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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2023 Semester End Main Examinations

Programme: B.E.

Branch: Biotechnology

Course Code: 19BT5DE1IMM

Course: Immunotechnology

Semester: V

Duration: 3 hrs.

Max Marks: 100

Date: 03.03.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a) List various types of immune organs and write on any two briefly	06
	b) Compare and contrast cell mediated and humoral immunity	06
	c) Classify various types of Adaptive immune system with examples and important cells and molecules	08

UNIT - II

2	a) Draw the developmental stages of B-Cell and explain detail.	10
	b) Outline the mechanism of action of T-helper and T-cytotoxic cells interaction with target cells.	05
	c) Illustrate the pathway of Antigen processing with respect to extracellular pathogen and explain briefly.	05

OR

3	a) Immune system in theory can defend different types of pathogens by antibody diversity. Justify this statement with respect to antibody diversity by explaining process behind it with neat illustrations.	10
	b) Classify various types of antibodies and briefly explain their function. Draw the structure of a typical antibody with neat labelling.	10

UNIT - III

4	a) Immune defense is not complete without the action of series of free floating, inactive proteins. Identify the system that if final a pathway of immune defense. Explain in detail components and mode of action.	10
	b) Classify various types of immune deficiencies and provide reasons for each type and explain any two examples from each type.	10

OR

5	a) Immune system is double edged sword. Justify this when immune system goes hyperactive. write on four briefly	10
	b) Classify various types of transplantations. What are the factors to be considered for organ transplantation?	10

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - IV

6	a) Differentiate between poly clonal and monoclonal antibodies(any five)	05
	b) Develop a strategy for the production of antibodies for a specific epitope with neat illustrations and explanation.	10
	c) What are subunit vaccines? Give examples (any one). Write advantages and disadvantages	05

UNIT - V

7	a) Identify a method that use radioactivity but is highly sensitive. With a neat schematic diagram outline principle and method. What are the advantages and disadvantages of this method? (any two each)	10
	b) This method is based on gel and most widely used for detection of proteins in many research labs. Identify the method, write principle and procedure briefly with neat illustrations.	10
