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The Assam Royal Global University
Royal School of Pharmacy
B. Pharmacy, VI Semester
Special Supplementary Examination, August 2024
Course Title: Pharmaceutical Biotechnology
Course Code: PHR232C605

Time: 3 hours

Maximum Marks: 75

Attempt all questions as per instructions given
The figures in the right-hand margin indicate marks

Section-A

Q. No.	Answer the following in brief (within 50 words)	Marks	CO	BT Level
1(a)	What is gene therapy?	2.5	CO 1	BT 1
1(b)	Explain recombinant DNA technology.	2.5	CO 2	BT 2
1(c)	What are the advantages of enzyme immobilization?	2.5	CO 1	BT 1
1(d)	What are vectors?	2.5	CO 1	BT 1
1(e)	Summarize major histocompatibility complex.	2.5	CO 2	BT 2
1(f)	What is vaccination and immunization?	2.5	CO 3	BT 1
1(g)	Enlist the applications of microbial biotransformation.	2.5	CO 1	BT 1
1(h)	Analyze the ideal properties of plasma substitutes.	2.5	CO 4	BT 4

Section-B

Q. No.	Attempt any one of the following:	Marks	CO	BT Level
2 (a)	Define biosensors along with its application. Explain about the components of biosensors with proper diagram.	13	CO 2	BT 2
2 (b)	Explain about the basic principles of genetic engineering. Write a note on impact of restriction endonuclease and DNA ligase enzyme in genetic engineering.	13	CO 2	BT 2

Q. No.	Answer any two of the following:	Marks	CO	BT Level
3 (a)	Define DNA cloning. Explain about the enzymes used in DNA cloning along with its functions.	7	CO 2	BT 2
3 (b)	Write about the different applications of rDNA technology and Genetic engineering.	7	CO 1	BT 1
3 (c)	Utilize the production of insulin by recombinant DNA technology.	7	CO 3	BT 3

Q. No.	Answer any two of the following	Marks	CO	BT Level
4 (a)	Explain the different methods of enzyme immobilization.	7	CO 2	BT 2
4 (b)	Write in detail the methods of protein engineering.	7	CO 3	BT 1
4 (c)	Compare the different types of hypersensitivity reaction.	7	CO 4	BT 4

Q. No.	Answer any two of the following	Marks	CO	BT Level
5 (a)	Analyze ELISA. Explain its principle, advantages, disadvantages, and application.	7	CO 3	BT 4
5 (b)	Explain in detail the hybridoma technology with its applications.	7	CO 4	BT 2
5 (c)	Identify the genetic organization of eukaryotes and prokaryotes	7	CO 3	BT 3

Course Outcomes	Marks Allotted	Percentage
CO1	17	Approx 50%
CO2	24	
CO3	30	Approx 40%
CO4	16	Approx 10%