

**Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous), Rajkot**  
Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION APRIL - 2018**

**M.Sc. Microbiology / M.Sc. Biotechnology**

**16PMBDC17 / 16PBTDC17 – ENVIRONMENTAL BIOTECHNOLOGY**

***Duration of Exam – 3 hrs***

***Semester – IV***

***Max. Marks – 70***

**Part A (5x2= 10 marks)**

Answer **ALL** questions

1. Differentiate between Bioremediation and Biodegradation.
2. Define: Activated Sludge. Enlist two aeration methods used in activated sludge process.
3. What is acid rain? Write two factors responsible for occurrence of acid rain.
4. Write two disadvantages of bioinsecticides.
5. Expand the term: UASB, MPN

**Part B (5x5 = 25 marks)**

Answer **ALL** questions

- 6a. Explain the role of Biotechnology in environmental protection with suitable example.

**OR**

- 6b. What is Greenhouse effect? Explain causes of Greenhouse effect.

- 7a. What are demerits of disposal of solid waste by incineration?

**OR**

- 7b. Describe different sources of generation of liquid waste.

- 8a. What is phytoremediation? Briefly explain advantages of phytoremediation process.

**OR**

- 8b. Explain: In situ bioremediation

- 9a. How microorganisms can be used as biofertilizer to enhance crop productivity?

**OR**

- 9b. What is biosensor? Explain components of biosensor with suitable diagram.

- 10a. Differentiate between r-selected and k-selected population.

**OR**

- 10b. Explain: confirmed test for bacteriological analysis of water.

**Part C (5x7 = 35 marks)**

Answer **ALL** questions

11a. Explain: Causes, effects and process of biomagnification.

**OR**

11b. Define contaminant. What is difference between pollutant and contaminant? Enlist various pollutant in water and their effects.

12a. Explain: Trickling filter.

**OR**

12b. Explain: Classification and disposal of MSW.

13a. Explain: Biodegradation of halogenated compounds with suitable example.

**OR**

13b. What are xenobiotic compounds? Describe biodegradation of xenobiotics with suitable example.

14a. Write a note on: Bt Cotton

**OR**

14b. What are biofuels? How they are produced? Explain with examples.

15a. Define succession. Explain stages of autotrophic succession process.

**OR**

15b. Enlist various airborne diseases. Explain the route of transmission of microbes in air with suitable example.

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