647510 **BSCmiMN352x-5C** **Seat No :_____**

B.Sc. Semester - 5 (Remedial) (NEP-2020) Examination
March/April-2026
MIC: Environmental Microbiology (Theory) (Minor-5)

Time: 2:00 Hours **Marks:50**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1	(1)	Explain the structure and function of terrestrial ecosystems, including soil profile and soil microflora.	(05)
	(2)	Describe the microflora of aquatic environments, including freshwater and marine habitats.	(05)
		OR	
	(1)	Describe the microbial communities in the animal environment, including humans (microbiome) and ruminants.	(05)
	(2)	Write detailed note on Halophiles.	(05)
Que.2	(1)	Describe symbiotic interactions between microbes and plants, giving suitable examples.	(05)
	(2)	Describe the role of microbes in ruminants and their contribution to digestion.	(05)
		OR	
	(1)	Explain non-symbiotic interactions of microbes with plants.	(05)
	(2)	Explain the role of nematophagus fungi in microbial–animal interactions.	(05)
Que.3	(1)	Explain the role of microbes in the carbon cycle.	(05)
	(2)	Describe nitrogen fixation and its importance in the nitrogen cycle.	(05)
		OR	
	(1)	Explain the microbial processes of ammonification, nitrification, denitrification, and nitrate reduction.	(05)
	(2)	Describe the phosphorus cycle and the role of microbes in phosphate immobilization and solubilization.	(05)
Que.4	(1)	Explain the sources and types of solid waste and their environmental impact.	(05)
	(2)	Describe the methods of solid waste disposal, including composting and sanitary landfill.	(05)
		OR	
	(1)	Explain the composition and strength of sewage, including BOD and COD.	(05)
	(2)	Describe primary, secondary, and tertiary sewage treatment methods.	(05)
Que.5	(1)	Explain the concept of extreme habitats and the types of extremophiles.	(05)
	(2)	Describe symbiotic luminescent bacteria and their interaction with animal hosts.	(05)
		OR	
	(1)	Explain the sulfur cycle and the types of microbes involved in sulfur transformations.	(05)
	(2)	Explain the principles of degradation of common pesticides and organic pollutants.	(05)

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