



**HCN-003-001519**

Seat No. \_\_\_\_\_

**B. Sc. (Sem. V) (CBCS) Examination**

**October - 2017**

**BT - 503 : Immunology**

**Faculty Code : 003**

**Subject Code : 001519**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**SECTION - I**

**1** Answer the following questions in one word : **20**

- (1) Karl Landsteiner is famous is for \_\_\_\_\_ scientific discovery.
- (2) What is the full form of MHC ?
- (3) \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ all functions as antigen presenting cells.
- (4) Only antigen-presenting cells express class \_\_\_\_\_ MHC molecules, whereas nearly all cells express class \_\_\_\_\_ MHC molecules.
- (5) Which cell arrives first to site of inflammation ?
- (6) What is full form of ADCC ?
- (7) Give two examples of antigen - antibody reaction.
- (8) Name any two major forces linking antigen-antibody.
- (9) T-lymphocytes mature in the \_\_\_\_\_, while B-lymphocytes mature in the \_\_\_\_\_.
- (10) Name immunoglobulin molecule participating in hypertension reaction.
- (11) Give an example of primary immunodeficiency disease associated with thymus.
- (12) Name the molecule which provides antiviral state to host.

- (13) Name the immunoglobulin which crosses placenta.
- (14) \_\_\_\_\_ cells provide an accelerated immune response upon second exposure to a particular antigen.
- (15) \_\_\_\_\_ associated with only multimeric forms of IgM and IgA.
- (16) Helper T-lymphocytes secrete chemical signals called \_\_\_\_\_ that bind to receptors on other lymphatic cells and activate them.
- (17) Give one word for "Highest dilution of antibody still able to give a positive result in a test system".
- (18) A transplant that occurs between species, such as human and a pig, is called a (n) \_\_\_\_\_
- (19) Which molecule can be detected using Western blots technique ?
- (20) Monoclonal antibodies are produced by a fused cell consisting of \_\_\_\_\_ and \_\_\_\_\_.

## SECTION - II

- 2** (a) Write any three out of six. **6**
- (1) What are the two primary roles of the bone marrow ?
  - (2) Write two basic differences between innate immunity and adaptive immunity ?
  - (3) What is isotype switching ?
  - (4) Write the names of enzymes used in the ELISA.
  - (5) Write the function of Adjuvants.
  - (6) Write function of Neutrophils.
- (b) Write any three out of six : **9**
- (1) What is T cell ? Draw and discuss the structure of TCR.
  - (2) Write a short note on structure and function of Dendritic cells.

- (3) Write in detail about antimicrobial activity exhibited by macrophages.
- (4) Write applications of radioisotopes in Immunology.
- (5) Explain how  $T_H$  cells plays an important role in immunity.
- (6) Write a note on agglutination reaction.

(c) Write any three out of five **10**

- (1) What is Haematopoiesis ? Discuss in detail about how different cells formed during haemtopoiesis ?
- (2) Write short note on processing and presentation of cytosolic antigen.
- (3) Write in detail about five elegant discoveries of immunology.
- (4) What is monoclonal antibodies ? Write in detail about hybridoma technology ?
- (5) Write in detail about structure and function of Immunoglobulin.

**3** (a) Write any three out of six : **6**

- (1) Exogenous peptides antigens can be presented by class II MHC molecules. Justify.
- (2) What is immunodeficiency disease ? Enlist types of SCID.
- (3) What is function of immunosuppressive drugs ?
- (4) List cytokines participating in Th1 response.
- (5) Enlist four types of CAM molecules participating in leukocytes transit the bloodstream.
- (6) What is the role of chemokines in the inflammation ?

(b) Write any three out of six : **9**

- (1) List structural and functional difference between class I and class II MHC molecules.
- (2) Describe the general structure and function of the Cytokines.

- (3) What is Graft rejection ? Write in detail about strategies which can be for prevention.
- (4) What are Vaccines ? Discuss in detail about different types of Vaccines.
- (5) Discuss the role of steroids as anti-inflammatory drugs.
- (6) What is CTL ? Write in detail about function of CTL.

(c) Write any two out of five.

**10**

- (1) What is hypersensitivity ? Explain in detail about Type I hypersensitivity reaction ?
- (2) What is HIV ? Discuss the life cycle of HIV.
- (3) What is complement ? Discuss in detail about classical pathway of complement.
- (4) Discuss in detail about T cell maturation ? What is the importance of positive and negative selection during maturation process ?
- (5) What is Auto immune disease ? Describe any one autoimmune disease in detail.

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