

## MSc Sem.-3 Examination

502

Microbiology

May 2022

Time : 2-00 Hours]

[Max. Marks : 50

Instructions: All questions in Section I carry equal marks  
Attempt any THREE questions in Section I  
Question IX in Section II is compulsory

## Section I (42 marks)

Q I	(a) What are Bioindicators. How are they used.	7
	(b) Write a detailed note on environmental laws of India <del>fermented Dairy Products-</del>	7
Q II	(a) Give an overview of strategies used to conserve the environment	7
	(b) Write a note global warming as an environmental problem.	7
Q III	(a) What is the impact of GMOs on Bioremediation.	7
	(b) Give the mechanism of phytoremediation.	7
Q IV	(a) Write a note on degradation of aliphatic hydrocarbons.	7
	(b) Write a short note on biodegradation of pesticides.	7
Q V	(a) Write a note on types of bioremediations.	7
	(b) Write the mechanism of Bioremediation of metals.	7
Q VI	(a) Explain the role of bacteria in dye degradation.	7
	(b) Explain <i>in situ</i> techniques in bioremediation	7
Q VII	(a) What are Assimilatory Biodeterioration, give examples.	7
	(b) Write a note on methods used to study biodeterioration.	7
Q VIII	(a) Discuss principles and mechanisms of biodeterioration.	7
	(b) Write a note on biodeterioration of Wood and paper.	7

## Section II (8 marks)

Q IX	Short Questions (One mark each)	
	1. What is acid rain	1
	2. Define Biosensors	1
	3. What is ex situ bioremediation	1
	4. Name two fungi which deteriorate pharma products	1
	5. Enlist two methods used to control biodeterioration of leather	1
	6. Define Detoxification	1
	7. What is Dump Leaching	1
	8. What is biotransformation	1