

B.Sc. Semester - 4 (NEP-2020) Examination**March/April-2026****BIT: Environmental Biotechnology (Major-9)****Time: 2:00 Hours****Marks: 50****Instructions:**

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

- Que.1 (1) Explain firewood as a conventional fuel and discuss its environmental impact. (05)
(2) Describe plant- and animal-based fuels as energy sources and mention their advantages and disadvantages. (05)
- OR
- (1) Discuss coal and gaseous fuels as conventional fuels and their role in environmental pollution. (05)
(2) Explain the use of water as an energy source and its environmental impact. (05)
- Que.2 (1) Explain the concept of bioremediation and its importance in environmental protection. (05)
(2) Describe microbial bioremediation of soil and water contaminated with oil spills. (05)
- OR
- (1) Explain the role of microorganisms in the removal of heavy metals from contaminated environments. (05)
(2) Write a short note on biodegradation of detergents by microorganisms. (05)
- Que.3 (1) Explain the treatment of municipal solid waste with emphasis on biological methods. (05)
(2) Describe the treatment of industrial effluents using microbial processes. (05)
- OR
- (1) Define biofertilizers and explain their importance in sustainable agriculture. (05)
(2) Explain the role of symbiotic nitrogen-fixing bacteria in soil enrichment with suitable examples. (05)
- Que.4 (1) Explain the role of microorganisms in the bioleaching of copper. (05)
(2) Describe microbial enrichment of gold ores with suitable examples. (05)
- OR
- (1) Explain the role of microorganisms in uranium ore bioleaching. (05)
(2) Explain the environmental significance of genetically modified microorganisms. (05)
- Que.5 (1) Describe the role of methanogenic bacteria in biogas production. (05)
(2) What is phytoremediation? Explain its mechanisms and applications. (05)
- OR
- (1) Write a short note on algal biofertilizers and their agricultural applications. (05)
(2) Define bioleaching and explain its basic principle. (05)
