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

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

S. No. of Question Paper : **1394**

Unique Paper Code : **2231503** **F-7**

Name of the Paper : **16, Immunology**

Name of the Course : **B.Sc. (Hons.) Zoology (Erstwhile FYUP)**

Semester : **V**

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

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

Attempt *five* questions in all.

Question No. **1** is compulsory.

1. (*a*) Define : 5

(*i*) Prozone effect

(*ii*) Idiotype

(*iii*) Anaphylatoxin

(*iv*) Avidity

(*v*) Bence Jones Proteins

(*b*) Write the contribution of : 2

(*i*) R.R. Porter and G.H. Edelman

(*ii*) S.A. Berson and Rosalyn Yalow.

P.T.O.

(*c*) Expand the following : 5

(*i*) MBL

(*ii*) BALT

(*iii*) PAMP

(*iv*) ADCC

(*v*) HEL

(*d*) Give reasons for the following : 3

(*i*) Polymers of D-amino acids are poor immunogens

(*ii*) IgM isotype cannot cross the placental barrier

(*iii*) High level of diversity in MHC molecules.

(*e*) Distinguish between : 6×2=12

(*i*) Active Immunization and Passive Immunization

(*ii*) Innate Immunity and Adaptive Immunity

(*iii*) Hypersensitivity I and Hypersensitivity II

(*iv*) Cytokines and chemokines

(*v*) Macrophage and Dendritic cell

(*vi*) Indirect and Sandwich ELISA.

2. (*a*) Write the steps of inflammatory response when skin as an anatomical barrier is broken. 6

(*b*) Explain the role of B cells in eliciting humoral response. 6

3. (*a*) Diagrammatically represent the structure of an Antibody. 6

(*b*) Compare IgA and IgE. 4

(*c*) Write the clinical uses of monoclonal antibody. 2

4. (*a*) Explain how exogenous antigen is processed and presented. 6

(*b*) Write the functions of complement system. 3

(*c*) How is initiation of classical pathway different from alternate pathway ? 3

5. (*a*) Define Major Histocompatibility Complex. Differentiate between the structure and function of MHC I and MHC II molecules. 8

(*b*) Describe the structures of Spleen. 4

6. (*a*) Discuss in detail different types of vaccines and their immune response. 6

(*b*) Diagrammatically represent hematopoiesis. 6

7. Write short notes on any *three* of the following : 3×4=12

(*a*) Radioimmunoassay

(*b*) Properties of Cytokines

(*c*) Non-covalent interactions of Ag-Ab

(*d*) Adjuvants.