AAH-003-001637 Seat No. _____

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

March / April - 2016

Immunology Biochemistry : P-602

Faculty Code : 003
Subject Code : 001637

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

SECTION – I

1 Select the correct answer for the questions from the given choice : **20**

(1) MHC molecules are the products of

(a) HLA complex

(b) HIV complex

(c) MALT

(d) All of (a), (b), (c)

(2) Helper T cell can be activated by the interaction with_____

(a) MHC I peptide complex

(b) MHC I Polysaccharide complex

(c) MHC II peptide complex

(d) MHC II polysaccharide complex.

(3) Antibodies against the DNA is the characteristic feature of _____

(a) SLE

(b) Hashimotoe's thiroiditis

(c) IDDM

(d) All

(4) TAP allow the transport of short peptide from _____ to _____

(a) Proteasome, Cytoplasm

(b) Cytoplasm, ER

(c) Cytoplasm, Proteasome

(d) ER, Proteasome

(5) Out of the given vaccine types, select the vaccine which is least effective.

(a) HbsAg

(b) Polio (sabin)

(c) Capsular polysaccharide vaccine

(d) Toxoid

(6) A molecule that reacts with specific antibody but is not immunogenic by itself is called

(a) Carrier (b) Antigen

(c) Haptens (d) Immunogens

(7) In Ouchterlony technique

(a) Antigen diffuse independently through a semi solid medium (agar)

(b) Antibody diffuse independently through a semi solid medium (agar)

(c) Antigen and antibody diffuse independently through a semi solid medium

(d) (a) or (b)

(8) Which of the following is chiefly found on the surface of B-cells as a receptor molecule and involved in cell activation ?

(a) IgA (b) IgM

(c) IgD (d) IgE

(9) Which method is known as RID technique?

(a) Simple diffusion in two dimensions

(b) Double diffusion in one dimension

(c) Single diffusion in one dimension

(d) Double diffusion in two dimension

(10) Order of Activation in Classical Pathway is

(a) C1, C4, C2, C3, C5, C6, C7, C8, C9

(b) C1, C2, C4, C3, C5, C6, C7, C8, C9

(c) C1, C4, C3, C2, C5, C6, C7, C8, C9

(d) C2, C4, C1, C3, C5, C6, C7, C8, C9

(11) 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

(12) Antigen – antibody reactions in vitro are known as

(a) serological reactions

(b) Latex formation

(c) Agglutination reaction

(d) (b) and (c)

(13) Which one of the following is a cell mediated hypersensitive reaction?

(a) Type-I (b) Type-II

(c) Type-III (d) Type-IV

(14) Which barrier is more effective and prevents the risk of infection because of the mechanical injury to the skin?

(a) Phagocytic barrier

(b) Anatomic barrier

(c) Physiological barrier

(d) Inflammatory barrier

(15) Cytotoxic T cell (Tc) and Helper T cell (T_H) differ from each other because....

(a) Tc is non specific and T_H is specific

(b) Tc is a type of lymphocyte while T_H is a Phagocytic cell

(c) Tc interact with MHC I peptide complex while T_H interact with MHC II peptide complex

(d) Tc interact with MHC II peptide complex while T_H interact with MHC I peptide complex

(16) Find out the one which is an odd option from the given options.

(a) Bone marrow (b) Spleen

(c) Lymph node (d) Antibodies

(17) When exposed to an antigen, helper T cells enlarge and secrete messenger molecules called..

(a) Neurotransmitters

(b) Cytokines

(c) Cytotoxic chemicals

(d) Antibodies

(18) Which type of cell is produced by the differentiation of monocytes?

(a) Macrophages (b) Basophils

(c) Mast cells (d) NK cells

(19) In Goodpasture's syndrome, autoantibodies against ____

(a) Acetyl cholin

(b) Basement membrane

(c) Acetyl choline receptors

(d) TSH receptors

(20) In viral Replication of HIV

(a) The gp 120 protein on virus binds specifically to CD4 receptor on host cell with high affinity.

(b) The gp41 protein on virus binds specifically to CD4 receptor on host

(c) The gp 120 protein on virus binds specifically to CD8 receptor on host cell with high affinity.

(d) None of the above

SECTION – II

2 (a) Answer any three from the following : **3×2=6**

(1) Define the term: antigen and antigenicity.

(2) Write the role of HLA-DM.

(3) Draw labeled diagram of immunoglobulin.

(4) Define antitoxins and write its significance in context with vaccination.

(5) Write advantages and disadvantages of RIA.

(6) Write the differences between plasma cells and memory cells.

(b) Answer any three from the following : **3×3=9**

(1) Write a note on Grave's disease.

(2) Write the properties of immunoglobulin.

(3) Explain thymus with appropriate labeled diagram.

(4) Explain Opsonization with diagram.

(5) Write about attenuated vaccine with example.

(6) Explain agglutination inhibition reaction with any one example.

(c) Answer any two from the following : **2×5=10**

(1) Explain classical pathway of complement system.

(2) Explain cytosolic pathway for processing and presentation of antigen.

(3) Explain Type-II Hypersensitive reaction with any one example

(4) Write a note on T lymphocytes.

(5) Write a detailed note ELISA.

3 (a) Answer any three from the following : **3×2=6**

(1) What you understand by line of partial-identity.

(2) Define hemopoiesis.

(3) Write the importance of C_3 complements in complement system.

(4) Write about the role of proteasome.

(5) Write the various mode of HIV transmission.

(6) Define naive B lymphocytes.

(b) Answer any three from the following : **3×3=9**

(1) Write a note on SLE.

(2) Explain complement fixation test in detail.

(3) Explain the structure of MHC class I molecule with diagram.

(4) Explain epitope and paratope with any diagram.

(5) Write a note on primary and secondary immune response.

(6) Explain the term affinity and specificity in antigen antibody reaction.

(c) Answer any two from the following : **2×5=10**

(1) Explain λ type light chain multigene organization.

(2) Explain inflammatory response with appropriate diagram.

(3) Write a note on MHC class II and its interaction with antigenic peptide.

(4) Write a note on toxoid and DNA vaccine.

(5) Define hypersensitivity. Explain type-I hypersensitivity.