



PAR-003-1015035

Seat No. _____

Third Year B. Sc. (Sem. V) (CBCS)

(W.I.F. 2016) Examination

October / November - 2018

BT-503 : Immunology

(New Course)

Faculty Code : 003

Subject Code : 1015035

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

[Total Marks : 70

- 1 (a) Objective : 4
- (1) Give examples of granulocytes.
 - (2) Karl Landsteiner is famous for _____ scientific discovery.
 - (3) Which are primary lymphoid organs?
 - (4) Which cell of immune system has structure similar as dendrites of nerve cells ?
- (b) Answer in brief : (any 1 out of 2) 2
- (1) Give comparison between Innate and Adaptive immunity.
 - (2) Explain Neutrophils.
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Explain lymphocytes.
 - (2) Write Hematopoiesis.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Secondary lymphoid organs. (any two)
 - (2) Role of innate immune response in protection.

- 2** (a) Objective : **4**
- (1) Which antibody has the highest molecular weight ?
How much?
 - (2) Western blotting is used for which type of biomolecule ?
 - (3) Who developed hybridoma technology for production of monoclonal antibody ?
 - (4) Give two examples of antigen - antibody reaction.
- (b) Answer in brief : (any 1 out of 2) **2**
- (1) What is cross reactivity ?
 - (2) Differentiate antigen and immunogen.
- (c) Answer in detail : (any 1 out of 2) **3**
- (1) Explain ELISA.
 - (2) Write Hybridoma technology.
- (d) Write a note on : (any 1 out of 2) **5**
- (1) Immunofluorescence based imaging techniques.
 - (2) Structures and functions of immunoglobulins.
- 3** (a) Objective : **4**
- (1) CD8 T cells are generally restricted by which class of MHC molecule?
 - (2) Give example of Antigen presenting cells.
 - (3) For T cell activation the first enzyme activated is _____, which carry out phosphorylation of tyrosine based immunoreceptor.
 - (4) Give full form: MHC.
- (b) Answer in brief : (any 1 out of 2) **2**
- (1) Explain - Functions of MHC molecules.
 - (2) Define: Signal transduction.

- (c) Answer in detail : (any 1 out of 2) 3
- (1) Write organization of MHC genes.
 - (2) Explain : T-Cell receptors.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Signal transduction in B-cell.
 - (2) Antigen processing and presentation.
- 4 (a) Objective : 4
- (1) Which cell arrive first to the site of inflammation ?
 - (2) Which class of cytokines mainly responsible for protection against viral infection ?
 - (3) Give full form: ADCC
 - (4) Who discovered the first vaccine and against which disease ?
- (b) Answer in brief : (any 1 out of 2) 2
- (1) Define vaccine. Who give the term vaccine?
 - (2) What is phagocytosis ?
- (c) Answer in detail : (any 1 out of 2) 3
- (1) Properties and functions of cytokines.
 - (2) Write about Inflammation.
- (d) Write a note on : (any 1 out of 2) 5
- (1) Regulation of complement system.
 - (2) Cell mediated effector response.
- 5 (a) Objective : 4
- (1) The causative agent of tuberculosis is _____.
 - (2) When organ is transplanted from one to another individual within the same species is called, _____.
 - (3) Give an example of primary immunodeficiency disease.
 - (4) Rheumatoid Arthritis is an autoimmune disease of _____.

- (b) Answer in brief : (any 1 out of 2) 2
- (1) Functions of immunosuppressive drugs.
 - (2) Write causative agent and treatment of malaria.
- (c) Answer in detail : (any 1 out of 2) 3
- (1) What is hypersensitivity ? Explain Type I hypersensitivity.
 - (2) Explain types of graft and graft rejection.
- (d) Write a note on : (any 1 out of 2) 5
- (1) What is autoimmune disease ? Explain any one organ specific autoimmune disease.
 - (2) Explain AIDS as immunodeficiency disease.
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