

1058

B.Sc. (Hons.) Bio-Informatics

Fourth Semester

BIN-4001: rDNA Technology and Biochemical Techniques

Time allowed: 3 Hours

Max. Marks: 60

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

x-x-x

I. Attempt the following:

- a) What is the special feature of the DNA polymerase used in PCR experiments?
- b) What is a cDNA?
- c) Discuss briefly the technique of ultracentrifugation?
- d) What is an expression vector? Give a suitable example.
- e) Give the functions of RNAaseH and alkaline phosphatase in recombinant DNA technology.
- f) What is immune-screening? (6x2)

UNIT – I

- II. a) Write a note on screening of genomic libraries.
- b) Discuss the use of plasmid in cloning experiments. (2x6)
- III. a) Compare and contrast the types of restriction endonucleases. (6)
- b) Write notes on the following:-
 - i) Steps in a PCR experiment
 - ii) Mammalian expression vectors (2x3)
- IV. a) Compare and contrast genomic and cDNA library.
- b) What are multipurpose cloning vector? Give a suitable example. (8,4)

UNIT – II

- V. Write notes on the following:-
 - a) Gel filtration chromatography
 - b) 2-D PAGE (2x6)

P.T.O.

(2)

- VI. a) Discuss the technique of isoelectric focusing and its applications.
b) Explain the principle ion-exchange chromatography. (8,4)
- VII. a) Compare and contrast native and SDS-PAGE.
b) Discuss any one application of paper chromatography. (8,4)

x-x-x