12.12.18 (M)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 446 **IC**

Unique Paper Code : 42237903

Name of the Paper : Animal Cell Biotechnology

Name of the Course : **B.Sc. (Prog) DSE-3**

Semester : V

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt five questions in all including Qusetion No. 1 which is compulsory

1. (a) Define: (5)

   (i) Chimeric DNA

   (ii) Transformation effciency

   (iii) Phagemid

   (iv) Conjugation

   (v) Gene knockout

P.T.O.

(b) Differentiate between the following (10)

(i) Expression and Shuttle Vector

(ii) Transgenic animal and cloned animal

(iii) Neo and Caudoischizomers

(iv) Blunt and cohesive ends

(v) Phosphatases and ligase

(c) Expand the abbreviations: (5)

(i) BAC

(ii) pBR 322

(iii) ddNTP

(iv) SDS PAGE

(v) BSA

(d) Write important contributions of the following: (5)

(i) Hamilton Smith and D. Nathan

(ii) Griffith

(iii) Cohen and Boyer

(iv) W. N. Burnette

(v) Temin and Baltimore

(e) Write the importance of following in biotechnology (2)

(i) Reverse transcriptase

(ii) Multiple cloning site

(iii) *Lac z*

(iv) Humulin

2. (a) What is gene cloning? What are different steps for successful gene cloning? (7)

(b) Write an account on Artifical chromosomes as cloning vectors. (5)

3. (a) What are different methods for induced transformation of a bacterial cell? (6)

(b) What are DNA chips? Add a note on their advantages and applications. (6)

4. (a) Describe the use of rDNA technology in the production of a recombinant drug/protein. (6)

P.T.O.

(b) Describe briefly microinjection method for the production of transgenic animals. (6)

5. (a) What are VNTRs? How can these be used for identification of an individual. (7)

(b) Describe the technique of DNA sequencing using Sanger method. (5)

6. (a) Describe various strategies of gene therapy in the cure of any human genetic disease. Add a note on the advantages over conventional methods. (7)

(b) Write the importance of Agrobacterioum in the production of transgenic plants. (5)

7. Write short note on any three of the following: (3×4)

(i) Colony hybridization method

(ii) Southern blotting

(iii) Type II restriction endonucleases

(iv) PCR