

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION SP/2025)

CLASS: BTECH  
BRANCH: BIOTECHNOLOGY

SEMESTER : IV  
SESSION : SP/2025

SUBJECT: BE208 BIOLOGY OF IMMUNE SYSTEM

TIME: 02 Hours

FULL MARKS: 25

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

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		CO	BL
Q.1(a)	Give the difference between active and passive immunity along with examples.	[2]	1 1
Q.1(b)	Explain the structure of typical antibody molecule. In a tabular form explain the characteristics of the classes of antibodies.	[3]	1 1
Q.2(a)	Give the difference between polyclonal and monoclonal antibodies in a tabular form.	[2]	1 3
Q.2(b)	What is Hybridoma Technology? Discuss the role of HAT selection in this technique.	[3]	2 4
Q.3(a)	What do you mean by Humoral immunity?	[2]	1 1
Q.3(b)	Explain genetic basis of antibody diversity with diagrams of formation of light chains and heavy chains.	[3]	1 3
Q.4(a)	What is antigen, immunogen, hapten and epitope?	[2]	2 1
Q.4(b)	Discuss the biological aspects of antigen- antibody reactions giving examples.	[3]	2 2
Q.5(a)	Give an overview of immune system with the help of a flowchart.	[2]	2 1
Q.5(b)	Discuss about the components of immune system.	[3]	1 1

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