

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BPH  
BRANCH: PHARMACY**

**SEMESTER: VI  
SESSION: SP/2022**

**SUBJECT: BP605T PHARMACEUTICAL BIOTECHNOLOGY**

**TIME: 3.00 Hours**

**FULL MARK: 75**

**INSTRUCTIONS:**

1. The missing data, if any, may be assumed suitably.
  2. Before attempting the question paper, be sure that you have got the correct question paper.
  3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
  4. This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.
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**PART-I**

**(Objective types questions: Answer all questions)**

- Q1. (10 x 2 = 10 Marks)
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|---|-------|
| A. List out different biosensors with examples of each class.                 | [CO1] |
| B. Differentiate between active and passive immunity.                         | [CO2] |
| C. Differentiate between vaccine and sera.                                    | [CO3] |
| D. What is the main difference between endonuclease and exonuclease activity? | [CO2] |
| E. Explain the advantages of pUC8?  | [CO2] |
| F. What are the factors of migration of a molecule in electrophoresis medium? | [CO2] |
| G. Write the composition of a suitable restriction enzyme buffer.             | [CO2] |
| H. What are the characteristic features of DNA polymerase I?                  | [CO2] |
| I. Categorize vaccines with examples.   | [CO3] |
| J. What is primer dimer?  | [CO2] |

**PART-II**

**Short Answers**

**(Instruction: Answer seven out of nine questions)**

(7 x 5 = 35 Marks)

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|--|-------|
| Q2. Elaborate about the principle and method of Western Blotting                 | [CO3] |
| Q3. Elaborate the process of microencapsulation.                                 | [CO1] |
| Q4. Describe mechanisms of different antigen-antibody reactions                  | [CO2] |
| Q5. Discuss the process of phagocytosis in the light of immunological reactions. | [CO2] |
| Q6. What are insertion and replacement vectors?                                  | [CO2] |
| Q7. Describe the process of gel electrophoresis.                                 | [CO2] |
| Q8. Detail out the strategies of recombinant insulin preparation?                | [CO3] |
| Q9. What is the principle of creation of hybridoma cells?                        | [CO3] |
| Q10. Discuss the principle and method of indirect ELISA                          | [CO2] |

**PART-III**

**Long Answers**

**(Instruction: Answer two out of three questions)**

(2 x 10 = 20 marks)

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|--|-------|
| Q16. Discuss the process of complement activation by Classical and Alternative Pathway | [CO2] |
| Q17. Illustrate the process of PCR along with its application.                         | [CO2] |
| Q18. Detail out the preparation of any toxoid vaccine.                                 | [CO3] |

:28/04/2023:M