QP Code: R253B086 | Reg. No | | | | | | | | | | | AY 24

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

M. Tech. (Third Semester - Regular) Examinations, December – 2025

24MBTPE23001 – Biopharmaceutical and Pharmaceutical Technology

(Biotechnology)

Time: 2 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right-hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** questions		
a.	What is preclinical drug development?	CO1	K2
b.	Differentiate between creams and ointments?	CO2	K1
c.	What is meant by "biological half-life" of biopharmaceuticals?	CO4	K3
d.	Define immunogenicity?	CO3	K4
e.	What is the role of insulin in glucose homeostasis?	CO4	K2

PART – B **(10 x 5 = 50 Marks)**

		Marks	CO #	Blooms Level
	Answer ***ALL*** the questions			
2. a.	Discuss the major phases in the history and evolution of the pharmacy profession?	5	CO1	K2
b.	Write on GMP principles and their importance?	5	CO2	K1
	(OR)			
c.	Illustrate on renal excretion of drugs?	5	CO4	K4
d.	Discuss on biotransformation pathways (Phase I & II)?		CO1	K2
3.a.	Explain the formulation and evaluation of suspensions?	5	CO2	K3
b.	Describe the steps involved in tablet coating?	5	CO5	K2
	(OR)			
c.	Explain the preparation and evaluation of suppositories?	5	CO1	K3
d.	Write on liposomes as drug delivery systems?	5	CO3	K2
4.a.	Explain the principles of pharmacodynamics with suitable examples?	5	CO6	K4
b.	Write a note on therapeutic hormones: classification and clinical relevance?	5	CO2	K2
	(OR)			
c.	Explain the concept of targeted drug delivery using monoclonal antibodies?	5	CO4	K2
d.	Describe safety and regulatory considerations in vaccine development?	5	CO4	K3
5.a.	Explain the major product-related factors that contribute to immunogenicity of biopharmaceuticals?	5	CO1	K1
b.	Outline the cell-based neutralization assays in immunogenicity testing?	5	CO3	K2
	(OR)			

c.	Write details on product-related factors that influence immunogenicity?	5	CO4	K4
d.	Briefly describe strategies used to minimize immunogenicity during biopharmaceutical development?	5	CO3	K2
6.a.	Describe the mechanism of action and clinical uses of erythropoietin?	5	CO5	K3
b.	Explain the production of recombinant insulin using *E. coli* bacteria?	5	CO4	K1

(OR)

c.	Write on recombinant human DNase and its therapeutic importance?	5	CO5	K2
d.	Explain the concept of antibody-dependent cellular cytotoxicity (ADCC) in monoclonal antibody therapy?	5	CO6	K3

--- End of Paper ---