

SL No of QP :13546
 Unique Paper Code : 2234000019
 Name of the Paper : ZOO-GE-19 Immunology: Understanding the body's defense mechanisms
 Name of the Course : B.Sc./B.Com./B.A.
 Semester : VII (NEP-UGCF)
 Duration : 2 Hours
 Maximum Marks : 60 Marks

Instructions for Candidates:

1. Write your Roll No. on the top immediately on receipt of the question paper.
2. Attempt **FOUR** questions in all. **Question No. 1 is compulsory.**
3. Attempt all parts of the question together. All questions carry equal marks
4. Draw well labelled diagrams wherever required.

1. (a) Define (**Any four**): (4×1=4)
 - (i) Adaptive immunity
 - (ii) Haematopoiesis
 - (iii) Opsonisation
 - (iv) Immunotherapy
 - (v) Adjuvant
- (b) Distinguish between (**Any three**): (3×2=6)
 - (i) Humoral immunity and Cell-mediated immunity
 - (ii) Inactivated vaccine and Attenuated vaccine
 - (iii) Active immunity and passive immunity
 - (iv) Primary immunodeficiency and Secondary immunodeficiency
- (c) Expand the following (**Any four**): (4×0.5=2)
 - (i) PAMP
 - (ii) CDR
 - (iii) IFN
 - (iv) CTL
 - (v) CLIP
- (d) Give the immunological significance: (3×1=3)
 - (i) Tolerance
 - (ii) Neutrophils
 - (iii) GALT
2. (a) Describe in detail the structure and functions of primary lymphoid organs. (8)
 (b) Elaborate the classical pathway and alternative pathway of complement system. (7)
3. (a) What are MHC molecules? Describe the structure and function of Class I and Class II MHC molecules. (8)
 (b) What are precipitation reactions? Discuss the principle and applications of the techniques based on precipitation reactions. (7)

4. (a) Describe the basic structure of an immunoglobulin and discuss the various classes of immunoglobulins. Substantiate with suitable diagrams. (8)
(b) Illustrate and discuss the production and selection of monoclonal antibody by hybridoma technology. (7)
5. (a) What is radioimmunoassay? Elaborate the technique and write its applications. (9)
(b) What is inflammation? Elucidate its immunological significance. (6)
6. Write short notes on (any **THREE**): (3×5=15)
(a) Transplantation
(b) Type I Hypersensitivity
(c) Clonal selection theory
(d) Autoimmunity
(e) Endocytic pathway of antigen processing