Exam.Code:0035
Sub. Code: 0974

2012
B.Sc. (Hons.) Biotechnology
Third Semester
BIOT-303-T: Immunology – I

Time allowed: 3 Hours Max. Marks: 67

***NOTE**: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

I. Explain the following:-

a) Immunogenicity and antigenicity

b) Isotypes and idiotypes

c) Primary and secondary lymphoid organs

d) Hinge region of antibody

e) Natural killer cell

f) Immunoglobulin superfamily

g) Interferon

h) Peripheral T-cells

i) Haptans

j) Clonal nature of immune response (10x1½)

<u>UNIT - I</u>

II. a) Define hematopoiesis. Explain the process of hematopoiesis and differentiation.

b) What are cell adhesion molecules? Explain various types of cell adhesion molecules involved in extravasation. (7,6)

III. a) Discuss different barriers of innate immune system.

b) Discuss the role of the lymphocytes in immune system. (7,6)

<u>UNIT - II</u>

IV. a) What are primary lymphoid organs? Explain the structure of thymus gland.

b) Discuss various types of factors that influence immunogenicity. (7,6)

V. a) Define epitopes. Discuss properties of B cell epitopes.

b) Define secondary lymphoid organs. Explain the structure of lymph node. (7,6)

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UNIT - III

VI. a) Explain origin and transduction of activating signal during activation of B-cell.

b) Discuss thymus-dependent and thymus-independent antigens. (7,6)

VII. a) Describe the structure of immunoglobulin molecule with suitable diagram.

b) What are antigenic determinants? Discuss different types of antigenic determinants on immunoglobulins. (7,6)

UNIT - IV

VIII. a) Discuss the structure of MHC-II molecule.

b) Explain regulation of MHC expression. (7,6)

IX. a) Explain the structure of T-cell receptor complex with suitable diagram.

b) Describe peripheral T-cell distribution and its functions. (7,6)

x-x-x