

Seat No. : _____

AK-121

April-2025

B.Sc., Sem.-IV

DSC-C-BT-241[T] : Biotechnology (NEP) (Major) (Immunology)

Time : 2:00 Hours]

[Max. Marks : 50

1. Discuss the structure of immunoglobulin and its types with appropriate diagrams. 10

OR

1. (A) Explain the synthesis of monoclonal antibodies. 5
(B) Write about *in vivo* antigen and antibody reactions. 5

2. Describe the role of different types of cells in the immune system. 10

OR

2. (A) Write the functions of Bone marrow, Thymus, Spleen in immune system. 5
(B) Compare humoral vs cell mediated immunity. 5

3. Discuss the structure and functions of MHC class I and MHC class II with diagrams. 10

OR

3. (A) Write a short note on the graft rejection and immune-suppressors. 5
(B) Discuss differences between RIA and ELISA. 5

4. Define hypersensitivity. Write about mechanism of type 1 hypersensitivity. 10

OR

4. (A) Explain organ specific damage by auto-antibodies. 5
(B) Write about IDDM and Rheumatoid arthritis. 5

5. Answer any **ten** of the following :

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- (1) Define hapten.
 - (2) What is the difference between epitope and paratope ?
 - (3) What is complement fixation ?
 - (4) Define immunity.
 - (5) Expand APCs.
 - (6) Write the function of Payer's patch in immune system.
 - (7) Define histocompatibility complex.
 - (8) What is transplantation ?
 - (9) What is erythroblastosis fetalis ?
 - (10) What are antihistamines ?
 - (11) What is autoimmune anaemia ?
 - (12) How is immunogen different from the antigen ?
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