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MAL-003-001519 Seat No. _____

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

October / November – 2016

Biotechnology : BT-503

(Immunology) (Theory)

Faculty Code : 003
Subject Code : 001519

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory.
(2) Right side figures indicate marks of the question.

1 Answer the following question in one word or sentence : **1×20**

(1) Write the name of enzyme having antibacterial activity.

(2) Which type of immunoglobulins is present normally in plasma at the highest concentration?

(3) Who first developed vaccine for rabies in man?

(4) Give the one name of phagocytic cell.

(5) Give the name of Immunoglobulin which mediate the Type-I hypersensitivity.

(6) Sevier Combined Immunodeficiency (SCID) happen due to the lack of ..... enzyme.

(7) Activated form of B-Cell which produces the antibody is called ..... ?

(8) Write the one example of antigen presenting cell.

(9) Which pathogen causes tuberculosis?

(10) For the identification of soluble antigen which type of antigen-antibody interaction is used.

(11) Substances which stimulate an immune response when they are bound to a larger molecule ..... ?

(12) ..... medium is used for monoclonal antibody production.

(13) HIV belongs to which families of virus?

(14) Antibody elicited by one antigen can some time react with another unrelated antigen is termed as ..... ?

(15) CD4 T cells are generally restricted by which class of MHC?.

(16) What are the first cells that recognize a processed and presented T-dependent antigen ?

(17) MHC class II molecules are made up of two chains called ..... whose function is to bind peptides and present them to ..... T cells.

(18) Cell mediated graft rejection occurs in which two stages, ... and ..... .

(19) T lymphocytes mature in the ..... ?

(20) Peyer's patches are small masses of lymphatic tissue found in which organ of the body?

2 (a) Answer briefly of any three out of six : **2×3**

(1) Write difference between Innate and adaptive immunity.

(2) What do you understand by cross reactivity?

(3) What is difference between affinity and avidity?

(4) What is Monoclonal antibodies? Write two applications of Monoclonal antibodies.

(5) Write short notes on SCID.

(6) What is Co-stimulatory signal during T-cell activation?

(b) Answer any three out of six : **3×3**

(1) Give the detailed structure of spleen.

(2) What is antigen? Write three properties of antigen.

(3) Write short notes on T-Cell receptor.

(4) Write the mechanism of graft rejection during Transplantation.

(5) With two example write the notes on Immunosuppressive drug.

(6) Describe anaphylaxis in brief.

(c) Answer any **two** out of five : **5×2**

(1) Give the detail structure and functions of Primary lymphoid organ."

(2) With labeled structure write the functions of different immunoglobulin.

(3) Discuss briefly exogenous and endogenous pathway for Antigen presentation.

(4) Explain the various step of Inflammation in detail.

(5) What is autoimmunity? Explain cause and symptoms of two autoimmune disease in human body.

3 (a) Answer any **three** out of six : **2×3**

(1) Write three major historical developments in immunology.

(2) Define opsonization.

(3) With two example define the Agglutination reaction.

(4) What is killed vaccine and attenuated vaccine?

(5) What are the various processes which contribute to antibody diversity?

(6) Explain the functions of macro-phages in various tissues.

(b) Answer any **three** out of six : **3×3**

(1) What are the differences between humoral and cell mediated immunity?

(2) What is clonal selection?

(3) Write the principle and methods of ELISA.

(4) Write name of three Immuno Deficiency diseases.

(5) Describe the molecular processes involved in expression of a kappa light chain gene.

(6) Draw the labeled structure of HIV.

(c) Answer any **two** out of five : **5×2**

(1) Describe the various component of Innate immunity.

(2) Write the detail about Monoclonal antibody production.

(3) Enumerate the mechanism of MHC-I mediated immune response.

(4) Write the classical pathway of complement system.

(5) Define hypersensitivity? Describe the type-I hypersensitivity in detail.