

M.Sc. (Micro) Semester - 3 (CBCS) Examination**Oct/Nov-2021 (NEW COURSE)****Ecology and Environmental Microbiology (Elective (New))****Time: 2:30 Hours****Marks: 70****Instructions:**

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

1. **Answer the following**
 - A. Describe the type of interactions discuss any two interactions in details. **07**
 - B. Explain role of biotic and abiotic factor in environment. **07**

OR

 1. What is community ecology? Discuss the edges and ecotones in species measurement. **14**
2. **Answer the following**
 - A. Write note on phytoremediation and bioremediation in detail. **07**
 - B. Explain the environmental pollution and its global changes. **07**

OR

 2. Discuss the terrestrial and aquatic ecosystem in detail with suitable examples. **14**
3. **Do as direct (any seven out of eight questions each of one marks)** **07**
 1. Explain ecological pyramid.
 2. Define the term symbiosis.
 3. Define r and k selection.
 4. Explain various stages of nitrogen cycle in brief.
 5. Define the function of phosphate in ecosystem.
 6. What are conservation approaches?
 7. What do you mean by biogeographic zones? Give a two example.
 8. Define the concept of metapopulation.

SECTION-II

1. Explain the bioremediation of petroleum hydrocarbons and elucidates its degradation pathways. **14**

OR

 1. **Answer the following**
 - A. Explain distillery effluent treatments. **07**
 - B. Discuss the management and treatment of municipal solid waste. **07**
 2. Explain microbial enhance oil recovery and its advantages in environmental perspective. **14**

OR

 2. **Answer the following**
 - A. Discuss the production of biofuel from waste in detail. **07**
 - B. Describe chemical method used for monitoring of environmental pollution. **07**
 2. **Do as direct (any seven out of eight questions each of one marks)** **07**
 1. Enlist the molecular method used for monitoring the pollutants.
 2. Explain the role of surfactant in biodegradation of organic compounds.
 3. Explain biostimulation.
 4. What is EIA? Explain in brief.
 5. Enlist the organisms used for remediation of heavy metals
 6. Give an example of biopesticides.
 7. Explain biogas production in brief.
 8. Enlist the types of biosurfactant.
