Exam.Code:0908
Sub. Code: 6305

2053

B.E. (Biotechnology) Fourth Semester

BIO-415: Immunology and Immuno-Technology

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.

x-x-x

1. Answer the following questions briefly:
   a) Define antigenicity.
   b) What is opsonization.
   c) Explain affinity and avidity.
   d) Give function of mast cell.
   e) What is secondary immune response.
   f) Give function of plasma cell.
   g) Define agglutination.
   h) What is the difference between IgA and secretory IgA.
   i) What is a monoclonal antibody.
   j) Name the primary lymphoid organs. 1x10

SECTION A

2a Explain the process of removal of remove dead cells and foreign particles by macrophages. 5

b How does the hapten-carrier complex stimulates the antibody production . Why is the same effect not observed with hapten alone. 5

3. Explain the mechanism of antigen processing and presentation in association with MHC class II molecule by APC. 10

4a Explain the basic structure of immunoglobulin. Explain different mechanism for generation of antibody diversity. 5

b Elucidate the structure of MHC class I molecule. How is the binding groove of MHC class II molecule different from MHC class I molecule. 5

SECTION B

5a Discuss various factors involved in initiation of auto immunity . 5

b Explain antigen recognition mechanism by B cells. What is the role of T cells in clonal expansion of B cells. 5

6a Classify vaccines on the basis of the antigenic preparation. Explain the role of adjuvant in vaccines. 5

b Explain different steps for detection of protein by western blot technique. 5

7. Explain the activation of classical complement pathway and various steps involved in the formation of membrane attack complex. 10

x-x-x