

Exam.Code:0038

Sub. Code: 0987

2071

B.Sc. (Hons.) Biotechnology

Sixth Semester

BIOT- Sem-VI-I-T: Genetic Engineering

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. Attempt the following:-

- a) What are Neoschizomers? Give examples. (3)
- b) What are Shuttle Vectors? (2)
- c) What are Reverse transcriptases? (2)
- d) Why is PCR called Exponential amplification? (2)
- e) What are Concatamers? (2)
- f) What are double digests and partial digests? (2)
- g) What is Stuffer Fragment? (2)

UNIT - I

- II. a) What are Type II Restriction Endonucleases? Discuss their Characteristic features.
b) Draw comparison between DNA Pol I and Klenow Fragment. (8,5)
- III. a) What are Hot start PCR and Inverse PCR? Explain significance.
b) Deliberate on Applications of PCR. (7,6)

UNIT - II

- IV. a) What are Insertion and Replacement vectors? Discuss with examples.
b) What is Insertional Inactivation? Explain application with example. (7,6)
- V. Write about various Cloning vectors in yeast. (2x6½)

UNIT - III

- VI. Write notes on:-
 - a) Colony Hybridization
 - b) Functional complementation based screening. (2x6½)

P.T.O.

(2)

- VII. a) Discuss strategy for full length cDNA synthesis.
b) Write methods for mRNA enrichment. (2x6½)

UNIT - IV

- VIII. Write notes on:
a) Pyro sequencing.
b) Strand Selection mutagenesis. (2x6½)
- IX. a) Write about promoter designs for Recombinant protein production in Yeast.
b) Discuss problems with recombinant protein production in *E.coli*. (2x6½)

x-x-x