

B.Sc. Semester - 4 (NEP-2020) Examination**March/April-2026****MIC: Environmental Microbiology and Microbial Ecology (Minor-3)****Time: 2:00 Hours****Marks:50****Instructions:**

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

Que.1 (1) Define soil profile and describe different layers of soil. (05)

(2) Write a short note on microflora of freshwater. (05)

OR

(1) What is aero-microflora? Explain the dispersal of microorganisms in air. (05)

(2) Describe microorganisms present in the ruminant animals. (05)

Que.2 (1) What is solid waste? Explain sources and types of solid waste. (05)

(2) Describe methods of solid waste disposal: composting and sanitary landfill. (05)

OR

(1) Define sewage. Explain Biological oxygen demand. (05)

(2) Describe primary and secondary sewage treatment processes. (05)

Que.3 (1) Explain microbial degradation of pesticides and organic pollutants. (05)

(2) Write a note on biosurfactants. (05)

OR

(1) Explain treatment of drinking water. (05)

(2) Describe tests for potability of water: MPN test and membrane filter technique. (05)

Que.4 (1) Explain the carbon cycle with the role of microorganisms. (05)

(2) Describe the biological nitrogen fixation. (05)

OR

(1) Explain the phosphorus cycle. (05)

(2) Write a short note on Sulphur cycle and iron cycle. (05)

Que.5 (1) What are extremophiles? Describe microorganisms living in extreme environments. (05)

(2) Write a short note on the role of microorganisms in waste management. (05)

OR

(1) Explain the role of microorganisms in environmental pollution control. (05)

(2) Describe the importance of microorganisms in maintaining environmental balance. (05)
