



**BCH-003-001519**

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

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

**August – 2021**

**BT - 503 : Immunology**

**Faculty Code : 003**

**Subject Code : 001519**

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

[Total Marks : 70

- 1**
- i. Who is regarded as father of immunology? **20**
  - ii. What is the site of activation and maturation of B lymphocytes?
  - iii. Define Hapten.
  - iv. What are epitopes?
  - v. Define agglutination.
  - vi. Define monoclonal antibodies.
  - vii. Which class of antibody is generally present in secretions?
  - viii. Differentiate between antigen and immunogen.
  - ix. What is the name of MHC in humans?
  - x. Write one difference between peptide binding cleft of MHC class I & MHC class II molecule.
  - xi. Define pleiotropic nature of cytokine.
  - xii. Write four cardinal signs of inflammation.
  - xiii. Define attenuated vaccine.
  - xiv. Who discovered Vaccination?
  - xv. Which antibody is involved in hypersensitivity reaction?
  - xvi. Give any two examples of immunosuppressive drug.
  - xvii. Define chronic inflammation.
  - xviii. Give the one example of autoimmune disease
  - xix. Define xenograft.
  - xx. Deficiency of which enzyme causes SCID.
- 2 a. Attempt any three** **6**
1. Write a short note on artificially acquired active immunity.
  2. Define vaccine.
  3. Discuss the anatomical barriers.
  4. Explain the characteristic of epitope.
  5. Outline the T lymphocyte in immunity
  6. Define Xenograft

- b. Attempt any three** **9**
1. Discuss hematopoiesis.
  2. Define antigen, discuss about the determinants of antigenicity.
  3. Enumerate antigen-antibody reactions. Explain the effects of excess of antigen and antibody on precipitation reaction.
  4. Write briefly the class I and class II HLA molecules
  5. Write a note on inflammation.
  6. Write a note on Grave disease.
- c. Attempt any two** **10**
1. Classify immunity. Describe acquired immunity with examples
  2. Discuss the monoclonal antibody production.
  3. Discuss the T cell maturation process in detail.
  4. Explain western blotting in detail
  5. Discuss on cytokines and its receptors.
- 3 a. Attempt any three** **6**
1. What are secondary lymphoid organs? Give its example
  2. Explain the basic structure of antibody.
  3. Write a note on T-Cell receptor.
  4. Write a note on SCID
  5. Draw the labelled diagram of HIV virus and discuss its the genome organization
  6. Define Interferons.
- b. Attempt any three** **9**
1. Explain the types of immunity in detail.
  2. Explain principle of ELISA techniques
  3. Discuss MHC.
  4. Classify the common vaccines, which are in use for human beings
  5. Distinguish between immediate and delayed type of anaphylaxis
  6. Write a note on autoimmunity diseases.
- c. Attempt any two** **10**
1. Describe the role of various innate immune component in protection against infection.
  2. Write a note on cytosolic pathway of antigen processing and presentation.
  3. Discuss antigen processing and presentation in detail
  4. What is complement? Explain in detail about complement pathway
  5. Define transplantation. Write about the sequence of events occurring in allograft rejection.