioremediations

(ii) Ammonification and Denitrification

(iii) Dumping and Sanitary landfill

(iv) BOD and COD (4×3=12)

3. Write short notes on the following (**any three**) :

(i) Composting

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(ii) Role of microbes in plastic degradation

(iii) Marine bioremediation

(iv) Activated sludge process (4×3=12)

4. (a) Briefly explain the following :

(i) Heavy metal pollutants

(ii) Chlorination as a method of disinfection

(iii) Imhoff tank

(iv) Oxidation pond (3×4=12)

5. (a) Discuss about various types of solid wastes? What are their sources? (4)

(b) What raw materials are used for the production of Bioethanol?

How do certain microbes help in the bioethanol production? Give examples. (6)

(c) What is eutrophication? (2)

P.T.O.