



'সমানো মন্ত্র: সগিতি: সমানী'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 4th Semester Examination, 2023

CC9-MICROBIOLOGY
(ENVIRONMENTAL MICROBIOLOGY)

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** from the following: 1×5 = 5
 - (a) Define bioremediation.
 - (b) What is ANAMOX?
 - (c) Define activated sludge.
 - (d) Define BODs.
 - (e) Name one symbiotic luminescent bacteria.
 - (f) Name one extremophiles used in biotechnological research.
 - (g) What is MPN?
 - (h) Name two microorganisms involved in nitrogen fixation.

2. Answer any **three** questions from the following: 5×3 = 15
 - (a) Write short notes on: 2½ ×2=5
 - (i) Adaptive features of Psychrophiles
 - (ii) Microflora of fresh water and marine habitats.
 - (b) Elucidate the mechanism of sulfur cycle with special emphasis on the microbes involved. 5
 - (c) Give details about tertiary treatment of waste water. 5
 - (d) What are Xenobiotic compounds and why microorganisms have difficulty to catabolising them? 2+3
 - (e) Describe the two methods of solid waste disposal. 2½ +2½

3. Answer any **two** of the following: 10×2 = 20
 - (a) Discuss about the Microbiology of deep sea ecosystem. Mention some of the adaptive features of oligotrophs. 5+5
 - (b) Write a brief note on hydrocarbon degradation. Discuss about the degradation of inorganic metal matter. 5+5
 - (c) Discuss about the secondary treatment process of waste water management. Explain the difference between carbonaceous BOD and autotrophic BOD. 6+4
 - (d) Write short notes on: 5×2=10
 - (i) MPN Test
 - (ii) Biosurfactants.

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