This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **991**

Unique Paper Code : **253503** **G**

Name of the Paper : **Immunology (MIHT-509)**

Name of the Course : **B.Sc. (Honours) Microbiology**

Semester : **V**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *five* questions.

All questions carry equal marks.

1. (*a*) Define the following terms (any *five*) :

Equivalence zone, CDR, Diapedesis, Germinal centres, Opsonin, Avidity. 1×5=5

(*b*) Explain the structure and function of Class II MHC molecule. 3+3=6

(*c*) Write characteristic features of the following immunodeficiency diseases : 2×2=4

(*i*) Leucocyte Adhesion defect

(*ii*) Digeorge's syndrome.

2. (*a*) Define hypersensitivity. Describe the mechanism of Type I hypersensitivity. 1+5=6

(*b*) Give *one* word for the following :

(*i*) Macrophages found in kidney

P.T.O.

(*ii*) B cell rich areas in lymph node

(*iii*) Group of receptors having immunoglobulin like domain structures

(*iv*) Secretary antibody

(*v*) Antibody which is most effective in complement activation. 5×1=5

(*c*) Explain the role of T_H cells in B cell activation. 4

3. (*a*) Write short notes on (any **3**) :

(*i*) Adjuvants

(*ii*) Organ specific autoimmunity

(*iii*) Lectin pathway of complement activation.

(*iv*) ELISA. 3×4=12

(*b*) Expand the following abbreviations :

RIST, MLC, SLE, CTL, FACS, PPR 6×½=3

4. (*a*) Write the method of producing monoclonal antibodies and their uses. 4+3=7

(*b*) Give one important function of the following (any **3**) :

(*i*) β_2 microglobulin

(*ii*) Eosinophils

(*iii*) B7 receptors

(*iv*) M cells 3×1=3

(*c*) Diagrammatically explain the internal structure and function of lymph node. 5

5. (*a*) Differentiate between the following (any *three*) :

(*i*) Cytosolic and endocytic pathway of antigen processing

(*ii*) T-dependent and T-independent antigens.

(*iii*) Papain and Pepsin digestion of antibody

(*iv*) Primary and secondary immune response. 3×4=12

(*b*) Write the contribution of the following scientists (any *three*) :

(*i*) Susumu Tonegawa

(*ii*) Paul Ehrlich

(*iii*) Elie Metchnikoff

(*iv*) Karl Landsteiner 3×1=3

6. (*a*) What are neoplastic cells ? How do CTLs destroy them ? Explain. 5

(*b*) Explain (any *four*) : 2½×4=10

(*i*) ADCC

(*ii*) Hinge region

(*iii*) Self MHC restriction

(*iv*) NK cells

(*v*) Idiotypes.