

This question paper contains 2 printed pages.

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Your Roll No.

M.Sc. / I

J

ENVIRONMENTAL BIOLOGY— Paper VIII
(Biotechnology in Resource Enhancement and
Ecosystem Redevelopment)

Time : 3 hours

Maximum Marks : 45

(Write your Roll No on the top immediately on receipt of this question paper.)

Attempt any five questions.
All questions carry equal marks.

- 1 Write short notes on any *three* of the following
 - (i) Stable isotope probing
 - (ii) Global warming and green house gases
 - (iii) Plant nodulation genes
 - (iv) Disposal of wastes in landfill is a short-term solution

3 × 3
2. Elucidate on the evolutionary stability of mutualistic interactions.

9
- 3 Minex mining company was involved in large scale mining for quartz in a protected forest somewhere in Rajasthan and subsequently abandoned the mines. As a result of unplanned mining, the forests have been completely denuded You have been requested by the Rajasthan Government to restore ecosystem of the abandoned mines Explain how you would proceed?

9
4. Explain how nucleic acid analyses can be used for soil ecological studies?

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5. Microbial treatment of wastes is possible through aerobic and anaerobic methods Describe the methods and write the merits and demerits of each

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- 6 What are the impacts of industrial effluent discharge into river and other water bodies?

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7 Describe aerobic and anaerobic methods to treat waste waters and control pollution and justify that anaerobic digestion is good for waste stabilization. Describe various steps from complex organic matter to methane and carbon dioxide

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8 Describe the biological and physical methods to handle the ligno-cellulosic agricultural and forest wastes like husk, straw, shells, etc How do you propose to use them as a non-conventional energy source?

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