

2021  
B.A./B.Sc. (General) Fifth Semester  
Bioinformatics  
BNE-5002: Genetic Engineering

Time allowed: 3 Hours

Max. Marks: 67

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

x-x-x

I. Answer the following briefly:-

- a) Shuttle vectors
- b) Endonucleases
- c) YAC
- d) dNTPS
- e) Vector
- f) PHRED
- g) High throughput sequencing
- h) BAC
- i) Antibiotic resistance
- j) Selectable marker

(10 x 1½)

UNIT – I

II. Discuss the shotgun genome sequencing method. (13)

III. a) Explain the automated method of DNA sequencing. (7,6)  
b) Discuss the principle of Pyrosequencing.

IV. Explain the Maxam and Gilbert Method for DNA sequencing. (13)

V. a) Discuss the principle and applications of Next generation sequencing. (9,4)  
b) What is the advantage of using dideoxy nucleotides?

P.T.O.

(2)

UNIT - II

- VI. a) Discuss the construction, applications of Plasmid and Phagemid with egs. (13)
- VII. a) Explain the applications and features of Mammalian Expression Vectors.  
b) What are yeast cloning vectors? Give egs. (8,5)
- VIII. a) What are plant vectors? Explain their applications.  
b) What are the advantages of cosmid vectors? (8,5)
- IX. a) Discuss the multipurpose cloning vectors and their uses.  
b) Describe the features of expression vectors. (7,6)

x-x-x

C4KNOWLEDGESEEKERS