

2054

B.E. (Biotechnology) Sixth Semester
BIO-611: Recombinant DNA Technology ✓

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

I. Attempt the following:-

- a. What is the role of Alkaline phosphatase? (1)
- b. What is the advantage of using YAC? (1)
- c. What is the composition of Ri plasmid? (1)
- d. Give the application of Ligase. (1)
- e. How is the DNA quantified? (1)
- f. Define genomic DNA library. (1)
- g. Define restriction map. (1)
- h. Name any one method used for DNA sequencing. (1)
- i. What is the advantage of a cosmid vector? (1)
- j. What do you understand by phage display system? (1)

SECTION-A

- II. a) What are restriction endonucleases? Discuss different types and the activities associated with these enzymes. (5)
- b) Briefly describe both the features and role of Ti vectors in plants. (5)
- III. Explain the basic features of the plasmid vector DNA molecule and that of retroviral based vector DNA molecule. (5+5)
- IV. a) Describe the method used for the isolation and purification of plasmid DNA from the bacterial cell. (5)
- b) Write a short on polymerase chain reaction (PCR). (5)

SECTION-B

- V. a) Explain the process of immunological screening of the translational product. (5)
- b) Describe screening gene library by using any one probe hybridization. (5)
- VI. a) Explain any one method used for studying the protein-protein interactions. (3)
- b) Describe the Safety measures and regulations for recombinant DNA work. (4)
- c) Give the applications of RDT in the fields of environment. (3)
- VII. Write short notes on the followings:-
- a) Gene editing
- b) Gel retardation assay
- c) RT-PCR
- d) Expression vector
- e) FISH

(5x2)

x-x-x