

Seat No. : _____

MD-132

March-2019

B.Sc., Sem.-V

CC-303 : Microbiology

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :** (1) Draw the figure wherever necessary.
(2) **All** questions carry equal marks.

1. (A) Discuss the two arms of immune response. **14**

OR

- (i) Explain acquired immunity and its types. **7**
(ii) Explain the role of MHC proteins in immunity. **7**

(B) Give answers of any **four** in **one** or **two** lines : **4**

- (a) What are HLA cells ?
(b) What is species immunity ?
(c) Name two antigen presenting cells.
(d) Who discovered monoclonal antibody ?
(e) What are CD4 cells ?
(f) Give examples of primary lymphoid organs.

2. (A) Describe the structure and functions of pentamer antibody. **14**

OR

- (i) Describe bacterial cell as a mosaic of antigen. **7**
(ii) What are haptens ? Describe the properties of Immunogen. **7**

(B) Give answers of any **four** in **one** or **two** lines : **4**

- (a) What is antibody diversity ?
(b) Name four types of heavy chains.
(c) Name the enzymes used for the ELISA techniques.
(d) What is immunofluorescence ?
(e) Name two types of complement reactions.
(f) What is neutralization reaction ?

3. (A) Discuss type 1 hypersensitivity reactions in detail. **14**

OR

(i) What is auto immune response ? Describe autoimmune disease and their types. **7**

(ii) Delayed type of hyper sensitivity reactions. **7**

(B) Give answers of any **three in one** or **two** lines : **3**

(a) Define anaphylaxis.

(b) Give examples of allergens.

(c) Define auto graft.

(d) Name tumor antigens.

(e) Name two autoimmune diseases.

4. (A) Discuss principles of prophylaxis and types of vaccines. **14**

OR

(i) Describe mechanism of blood grouping in human blood and it's significance in blood banking. **7**

(ii) Describe the chemical composition of blood in detail. **7**

(B) Give answers of any **three in one** or **two** lines : **3**

(a) Name two anticoagulants.

(b) What is the difference between plasma and serum ?

(c) Give examples of live vaccines.

(d) What is sickle cell anemia ?

(e) Who discover BCG vaccine ?
