

Seat No. : _____

AI-102

April-2019

B.Sc., Sem.-IV

CC-205 : Biotechnology (Immunology)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) Define Antibody. Explain in detail different classes of antibodies with figures. 14

OR

- (1) Define antigenic determinants and Explain various categories of antigens. 7
(2) List *in vitro* antigen-antibody reactions and explain agglutination and complement types of fixation reactions. 7

- (B) Answer any **four** in brief : 4

- (1) How adjuvants are used in producing vaccine ?
(2) Write difference between Heavy and Light chains of antibody.
(3) Define Paratops.
(4) Name the antibody found in granular secretion.
(5) What are Haptens ?
(6) Define super antigen.

2. (A) Write a detailed note on peripheral organs and their role in immune system. 14

OR

- (1) Describe role of T-lymphocytes in Cell-mediate immunity with illustrated diagrams. 7
(2) Explain antigens processing within Antigen Presenting Cells. 7

- (B) Answer any **four** in brief : 4

- (1) What is the role of plasma cells in immunity ?
(2) What are MHC molecules ?
(3) T_H cells are CD +ve and T_C cells are CD +ve.
(4) Give Two the differences between Primary and Secondary immune responses.
(5) Name the organs involved in adaptive immune response.
(6) Name two non-specific immune components.

3. (A) Write a detailed note on organ transplantation and its limitations. **14**

OR

(1) What is HLA typing ? Explain its role in graft-rejection with suitable diagrams. **7**

(2) List types of tumour and anti-cancer function of CMIR. **7**

(B) Answer any **three** in brief : **3**

(1) What is the role of MIF ?

(2) What is immunosuppression ?

(3) Give difference between MHC class I and class II.

(4) HLA genes are located in which of the human chromosome ?

(5) Why HLA typing is necessary in tissue/organ transplant ?

4. (A) Summarize Autoimmune disorders and Explain any two disorders in detail. **14**

OR

(1) Define acquired immunodeficiency. Discuss any two acquired immunodeficiency types with suitable diagrams. **7**

(2) Explain type I hypersensitivity reactions in detail. **7**

(B) Answer any **three** in brief : **3**

(1) Damage to which cells causes type 1 Diabetes ?

(2) What is Rheumatoid arthritis ?

(3) Which class of antibody is involved in type II hypersensitivity reactions ?

(4) What is delayed hypersensitivity ?

(5) What are anti-histamines ?
