2053
B.Sc. (Hons) Bio-Informatics
Sixth Semester
BIN-6003: Immunology

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt _five_ questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

1. Answer the following briefly:-
   a) Superantigens
   b) Sub-cellular vaccine
   c) Passive immunization
   d) Suppressor cells
   e) Class switching
   f) Epitope and its significance                                    (6x2)

## UNIT - I

II.  a) Describe the molecular structure of immunoglobulins.

b) How do genome rearrangements take place in B-lymphocytes during differentiation?                                                      (2x6)

III. a) Write about the cellular immune responses and the cells involved in these responses.

b) How does antibody diversity occur in humans?                      (2x6)

IV.  Write a note on the following:-
   a) Immunologic memory
   b) Heavy chain transcription                                       (2x6)

## UNIT - II

V.   a) Give a comparison of class I and class II MHC antigens.

b) What are cytokines? How do they regulate the immune responses?     (2x6)

VI.  a) Describe anyone autoimmune disease and its symptoms.

b) Explain the principle of RIA and its applications in the diagnosis of diseases.                                                            (2x6)

VII. a) What do you know about bacterial and viral vaccines?

b) How exo-antigens are processed in the human system?               (2x6)

x-x-x