Total No. of Questions : 6]

SEAT No. :

P2002

[Total No. of Pages : 3

[5145]- 607
Third Year B.Pharmacy
367:PHARMACEUTICAL BIOTECHNOLOGY
(2013 Pattern) (Semester - VI)

Time :3 Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answers to the two Sections should be written in separate books.***
2) ***Neat diagrams as well as flow-charts must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions are compulsory.***

SECTION - I

Q1) Explain steps involved in recombinant DNA technology.

Add a note on - Production of rDNA constructs and uses for Somatotropin. **[10]**

OR

What do you understand by Gene Cloning?

What are various types of cloning vectors involved in the process?

Describe the role of expression vectors in recombinant DNA technology with suitable examples.

Q2) Answer ANY FIVE of the following. **[15]**

a) Define the following-

i) Biotechnology

ii) Recombinant DNA and

iii) Enzyme Immobilization.

b) Enlist applications of biotechnology to Pharmaceutical Industry.

P.T.O.

c) Write significance of enzymes acting on DNA

i) Polymerase ii) SI nuclease iii) Ligase

d) How will you transfer gene by transduction method?

e) Give principle and applications involved in gel electrophoresis

f) What is melting temperature? Write its significance in DNA hybridization.

g) Explain the steps involved in isolation of DNA.

Q3) Write short notes on ANY TWO of the following. **[10]**

a) Gene synthesis

b) Features of a vector required to facilitate cloning

c) Site directed mutagenesis

d) Gene sequencing

SECTION - II

Q4) Give details of strain improvement, media, different stages of fermentation and product recovery in production of any one vitamin of your interest. **[10]**

OR

What is hybridoma technology?

Explain the steps involved in the production of monoclonal antibodies and applications.

Q5) Answer ANY FIVE of the following . **[15]**

a) What is enzyme immobilization? Enumerate use of immobilized enzymes in medicine with suitable examples

b) Give methods for creating transgenic animals and explain any one of them with suitable examples.

c) Enlist various criteria to be considered in designing of a fermentor.

Draw a neat schematic labeled diagram of fermentor.

d) What are palindromic nucleotide sequences? Give its significance.

e) Explain in brief-Steps involved in Cryopreservation.

f) Write a brief account on production of insulin by rDNA technology.

g) How to control foam during fermentation?

Q6) Write short notes on ANY TWO of the following: **[10]**

a) Antibiotic production by fermentation

b) Down stream processing

c) Interferon production by rDNA technology

d) cDNA library