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REVE-003

**Ph. D. (ENVIRONMENTAL
SCIENCE) (PHDEV)**

Term-End Examination

December, 2025

**REVE-003 : ENVIRONMENTAL
BIOTECHNOLOGY**

Time : 3 Hours

Maximum Marks : 100

Note : (i) *Attempt any five questions.*

(ii) *All questions carry equal marks.*

1. What is environment ? Discuss the role of biotechnology in pollution control and environmental clean up. 20
2. What is bioremediation ? Differentiate between *ex-situ* bioremediation and *in-situ* bioremediation technologies. Also give their advantages and limitations. 20

3. Write short notes on any *four* of the following : 4×5=20
- (i) Microbial metabolism
 - (ii) Microbial pesticides/insecticides
 - (iii) Biomining
 - (iv) Land farming
 - (v) Value added products from wastes
4. Define and classify wastes. Discuss the various biological methods of solid wastes treatment. 20
5. What are biomarkers ? Describe the role of biosensors and biomarkers in environment monitoring and pollution control. 20
6. Discuss the impact of improper wastewater disposal on environment. Describe various aerobic and anaerobic wastewater treatment techniques. 20
7. Write short notes on any *two* of the following : 2×10=20
- (i) Biofuel

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(ii) Intellectual Property Rights

(iii) Genetically modified organism

(iv) PGPR

8. Describe a research problem selecting a suitable topic from your course content. Discuss methodology, operation plan, expected outcomes and significance of the problem. 20

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