Exam.Code:0910
Sub. Code: 6714

(23)

1059

B.E. (Biotechnology) Sixth Semester

BIO-611: Recombinant DNA Technology

e allowed: 3 Hours

Max. Marks: 50

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

x-x-x

1. Write a short notes on the following:-
   a) Define plasmid
   b) Steps involved in PCR-OLA
   c) Define molecular stichers
   d) Who discovered 1st restriction endonuclease
   e) What is Bt cotton
   f) Structural features of an expression vector
   g) Define high throughput sequencing
   h) What is siRNA technology
   i) Features of fosmid
   j) Application of gel retardation method (10x1)

UNIT – I

2. a) Define vector. Differentiate between plasmid and lambda phage derived vectors.
   b) Differentiate between BAC and YAC vectors. (6,4)

3. a) Write a detailed note on restriction endonuceases.
   b) Describe in detail the technique and applications of PCR. (2x5)

4. a) Give details of vectors available to transfect animal cells. Identify the best suited vector and give reason.
   b) Design a gene cloning experiment explaining the importance of alkaline phosphatase and kinase enzyme. (6,4)

UNIT – II

5. a) Explaining methodology in detail, justify Solexa technology is a fast technique than Sanger sequencing method for finding DNA structure.
   b) Formulate a strategy to identify an antibiotic gene using direct-selection method. (2x5)

P.T.O.

VI. a) Describe different methods employed to confirm interactions between two proteins.

b) Compare different expression hosts according to their ability to express a eukaryotic protein. (2x5)

VII. a) Write a detailed note on gene therapy. Shed light on general ethical concerns related to transgenic plants.

b) Explain the genetic engineering strategies employed to achieve herbicide tolerant crop plants. (6,4)

x-x-x