

**2013**

**M.Sc.**

**3rd Semester Examination**

**BIOCHEMISTRY**

**PAPER—BIC-302**

**Full Marks : 40**

**Time : 2 Hours**

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**IMMUNOLOGY**

**Group—A**

1. Answer any *five* questions from the following : 2×5
- (a) What do you mean by framework regions of antibody?
  - (b) What are the forces involved in the antigen-antibody interactions?
  - (c) What are the functions of lymph node?
  - (d) Differentiate between adjuvant & hapten.
  - (e) Compare between paratope & agreetope.
  - (f) What is Bence-Jones protein?
  - (g) Write the function of toll-like receptors in innate immunity.
  - (h) What is Opsonization?

(Turn Over)

**Group—B**

Answer any *two* questions from the following : 5×2

2. Describe the immunological functions of immunoglobulin G (IgG). 5
3. How cytotoxic T-lymphocyte kill the infected cell? 5
4. Draw the surface markers present on the surface of the B-lymphocytes mentioning their ligand and functions. 2+3
5. Give a comparative account of structure and peptide binding properties of Class I and Class II MHC molecule. 10

**Group—C**

Answer any *two* questions from the following : 10×2

6. (a) What do you mean by immunological synapse?  
(b) Write down the signal transduction mechanism of T-lymphocyte. 3+7
7. Discuss the structure and importance of MHC-I and MHC-II molecules. 5+5
8. (a) What is class switching?  
(b) Describe the primary and secondary immune response. 5+5
9. Discuss the roles of stromal cell in B-cell maturation. What are  $T_1$  and TD antigen? What is pre-B cell receptor. 4+4+2