

1129

B.Sc. (Hons.) Biotechnology

First Semester

BIOT-Sem-I-VI-T: Introduction to Biotechnology

Time allowed: 3 Hours

Max. Marks: 67

NOTE: Attempt five questions in all, including Question No. IX (Unit-III) which is compulsory and selecting two questions each from Unit I-II.

x-x-x

UNIT – I

- I. a) What are the salient characteristics of *Sachharomyces cerevisiae* that make it an ideal Model Organism for genetics research?
b) Why Bacteria are referred to as workhorses of Biotechnology (7,6)
- II. a) Discuss the applications of Bacteriophages in Biotechnology.
b) Why *Drosophila melanogaster* is regarded as the model organism? (7,6)
- III. a) Explain the various Sterilizations techniques used in Biotechnology.
b) Explain the principle and applications of Affinity chromatography. (7,6)
a) Discuss the role of Bioinformatics in Biotechnology.
- IV. b) What are the salient features of YACs? Explain with diagram. (7,6)

UNIT – II

- V. What is Gene therapy? Briefly discuss human gene therapy. (13)
- VI. Briefly describe the various methods used by Green Biotechnology to control pollution. (13)
- VII. Explain the different applications of Transgenic animals. (13)
- VIII. Write a short note on Bioterrorism. (13)

UNIT – III

- IX. Attempt the following:-
a) Properties of good vector
b) Phage Therapy
c) Role of Viruses (any three)

(2)

- d) Sonication
- e) Define Transcriptomics and Proteomics
- f) Gel electrophoresis
- g) Ultracentrifuge
- h) ELSI
- i) Biowarfare
- j) Name any three commercial products of fermentation along with their source organism (10x1½)

x-x-x