

Total No. of Questions : 6]

SEAT No. :

P3174

[Total No. of Pages : 3

[5245]-607

**T.Y.B.Pharmacy (Semester - VI)**  
**PHARMACEUTICAL BIOTECHNOLOGY**  
**(2013 Pattern)**

*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) Black Figures to the right indicate full marks.*
- 4) All questions are compulsory.*

**SECTION - I**

**Q1)** Give the principle of r-DNA technology along with significance of enzymes. Enlist and explain various methods of screening the recombinants. **[10]**

OR

Define Biotechnology.

Write a detailed account on scope, potential and achievements of biotechnology to pharmaceutical sciences.

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

- a) Enlist different genetic engineering techniques. Add a note on DNA hybridization.
- b) Explain steps involved in isolation of DNA.
- c) What is gene transfer? Enlist methods of gene transfer and explain any one of them?
- d) Give benefits and method of preparation of cDNA
- e) Explain principle and applications involved in Gel electrophoresis or Southern blotting.

**P.T.O**

- f) Write significance of enzymes acting on DNA
  - i) Restriction endonuclease
  - ii) Ligase
  - iii) Alkaline phosphatase
- g) Enumerate types of cloning vectors. Add a note on COSMID as vector.

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

- a) Expression vector
- b) RFLP
- c) Human gene therapy
- d) Gene sequencing methods

### **SECTION - II**

**Q4)** What do you mean by hybridoma technology? Explain steps involved in monoclonal antibodies production and its applications. **[10]**

OR

Explain benefits of recombinant DNA products. Write a detailed account on human insulin production by rDNA technology.

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

- a) What is enzyme immobilization? Give applications of Enzyme immobilization
- b) Explain methods of germplasm storage
- c) Describe components and working of fermentor.

- d) Give benefits of transgenic animals with suitable examples
- e) How to control foam during fermentation?
- f) Explain the process of manufacturing of antibiotic by fermentation with suitable example
- g) Give role of HAT medium in monoclonal antibody production

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

**[10]**

- a) Down stream processing
- b) Interferon production by rDNA
- c) Production of vitamin by fermentation
- d) Human Gene therapy

