



M.Sc. IV Semester Degree Examination, October - 2023

BIOTECHNOLOGY

ENVIRONMENTAL BIOENGINEERING

(NEP)

Time : 3 Hours

Maximum Marks : 70

Note : (i) Answer **any five** of the following questions with Question no. **1 (Q.1) compulsory**, each question carries **equal** marks.

(ii) Draw neat diagrams wherever necessary.

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| 1. | (a) | <i>In-situ</i> and ex-situ bioremediation. | 7 |
| | (b) | Discuss the sources of heavy metal pollution. | 7 |
| 2. | | Discuss the emerging biotechnological processes in waste water treatment. | 14 |
| 3. | | Give an account on physical and chemical treatment of solid waste. | 14 |
| 4. | (a) | Write a detailed account on production of biofuel from industrial waste. | 7 |
| | (b) | Role of biofertilizer in crop improvement. | 7 |
| 5. | (a) | Give an account on biomethylation of mercury and arsenic. | 7 |
| | (b) | Write a role of commercial biosorbents and its applications. | 7 |
| 6. | (a) | Give an account on vermicompost production and its advantages. | 7 |
| | (b) | Give an account on membrane technology in waste water treatment. | 7 |
| 7. | (a) | Give an account on advantages and applications of biocatalysts. | 7 |
| | (b) | Discuss the advantages and disadvantages of bioleaching. | 7 |
| 8. | (a) | Give an account on dye industry waste water treatment methods. | 5 |
| | (b) | Give an account on biopesticides. | 5 |
| | (c) | Give an account on importance of biosorption. | 4 |

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