

Duration: 3 Hours

Total marks: 80

N.B. : 1. All questions are compulsory

2. Draw neat labelled diagrams wherever necessary.

- Q. 1 Answer the following questions. 20**
- a What is the scope of biotechnology? 2
 - b Enlist the advantages and disadvantages of continuous fermentation. 2
 - c Give the Principle of rDNA technology. 2
 - d Write a note on SDS-PAGE. 2
 - e Define immobilization, enlist the methods of immobilization. 2
 - f Write a note on use of microbes in industry. 2
 - g Write a note on specific defence mechanism. 2
 - h What is hypersensitivity? 2
 - i Give storage conditions of vaccines. 2
 - j Write a note on primary cell culture. 2

- Q. 2 Answer the following questions. 12**
- a Explain mechanically stirred fermenters. 4
 - b Write a note on Down stream process. 4
 - c Write a note on cloning vectors. 4

OR

Enlist the enzymes involved in rDNA technology.

- Q. 3 Answer the following questions. 12**
- a Explain the process of production of Interferon using rDNA technology. 4
 - b Write in details about PCR. 4
 - c Explain any one method of DNA sequencing. 4

OR

Write a note on transgenic animals.

- Q. 4 Answer the following questions. 12**
- a Write in detail about biosensors. 4
 - b Explain the factors affecting pathogenicity and infection. 4
 - c Write a note on cell mediated Immunity. 4

OR

Draw and explain antibody structure.

- Q. 5 Answer the following questions. 12**
- a Write a note on ELISA. 4
 - b Explain what is hybridoma technology? 4
 - c Give the method of preparation of Diptheria vaccine. 4

OR

Outline general method of preparation of BCG vaccine.

- Q. 6 Answer the following questions. 12**
- a Write a note on tissue culture media. 4
 - b Write about microbial biotransformation and give its applications. 4
 - c Give applications of Bioinformatics in Pharmaceutical industry. 4

OR

How you will apply bio-informatics for faster drug research based on computers and biotechnology.
