

B.Sc. Semester - 5 (CBCS) Examination**Oct/Nov. - 2018****IMMUNOLOGY (CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Que-1 Answer the following.

- (A) Answer the following. (any one out of Two) (07)
- (i) Give an overview of innate immunity.
 - (ii) Describe the process of Hematopoiesis.
- (B) Attempt any one. (out of Two) (04)
- (i) Write any four landmark discoveries in the history of immunology.
 - (ii) Describe the structure and function of B and T lymphocytes.
- (C) Attempt any three. (out of Five) (03)
- (i) Who is regarded as father of immunology?
 - (ii) Write any one difference between innate and adaptive immunity.
 - (iii) Spleen has only immunological functions. (True/False)
 - (iv) What are Hassall's corpuscles?
 - (v) What is Waldeyer's lymphatic ring?

Que-2 Answer the following.

- (A) Answer the following. (any one out of Two) (07)
- (i) Define and differentiate between antigen and immunogen. Compare and contrast upon various classes of immunoglobulin.
 - (ii) Define Monoclonal antibodies and describe its method of production.
- (B) Attempt any one. (out of Two) (04)
- (i) Draw the labelled diagram of immunoglobulin molecules and describe its important structural motif.
 - (ii) Write short note on ELISA.
- (C) Attempt any three. (out of Five) (03)
- (i) Define Epitopes.
 - (ii) Which antibody can cross the placenta?
 - (iii) Which type of forces are involved in antigen antibody interaction?
 - (iv) Interaction between antibody and particulate antigen results in visible clumping known as _____. (Fill in the blank)
 - (v) IgG class of antibody is often work as incomplete antibodies. (True/False)

Que-3 Answer the following.

- (A) Answer the following. (any one out of Two) (07)
- (i) Write a detailed note on signal transduction in B-Cells.
 - (ii) Describe the cytosolic pathway of antigen presentation.
- (B) Attempt any one. (out of Two) (04)
- (i) What do you understand by MHC? Draw labelled diagram of MHC class I molecule and explain its structure.
 - (ii) Compare the structure and function of MHC class I and class II molecule in a tabular form and with suitable diagram.

- (C) Attempt any three. (out of Five) (03)
- (i) In which pathway of antigen presentation proteasome play important role?
 - (ii) Peptide binding cleft in MHC class I is ____ (open/close) at both end. (Fill in the blank)
 - (iii) Many T Cell Receptors (TCRs) recognize the same antigen peptide and many antigen peptides are recognized by the same TCR. (True/False)
 - (iv) MHC class II molecules are present on all nucleated cells. (True/False)
 - (v) Write the name of any one important enzyme which participate in T cell signal transduction.

Que-4 Answer the following.

- (A) Answer the following. (any one out of Two) (07)
- (i) Describe the steps of classical pathway of complement activation with suitable diagram.
 - (ii) Write a detailed note on vaccines.
- (B) Attempt any one. (out of Two) (04)
- (i) Mention the names of important cytokine receptor family and describe the important function of cytokine.
 - (ii) Describe the important steps of inflammation.
- (C) Attempt any three. (out of Five) (03)
- (i) Write four cardinal sign of inflammation.
 - (ii) What is pleiotropy in reference to cytokines?
 - (iii) Classical pathway of complement activation is antibody dependent. (True/False)

Que-5 Answer the following.

- (A) Answer the following. (any one out of Two) (07)
- (i) Write short note on (a) Graves's Disease and (b) SCID.
 - (ii) Write detailed note on Immunosuppressive drugs.
- (B) Attempt any one. (out of Two) (04)
- (i) Define and differentiate between acute, hyper acute and chronic graft rejection.
 - (ii) Describe and differentiate Type I and Type II hypersensitivity.
- (C) Attempt any three. (out of Five) (03)
- (i) Write one difference between primary and secondary immunodeficiency diseases.
 - (ii) Define allograft.
 - (iii) Multiple sclerosis is caused by destruction of the myelin on motor nerves by the immune system. (True/False)
 - (iv) What is the causative organism of Malaria?
 - (v) The size of HIV viral genome is approximately _____kb. (Fill in the blank)
