

2124
B.Sc. (Hons.) Biotechnology
First Semester
BIOT-106-T: Introduction to Biotechnology

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following:-

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|--|---|
| a) Name two viruses that play a role in Biotechnology. | 2 |
| b) What is a phosphodiester bond? | 2 |
| c) What are type II restriction Endonucleases? | 3 |
| d) What is gene therapy? | 2 |
| e) What is a GMO? | 2 |
| f) What is Bioterrorism? | 2 |
| g) What is green technology? | 2 |

UNIT - I

- II. a) Discuss the role of *E. Coli* in Biotechnological research.
- b) Discuss role of *Neurosporacrassa* in Molecular Biology research. (7,6)
- III. a) Discuss the features of *Arabidopsis thaliana* as a model for plant genetics.
- b) Describe how viruses have revolutionized recombinant DNA technology. (7,6)

UNIT - II

- IV. a) Discuss the structural features of prokaryotic cell.
- b) Discuss the structure of DNA. (7,6)
- V. a) Give an overview of metabolomics.
- b) Discuss the properties and applications of pUC8. (6,7)

UNIT - III

- VI. Discuss role of green technology in pollution control. (13)
- VII. a) Discuss significance of Biotechnology innovation for Diagnostics.
- b) Discuss the present applications of Biotechnology. (6,7)

UNIT - IV

- VIII. a) Discuss different techniques to raise transgenic animals.
b) Explain ethical aspects of Biotechnology research. (7,6)
- IX. Discuss different types of Biological warfare and public concern alongwith risk associated with genetic engineering. (13)

X-X-X