

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION MO/2023)

CLASS: MSC/PRE-PHD
BRANCH: BIOTECHNOLOGY

SEMESTER : III
SESSION : MO/2023

SUBJECT: BT501 IMMUNOTECHNOLOGY

TIME: 03 HOURS

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. TABLES/DATA HANDBOOK/GRAPH PAPER ETC., IF APPLICABLE, WILL BE SUPPLIED TO THE CANDIDATES
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Q.1(a)	Illustrate the difference between innate and acquired immunity. Discuss the different components of immune system.	[5]	1	1
Q.1(b)	Discuss the phenomenon of phagocytosis and its role in antigen clearance mechanism with the help of a neat and labeled diagram.	[5]	1	2
Q.2(a)	Describe the genetic basis of antibody diversity in formation of light and heavy chain. Diagrammatically present the typical structure of antibody and give a tabular description of different types of antibodies.	[5]	2	2
Q.2(b)	Discuss the effector mechanisms involved in immunology of human body when any antigen enters the body.	[5]	3	2
Q.3(a)	Briefly explain how Radioimmunoassay and ELISA are used in the diagnosis of any disease.	[5]	2	3
Q.3(b)	Discuss the technique of Flow cytometry throwing light on its Instrumentation as well as applications.	[5]	2	4
Q.4(a)	Discuss any two deficiency diseases and the role of animal model in exploring deficiency diseases.	[5]	3	4
Q.4(b)	Illustrate the rationale of vaccine design. Discuss the different types of vaccines giving examples.	[5]	1	3
Q.5(a)	Discuss the technique of Hybridoma technology with special mention of HAT selection. Enumerate the applications of Monoclonal antibodies.	[5]	2	3
Q.5(b)	Write a short note on dose and route of antigen administration. Describe the process of production of interferon by recombinant DNA technology.	[5]	2	3

:::22/11/2023:::E