DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – Winter 2023

Date: 08/01/2024

Course	:	**B. Pharmacy**	**Sem: VI**		
Subject Name	:	**Pharmaceutical Biotechnology**	**Subject Code**	:	**BP605T**
Max Marks	:	**75**	**Duration**	:	**3 Hr.**

Instructions:

1. **All questions are compulsory**
2. **Draw diagrams / figures wherever necessary**
3. **Figures to right indicate full marks**

Q. 1. Objective Type Questions (Answer all the questions) **(10 x 2) = 20**

i) Draw neat labelled diagram of structure of immunoglobulin.

ii) What are mutants? Give their examples.

iii) Differentiate between genetic organization of eukaryotes and prokaryotes.

iv) Define biotechnology. Give its scope in pharmaceutical sciences.

v) State the uses of microbes in industry.

vi) What are the functions of DNA ligase and restriction endonucleases?

vii) Write the importance of aeration and stirring in fermentation.

viii) Define: Transformation and transduction.

ix) Differentiate between cellular and humoral immunity.

x) What is cold chain storage? State the storage conditions of vaccines.

Q. 2. Long Answers (Answer 2 out of 3) **(2 x 10) = 20**

i) What are biosensors? Explain the working and applications of biosensors in Pharmaceutical sciences.

ii) Illustrate the principle of rDNA technology with neat labelled diagram. Give the detailed account on human insulin production by rDNA technology.

iii) Explain the production and purification of monoclonal antibodies by hybridoma technology. Give their applications in pharmaceutical industry.

Q. 3. Short Answers (Answer 7 out of 9) **(7 x 5) = 35**

i) Explain in detail ELISA technique with neat labelled diagram.

ii) Illustrate the design of large scale production fermenter and explain its various controls.

iii) Explain the Collection and Storage of whole human blood. Extend the note on plasma substitutes.

iv) Give comparative explanation of hypersensitivity reactions.

v) Explain the structure and functions of Major Histocompatibility Complex (MHC).

vi) Write a note on Polymerase Chain Reaction (PCR).

vii) Explain the principle and methods of protein engineering.

viii) Explain the methods of enzyme immobilization.

ix) Write a note on cloning vectors in rDNA technology.

------END OF THE PAPER------