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**BRAINWARE UNIVERSITY**

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Brainware University
Barasat, Kolkata -700125

Term End Examination 2025-2026**Programme – M.Sc.(BT)-2025****Course Name – Immunobiology****Course Code - MBT27505 (T)****(Semester II)****Full Marks : 40****Time : 2:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. *Choose the correct alternative from the following :*

- (i) Identify the molecule responsible for antigen presentation to T cells.
 - a) Immunoglobulin
 - b) MHC
 - c) Cytokine
 - d) Complement
- (ii) Select the lymphocyte type that matures in the thymus.
 - a) T cell
 - b) B cell
 - c) NK cell
 - d) Macrophage
- (iii) Recognize the immune cell providing early antiviral defense.
 - a) NK cell
 - b) B cell
 - c) T helper cell
 - d) Plasma cell
- (iv) Analyze the signal required for complete T cell activation.
 - a) Co-stimulation
 - b) Antibody binding
 - c) Complement activation
 - d) Opsonization
- (v) Identify the method that isolates cells using magnetic beads.
 - a) Immunomagnetic separation
 - b) ELISA
 - c) IHC
 - d) Western blot
- (vi) Select the discipline applying computational tools to immunology.
 - a) Immunoinformatics
 - b) Serology
 - c) Pathology
 - d) Microbiology
- (vii) Analyze the disease caused by immune complex deposition.
 - a) SLE
 - b) Asthma
 - c) Tuberculosis
 - d) Allergy
- (viii) Analyze the nature of primary immunodeficiency disorders.
 - a) Genetic origin
 - b) Infectious origin
 - c) Nutritional cause
 - d) Iatrogenic cause
- (ix) Evaluate the strategy used to prevent graft rejection.

- a) Immunosuppression
- b) Tissue mismatch
- c) Inflammation
- d) Cytokine storm
- (x) Analyze the contribution of immunoinformatics to vaccine design.
- a) Epitope prediction
- b) Pathogen culture
- c) Animal testing
- d) Serology

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. What is antigen processing? (3)
- 3. State the principle of Western blotting. (3)
- 4. State the application of immunoinformatics. (3)
- 5. Critically assess immune tolerance mechanisms. (3)
- 6. Assess the importance of tumor antigens in immunity. (3)

OR

Evaluate the significance of reverse vaccinology. (3)

Group-C

(Long Answer Type Questions)

5 x 3=15

- 7. Explain the structure and function of antibodies. (5)
- 8. Evaluate tumor immune surveillance. (5)
- 9. Analyze the causes of autoimmune diseases. (5)

OR

Analyze Type I hypersensitivity. (5)

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