



BOTANY

Biotechnology - I
(Genetic Engg. of Plant and Microbes)

Note : Answer **all** questions. All questions carry equal marks.

1. Write down the principles of gene cloning and explain the role of restriction endonuclease in gene cloning with suitable examples.

Write notes on the following :

- (a) Principles and scope of Biotechnology
- (b) Bacteriophage vectors

(2)

Unit-II

2. Explain various methods of vector mediated gene transfer and discuss their advantages and limitations.

OR

Write notes on the following :

- (a) Bacterial Transformation
- (b) Transgenic plants

Unit-III

3. Describe the mechanism of Polymerase Chain Reaction.

OR

Write short notes on the following :

- (a) DNA Fingerprinting
- (b) DNA Sequencing

Unit-IV

4. What is gene mapping ? Explain genetic and physical mapping of genes with suitable examples and discuss the role of gene mapping in Biotechnology.

OR

(3)

Write short notes on the following :

- (a) Microarrays
 - (b) Protein profiling
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