



**PA-003-1016037**

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

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

**March / April - 2020**

**Biochemistry : Paper - 602  
(Immunology)**

**Faculty Code : 003**

**Subject Code : 1016037**

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

[Total Marks : 70

- 1 (A) Answer the following questions very briefly or in a one word or in a line : 4
- (1) Write the types of acquired immunity.
  - (2) Define the term immune response.
  - (3) Write the full form of MHC.
  - (4) Write the characteristics of adaptive immunity.
- (B) Answer the following question in brief : (Any One) 2
- (1) Briefly explain Artificially Acquired Immunity.
  - (2) Explain the process of phagocytosis.
- (C) Answer the following question in detail : (Any One) 3
- (1) Draw the diagram showing the activation of  $T_H$  cell.
  - (2) Write a brief note on Cell-Mediated response.
- (D) Answer the following question : (Any One) 5
- (1) Explain the structure of MHC class II and its interaction with the antigenic peptide.
  - (2) Write a detail note on innate immunity.

- 2** (A) Answer the following questions very briefly or in a one word or in a line : **4**
- (1) Write the three important areas of lymph node.
  - (2) Write the factors affecting antigenicity of immunogen.
  - (3) Write the difference between primary and secondary lymphoid organs.
  - (4) Define the term Hinge region.
- (B) Answer the following question in brief : (Any **One**) **2**
- (1) Write the difference between epitopes and paratopes
  - (2) Write the examples of generative lymphoid organs.
- (C) Answer the following question in detail : (Any **One**) **3**
- (1) Draw the well labelled diagram of immunoglobulin.
  - (2) Write a brief note on dendritic cell.
- (D) Answer the following question : (Any **One**) **5**
- (1) Write a detail note on immunoglobulin IgG.
  - (2) Write a note on Thymus with appropriate illustration.
- 3** (A) Answer the following questions very briefly or in a one word or in a line : **4**
- (1) Two separate rearrangement events in heavy chain is
    - (a) D-J joining then V-DJ joining
    - (b) D-V joining then V-DJ joining
    - (c) J-V joining then V-DJ joining
    - (d) V-DJ joining then D-J joining
  - (2) Write the difference between classical and alternative pathway.
  - (3) \_\_\_\_\_ is the full form of ELISA.
  - (4) What do you understand by avidity and affinity of antigen antibody reaction?

- (B) Answer the following question in brief : (Any **One**)      **2**
- (1) Write the difference between agglutinin and precipitatin.
  - (2) Why ELISA is better than RIA ?
- (C) Answer the following question in detail : (Any **One**)      **3**
- (1) Explain double diffusion in two dimensions.
  - (2) Write the various factors affecting antigen-antibody reaction.
- (D) Answer the following question : (Any **One**)      **5**
- (1) Write a note on Activation of complement system by Alternate pathway.
  - (2) Explain the gene rearrangement in kappa type light chain.
- 4 (A) Answer the following questions very briefly or in a one word or in a line :      **4**
- (1) Antibodies against the DNA are the characteristic feature of \_\_\_\_\_.
    - (a) SLE
    - (b) Hashimotoe's thiroiditis
    - (c) IDDM
    - (d) All
  - (2) Hemolytic disease of newborn is the example of which type of hypersensitivity?
  - (3) Define : Degranulation of mast cell
  - (4) Define tumor antigens.
- (B) Answer the following question in brief : (Any **One**)      **2**
- (1) Write names of cells which can kill the tumor cells effectively.
  - (2) Write the difference between type-I and type-II hypersensitive reaction.

- (C) Answer the following question in detail : (Any **One**)      **3**
- (1) What is Autoimmunity? Write the differences between systemic and organ specific autoimmune diseases.
  - (2) Write a note on Hashimoto's Thyroiditis
- (D) Answer the following question : (Any **One**)      **5**
- (1) Write any two clinical conditions associated with Type I hypersensitive reactions.
  - (2) Write a detail note on Multiple Sclerosis.
- 5** (A) Answer the following questions very briefly or in a one word or in a line :      **4**
- (1) Write the full form of TAP.
  - (2) The process of weakening of antigen for vaccine preparation is called \_\_\_\_\_
  - (3) Which test is used to diagnose the HIV positive?
  - (4) Write the full form of BCG.
- (B) Answer the following question in brief : (Any **One**)      **2**
- (1) What do you mean by recombinant Vector vaccine?
  - (2) Which surface molecules are present on HIV?
- (C) Answer the following question in detail : (Any **One**)      **3**
- (1) Draw the diagram showing the maturation of MHC Class I molecule
  - (2) Write a note on Attenuated vaccine..
- (D) Answer the following question : (Any **One**)      **5**
- (1) Explain endocytic pathway of antigen processing and presentation using the labelled diagram.
  - (2) Write the modes of infection of HIV.