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

M.Sc. (Second Semester - Regular) Examinations, May - 2026

24MBIPC12002– Immunology (Biotechnology)

Time: 3 hrs

Maximum: 60 Marks

Answer ALL questions
(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. Define PAMPs and PRRs.	CO1	K2
b. What are superantigens?	CO2	K2
c. Define mixed lymphocyte reaction.	CO3	K1
d. What are chimeric antibodies?	CO4	K2
e. Define the significance of HLA typing.	CO5	K2

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

	Marks	CO #	Blooms Level
2. a. Critically discuss the cellular and molecular basis of adaptive immunity. (OR)	10	CO1	K4
b. Discuss the structure and functions of lymph node.	5	CO1	K3
c. Explain the role of macrophages in immune responses.	5	CO1	K2
3.a. Explain the structure, classes and functions of immunoglobulins. (OR)	10	CO2	K4
b. Describe endogenous antigen processing pathway.	5	CO2	K4
c. Elaborate cytokines: properties, production and therapeutic applications.	5	CO2	K3
4.a. Discuss antigen-antibody interactions and give a note on their applications. (OR)	10	CO3	K4
b. Discuss the principle and applications of ELISA.	5	CO3	K3
c. Explain lymphoproliferation assay in CMI studies.	5	CO3	K4
5.a. Discuss various types of vaccines and their immunological importance. (OR)	10	CO4	K4
b. Describe hybridoma technology for monoclonal antibody production.	5	CO4	K3
c. Explain active and passive immunization.	5	CO4	K2
6.a. Discuss hypersensitivity reactions and their immunological mechanisms. (OR)	10	CO5	K4
b. Give a note on transplantation immunity.	5	CO5	K3
c. Discuss on few organ specific autoimmune disorders.	5	CO5	K2

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