

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 5 EXAMINATION – WINTER -2024

Subject Code:BP505TT**Date: 29-11-2024****Subject Name: Pharmaceutical Biotechnology****Time:10.30 AM TO 01.30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) Classify Genetic/molecular level protein engineering techniques and Explain CRISPER based protein engineering technique with diagram. | 06 |
| | (b) What is Microbial Biotransformation? Discuss about tools for enhancing secondary metabolite production during Microbial Biotransformation. | 05 |
| | (c) Differentiate prokaryotes and eukaryote based on their genetic organization. | 05 |
| Q.2 | (a) Classify Cloning Vectors and interferons (IFNs). Discuss the production of IFNs by rDNA Technology. | 06 |
| | (b) Answer the following questions: | 05 |
| | 1. What is Downstream Processing? | |
| | 2. What is HGPRT? | |
| | 3. Enlist functions of MHC. | |
| | 4. Define RT-PCR | |
| | 5. What is Plasma volume expander? Give 2 examples | |
| | (c) Enlist the microorganisms used for the production of Amylase, Catalase, Peroxidase, Lipase, Protease, and Penicillinase. Discuss the general requirements for the large scale production of Enzymes. | 05 |
| Q.3 | (a) Discuss structure of immunoglobulin with labelled diagram and discuss about the subclasses of IgG4 in brief. | 06 |
| | (b) Justify the statement: “Genes become blueprints, cells become factories, and molecules become medicine, unlocking the secrets of life to heal, rejuvenate, and transform the future of healthcare”. | 05 |
| | (c) Define the following terms: 1. Paratope, 2. Cloning vector, 3. Recombinant DNA technology, 4. Dendritic Cell, and 5. Site directed mutagenesis | 05 |
| Q.4 | (a) Classify Biosensor based on Transducer type and discuss Antibody and Aptamer based biosensor in brief with suitable examples. | 06 |

	(b)	Discuss microbial genetic method of conjugation with labelled diagram.	05
	(c)	Describe briefly about primary lymphoid organ? List out primary Lymphoid organs & summarize their functions in Immune response?	05
Q.5	(a)	Explain method of preparation of bacterial vaccine. Discuss Storage conditions and stability of official vaccines.	06
	(b)	What is HAT Medium? Discuss HAT Selection process of monoclonal antibody production with diagram.	05
	(c)	Give a tabulated summary of storage and expiration requirements of Plasma and Platelets components.	05
Q. 6	(a)	Discuss the use of microorganisms in fermentation technology.	06
	(b)	What is IgM mediated immune response? Classify and discuss Cytotoxic-Mediated Response.	05
	(c)	Explain production of Peroxidase with flow chart.	05
Q.7	(a)	Draw schematic diagram of Fermenter and discuss the difference between batch culture, fed-batch culture and continuous culturing method.	06
	(b)	What is Apheresis? Classify it and discuss about Plateletpheresis.	05
	(c)	Explain production of Griseofulvin with flow chart.	05
