

Five Year Integrated M.Sc. Examinations 2023

Semester - VII

Course: LS-4-7-1 (2016)

(Immunology and Immunotechniques)

Time: 4 hours

Full Marks: 80

Questions are of value as indicated in the margin.

Answer Question No.1

1. Write short notes on **any ten** of the following:
 - a. Differentiate between antigenicity and immunogenicity
 - b. Pattern recognition molecules
 - c. Hapten and adjuvants
 - d. Phagocytosis
 - e. Cytokines
 - f. Complement proteins
 - g. Importance of HAT medium in Hybridoma technology.
 - h. DNA vaccines
 - i. Primary and secondary immunodeficiencies
 - j. Autoimmunity
 - k. CD markers on T-cells
 - l. MHC restriction

2 x 10 = 20

Answer **any four** from the following questions

4 x 15 = 60

2.
 - (a) Provide the experimental evidences to deduce the basic structure of immunoglobulin molecule.
 - (b) Describe the organization of Ig genes and their rearrangement process to obtain diversity in immunoglobulin.
 - (c) Class switching of Immunoglobulins.

4+8+3

3.
 - (a) List out the antigen presenting cells and their role in immunity. Give an account of the endogenous and exogenous pathway of antigen presentation.
 - (b) Add a note on MHC complex

10+5

4.
 - (a) How does the pathogenic microorganism destroyed by phagocytic cells?
 - (b) Recognition and killing mechanisms of infected cell by Natural killer (NK) cells.
 - (c) Add a note on thymic selection.

4+7+4

5. (a) How does the B-cell maturation occur in bone marrow and peripheral lymphoid organ?
(b) Describe the role of T_H cell in B-cell activation.
(c) Add a short note on clonal selection theory. 6+5+4
6. (a) What is the difference between antibody affinity and avidity?
(b) Production of monoclonal antibody by Hybridoma technology.
(c) Write short notes on RNA vaccines. 4+7+4
7. Write short notes on
(a) FACS
(b) ELISA
(c) Fluorescence *In Situ* Hybridization (FISH). 3 x 5