

(AUTONOMOUS)
MSc DEGREE EXAMINATION MAY 2026
 (Second Semester)

Branch – **BIOTECHNOLOGY**

IMMUNOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The mononuclear phagocyte system does not include _____ (i) Monocytes (ii) Endothelial cells (iii) Kupffer cells (iv) Lymph node	K1	CO1
	2	Neutrophil defensins are _____ (i) Anti-toxins (ii) Oxygen-dependent (iii) Enzymes (iv) Peptide antibiotics	K2	CO1
2	3	_____ is the earliest site of hematopoiesis in the embryo (i) Bone marrow (ii) Liver (iii) Spleen (iv) Yolk sac	K1	CO2
	4	_____ type of immune cells are able to quickly respond post any subsequent encounter with the same antigen (i) Helper T cells (ii) Memory cells (iii) Plasma cells (iv) Basophil	K2	CO2
3	5	The earliest stages of B-cell differentiation _____. (i) Occur in the embryonic thymus (ii) Involve rearrangement of heavy-chain gene segments (iii) Involve rearrangement of k-chain gene segments (iv) Require the presence of antigen	K1	CO3
	6	The first wave of fetal gamma delta T-cell receptor cells in mouse colonize the _____. (i) Female reproductive tract (ii) Peripheral blood (iii) Skin (iv) Gut	K2	CO3
4	7	_____ is the function of interleukin-1 (IL-1) (i) It stimulates a general increase in activity of both committed B and T cells (ii) It triggers the secondary response to an antigen (iii) It activates T helper cells that have recognized processed and presented antigen (iv) It participates in opsonization	K1	CO4
	8	Difference between atopy and anaphylaxis is _____. (i) The organ systems targeted by the chemical mediators (ii) the site of the reaction (iii) the allergen that triggers the response (iv) the concentrations of the chemical mediators released	K2	CO4
5	9	The first scientifically approved vaccine was _____. (i) MMR vaccine (measles, mumps, and rubella) (ii) Oral polio vaccine (iii) Smallpox vaccine (iv) Tetanus vaccine	K1	CO5
	10	Sandwich ELISA detects _____. (i) Antibody (ii) Antigen (iii) Plasma (iv) Serum	K2	CO5

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SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain about various blood grouping system.	K2	CO2
		(OR)		
	11.b.	Explain the role of B cells in the secondary lymphoid organs.		
2	12.a.	Explain about Haematopoiesis.	K3	CO2
		(OR)		
	12.b.	Utilize the process of antigen recognition by antibody.		
3	13.a.	Analyze the development of B-cell receptor.	K4	CO3
		(OR)		
	13.b.	Examine the process of antigen presentation by CD4+ T cells.		
4	14.a.	Interpret the mechanism of graft rejection.	K5	CO4
		(OR)		
	14.b.	Explain the mechanism of regulation of immune response and tolerance.		
5	15.a.	Discuss the detection methods of monoclonal antibodies.	K6	CO5
		(OR)		
	15.b.	Explain the principle and procedure for Immunoblotting.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain the role of Thymus in T lymphocyte maturation.	K2	CO2
2	17	Develop the structure and biological activity of immunoglobulins.	K3	CO3
3	18	Examine the role of antigens in MHC restriction and antigen processing.	K4	CO3
4	19	Determine the etiology, immunologic activity, signs and symptoms, laboratory evaluation and treatment of Type I hypersensitivity reaction.	K5	CO4
5	20	Elaborate and classify the common vaccines for humans.	K6	CO5

Z-Z-Z

END