

AU-273

M.Sc. Semester-I (C.B.C.S. Scheme) Examination

BIOTECHNOLOGY : 1 BTB 4

(Biology of the Immune System)

Time : Three Hours]

[Maximum Marks : 100

Note :— (1) All questions are compulsory and carry equal marks.

(2) Draw well labelled diagram and give suitable examples wherever necessary.

1. Discuss in detail the phylogeny of immune system with its types and suitable examples. 20

OR

What are antibodies ? Write in detail about their types, their functions and biochemical importances. 20

2. Explain the following :

- (a) Functions of macrophages. 5
- (b) Significance of Ab dependent cell mediated cytotoxicity. 5
- (c) Role of cytokines in immune response. 5
- (d) Subsets of T-cell. 5

OR

- (e) Diagrammatic representation of Hematopoiesis. 5
- (f) Role of Mast cells. 5
- (g) Lymphocyte trafficking. 5
- (h) Clonal selection of B-cell. 5

3. Describe the following :

- (a) Diagrammatic representation of alternative complement pathway. 5
- (b) HLA complex. 5
- (c) T-cell tolerance. 5
- (d) Biochemical consequences of complement activation. 5

OR

- (e) Significance of terminal complement pathway. 5
 - (f) B-cell tolerance. 5
 - (g) Regulation of MHC expression. 5
 - (h) MHC restriction. 5
 - 4. Describe the following :
 - (a) Coombs and Gell classification of hypersensitivity. 5
 - (b) Consequences of immune complex deposition. 5
 - (c) Domino transplants. 5
 - (d) Generation of specific immunity against viruses. 5
- OR**
- (e) Immunosuppressive drugs used to treat transplant rejection. 5
 - (f) Genetic basis of allergic disease. 5
 - (g) Autoimmune diseases. 5
 - (h) Clonal deletion theory of immunological tolerance. 5
 - 5. Discuss in detail about the hybridoma technology for the production of monoclonal antibodies. Add a note on clinical application of Mab. 20

OR

What are vaccines ? Discuss in detail about types of synthetic vaccines and their advantages over conventional vaccines. 20