2015

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. I which is compulsory and selecting two questions from each Unit.

x-x-x

I.   Answer the following:-

a) What is a PCR technology give its one application?

b) Are cosmids natural or synthetic vectors, justify your answer?

c) Give the names of two viral vectors used in Bacteria.

d) How is exonuclease different from endonuclease give atleast one example of each?

e) What is a shuttle vector cite one example.

f) What do you mean by DNA hybridization, give atleast one example of this methodology?

g) What is site specific mutagenesis? How is it different from random mutagenesis?

h) What type of DNA polymerase is used in PCR and why?

i) What do you mean by genomic library?

j) Provide important features of an expression vectors.   (10x1)

UNIT - I

II. a) What are plasmids, discuss in detail the characteristics of pBR322 series of plasmid vectors along with their method of selection.

b) Discuss the use of lambda (λ) virus as a vector for Recombinant DNA technology.

(7+3)

III. a) Discuss in detail different methods for isolation of Plasmid DNA from Bacterial Cell.

b) What are DNA polymerases, discuss their role use in recombinant DNA Technology.

(6+4)

IV. Write notes on any two for the following:

a) YAC vectors

b) PCR Methodology and its applications

c) Ti plasmids   (5+5)

P.T.O.

UNIT - II

V. a) What do you mean by gene library, discuss different methods for identifying a cloned gene?

b) How is S1 nuclease used for studying expression of a gene.   (7+3)

VI. a) Discuss in detail Maxam-Gilbert method of DNA sequencing

b) Write a short note yeast two hybrid system.   (5+5)

VII. a) Discuss applications of Recombinant DNA Technology in agriculture.

b) Write a note on gel retardation and its applications.   (5+5)

x-x-x