

Roll No.....

Total No. of Printed Pages: [01]

Total No. of Questions: [13]

**B. Pharmacy (Semester-6<sup>th</sup>)**  
**PHARMACEUTICAL BIOTECHNOLOGY**  
**Subject Code: BP605T**  
**Paper ID: [17170133]**

**Time: 03 Hours**

**Maximum Marks: 75**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 09 questions of 05 marks each. The student has to attempt any 07 questions out of it.
3. Section C consist of 03 questions of 10 marks each. The student has to attempt any 02 questions.

**Section – A**

**(2 marks each)**

Q1. Attempt the following:

- a) What are restriction endonucleases? Give examples?
- b) Write some applications of biosensors in pharmaceutical industry?
- c) Define transformation and transduction process?
- d) What is immunoblotting?
- e) Mention *any two* examples for viral vaccines?
- f) Give industrial applications of peroxidases?
- g) Classify types of immunity?
- h) Define immunostimulants and immunosuppressants with examples?
- i) Define point mutation with example?
- j) Define plasma substitutes with examples?

**Section – B**

**(5 marks each)**

- Q2. Enumerate various applications of western blotting technique?
- Q3. Write various methods of conversion of toxin to toxoids?
- Q4. Write a brief note on transposable elements with examples?
- Q5. Write a brief account on microbial biotransformation and mention its applications?
- Q6. Outline briefly on the storage and stability conditions for vaccines?
- Q7. Describe a large scale production fermenter design and its various controls?
- Q8. Write a brief note on ELISA?
- Q9. Discuss various structure and function of MHC?
- Q10. Write a brief account on Recombinant DNA technology? Mention its applications?

**Section – C**

**(10 marks each)**

- Q11. Describe in detail about the production of penicillin by fermentation method?
- Q12. Discuss in detail about Hybridoma technology with production and applications?
- Q13. Define polymerase chain reaction (PCR)? Write detailed steps involved in PCR?