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



B. Tech (Sixth Semester - Regular) Examinations, April 2026

**23BBTPC36001 – Immunology & Immunotechnology
(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. Differentiate innate and adaptive immunity based on specificity and memory.	CO1	K2
b. Define monoclonal antibodies and mention a diagnostic use.	CO2	K1
c. Define superantigens and explain their mode of action briefly.	CO3	K2
d. Classify immunodeficiency disorders.	CO4	K2
e. Define active immunization with example.	CO5	K2

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

	Marks	CO #	Blooms Level
2. a. Critically evaluate classification of immunity with respect to mechanism and effectiveness of acquired immunity.	10	CO1	K4
(OR)			
b. Describe the stages of haematopoiesis and their immunological relevance.	5	CO1	K3
c. Give a note structure and function of lymph node.	5	CO1	K2
3.a. Describe endogenous pathway of antigen processing and presentation.	10	CO2	
(OR)			
b. Explain structural basis of antigen presentation by MHC molecules.	5	CO2	K3
c. Describe molecular events involved in antibody synthesis and secretion.	5	CO2	K3
4.a. Discuss mechanisms and applications of antigen–antibody reactions in diagnostics.	10	CO3	K4
(OR)			
b. Explain sandwich-ELISA technique with emphasis on sensitivity and specificity.	5	CO3	K3
c. Analyze cytokine networks in immune regulation and therapeutic applications.	5	CO3	K4
5.a. Discuss on classification of hypersensitivity reaction and analyze hypersensitivity reaction Type-I with underlying mechanisms.	10	CO4	K4
(OR)			
b. Explain causes and consequences of immunodeficiency disorders.	5	CO4	K3
c. Evaluate modern approaches for modulation of immune dysfunction.	5	CO4	K3
6.a. Evaluate traditional and next-generation vaccines with suitable examples.	10	CO5	K3
(OR)			
b. Describe recombinant production of lymphokines.	5	CO5	K3
c. Explain second-generation (engineered) antibodies.	5	CO5	K3

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