

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: BIOTECHNOLOGY**

**SEMESTER: IV
SESSION: SP/2025**

TIME: 3 Hours

SUBJECT: BE208 BIOLOGY OF IMMUNE SYSTEM

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Describe the structure of a typical antibody with help of a diagram. Discuss the genetic basis of diversity of antibodies.	[5] 1, 2	2
Q.1(b)	What are Monoclonal antibodies? How are they produced? Give their applications.	[5] 5	2
Q.2(a)	Explain the mechanism of antigen and antibody reaction with special reference to lattice theory.	[5] 2	1
Q.2(b)	Explain the technique of Ouchterlony double diffusion technique along with neat diagram explaining the results.	[5] 4	3
Q.3(a)	What do you mean by effector mechanism? Explain the events occurring on entry of an antigen into the body in reference to B and T lymphocytes.	[5] 2	3
Q.3(b)	Explain the complement system. What is the mechanism of action of complement system on the antigens and infected cells?	[5] 5	4
Q.4(a)	What do you mean by MHC? Give the difference between MHC class I and MHC class II.	[2+3] 2,3	4
Q.4(b)	Define vaccines. What are the different types of vaccines? Give examples	[5] 4	3
Q.5(a)	What do you mean by hypersensitivity? Explain the mechanism of type I hypersensitivity with the help of a neat diagram.	[5] 3	1
Q.5(b)	Discuss any two immunological disorders in brief.	[5] 4,5	5

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