

Unique Paper Code : **32181302**
Name of Paper : **Environmental Biotechnology
(Core)**
Name of Course : **B.Sc. (Hons) Environmental Sciences**
Semester : **III**
Duration: **3 hours** Maximum marks: **75**

*Attempt **any four** questions. All questions carry **equal** marks.*

1. “Both DNA modifying and restriction enzymes are essential for manipulation of DNA in genetic engineering.” Justify the statement using specific examples.
2. What are the major constituents of industrial wastewater? Describe the essential features of various biological treatment methods used for industrial wastewater. How can you differentiate between the treatment mechanisms of suspended cells and attached cell bioreactors?
3. In industries, specific microbes can be employed to extract valuable elements. How and why would you like to choose microbes to extract metals? How and why do microbes accumulate or transform metals?
4. Do you think, after translation, modifications of most proteins remain essential to maintain their structure and functions in the cells? Justify your answer.
5. How can you use microbes for remediation of toxicants in situ or ex situ environment? Explain different methods available for in situ bioremediation with their merits and demerits.
6. How do wastewater schemes differ in dairy, distillery, tannery, sugar, and antibiotic industries? How can solid waste be managed to minimize the hazard and convert them to useful products?