

**B****DF-1674**

B. Sc. (Biotechnology) (Sem. III) Examination
March/April – 2016
BT-07 : Fundamentals of Immunology
(Core-I Course-III)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
B. Sc. (Biotechnology) (Sem. III)

Name of the Subject :
BT-07 : Fundamentals of Immunology (Core-I Course-III)

Subject Code No. : 1 6 7 4 Section No. (1, 2,.....): NIL

Seat No. :

Student's Signature

- (2) This exam contains 50 multiple choice questions, each worth I mark.
- (3) Choose only ONE most appropriate answer per question.
- (4) Do not crease or fold the answer sheet.

O.M.R. Sheet ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ O.M.R. Sheet-ની પાછળ છાપેલ છે.

Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.

- 1 The antibodies that lead to precipitation reaction between antigen and antibody are known as :
 - (A) Agglutinogen
 - (B) Precipitin
 - (C) Agglutinin
 - (D) Precipitinogen
- 2 Cytokines are :
 - (A) Hormone-like polypeptides
 - (B) Bacteria
 - (C) Carcinogens
 - (D) Viruses
- 3 The class of an immunoglobulin is determined by
 - (A) the carbohydrate
 - (B) the variable region
 - (C) the J-chain
 - (D) the heavy chain
- 4 Light chains are
 - (A) have only a constant region
 - (B) composed only of carbohydrate
 - (C) not specific for each class of antibody
 - (D) reactive with antigen
- 5 Each of the following is a characteristic of antibodies, EXCEPT which one ?
 - (A) they can combine very specifically with antigen
 - (B) they are proteins with variable and constant regions
 - (C) they are made by activated B cells
 - (D) they are only secreted by T-cells
- 6 Cell mediated immunity is mediated via _____.
 - (A) natural killer cells
 - (B) B Lymphocytes
 - (C) memory cells
 - (D) T-cells
- 7 Which of these factors is secreted by macrophages ?
 - (A) Phylotaxin
 - (B) Interleukin 14
 - (C) Interleukin 6
 - (D) Phycotaxin
- 8 The eosinophils combat with the parasitic infections and worms through :
 - (A) Suppressing worm from entering cells
 - (B) Invagination
 - (C) Investigation
 - (D) Release of cationic proteins and reactive oxygen metabolites
- 9 Which of the following is NOT true of interleukins ?
 - (A) They are able bind antigen with a high level of specificity
 - (B) They are cytokines produced by cells of the immune system
 - (C) They allow one cell to communicate with another cell
 - (D) They are in need of receptors on the target cell in order to mediate their effects
- 10 Which of the following is NOT true of T4 and T8 cell markers ?
 - (A) Both of the markers are present on ALL T-cells
 - (B) These are both surface glycoproteins expressed on T-cells.
 - (C) These serve to distinguish different types of T-cells, e.g., helper, suppressor and cytotoxic from each other
 - (D) These are not found associated with immunoglobulins

- 11 A person with anti-A and anti-B antibodies in their blood has what blood type ?
- (A) type AB
 - (B) type A
 - (C) type O
 - (D) type B
- 12 The full form of abbreviation PRRs is :
- (A) Pathogen recovered receptor
 - (B) Pathogen reactive receptors
 - (C) Pathogen recognition receptors
 - (D) Pattern recognition receptors
- 13 The majority of the thymocyte population is present in which part of thymus ?
- (A) Germinal centers
 - (B) Cortex
 - (C) Medulla
 - (D) Paracortex
- 14 Keratin is produced by which cells in skin ?
- (A) Sebum cells
 - (B) Epidermal cells
 - (C) Keratinocytes
 - (D) Keratinocytes
- 15 GALT is present in
- (A) Tonsils, intestine and throat only
 - (B) Tonsils, adenoids and Peyer's patches
 - (C) Tonsils, nose and throat only
 - (D) Tonsils, mouth and throat only

- 16 The pH of skin is :
- (A) Mild acidic (6-7)
 - (B) Mild acidic (3-4)
 - (C) Mild basic (8-9)
 - (D) Mild acidic (5-6)
- 17 Lysozyme
- (A) Breaks down cell membrane
 - (B) Breaks down proteins
 - (C) Breaks down carbohydrates
 - (D) Breaks down peptidoglycan
- 18 Which one of these can be an efficient opsonin ?
- (A) Antibody and non specific receptors
 - (B) Antibody alone
 - (C) Complement alone
 - (D) Antibody and complement
- 19 Which one of these is not cationic peptide ?
- (A) Lysin
 - (B) Histatin
 - (C) Defension
 - (D) Cathelicidin
- 20 Precursors of macrophages are called
- (A) B cells
 - (B) T cells
 - (C) Plasma cells
 - (D) Monocytes

- 21 MHC genes in mouse is located in
(A) Chromosome 6
(B) Chromosome 17
(C) Chromosome 2
(D) Chromosome 4
- 22 Which of the following is an auto immune disease ?
(A) Asthma
(B) AIDS
(C) Multiple sclerosis
(D) Cancer
- 23 Which antibody characterizes the allergic reaction ?
(A) IgE
(B) IgG
(C) IgA
(D) IgM
- 24 Histamine is secreted by
(A) White blood cells
(B) Epithelial cell
(C) Mast cells
(D) Red blood cells
- 25 Which of the following causes AIDS ?
(A) TMV
(B) Bacteria
(C) Fungus
(D) Retrovirus
- 26 Thymus growth occurs upto
(A) 30 years
(B) 17 years
(C) 12 years
(D) 5 years
- 27 Which of the following secretes immunoglobulin?
(A) Mast cells
(B) T-lymphocyte
(C) B-lymphocyte
(D) Macrophage

- 28 The H-chain of immunoglobulin has a molecular weight
(A) Twice as that of dark chain
(B) Equivalent to that of light chain
(C) Twice that of light chain
(D) Triple the amount of light chain
- 29 Immunoglobulins are chemically
(A) Lipo-proteins
(B) Glycogens
(C) Glyco-proteins
(D) Glycolipids
- 30 Hyper variability regions are present in
(A) dark chain
(B) heavy chain only
(C) light chain only
(D) heavy and light
- 31 Organ transplantation from pig to human is an example for
(A) Xeno-graft
(B) Autograft
(C) Allo-graft
(D) ISO-graft
- 32 Which organ upon activation produces the Acute phase proteins ?
(A) Spleen
(B) Liver
(C) Kidney
(D) Bone marrow
- 33 All of the following are true with respect to IgM antibodies EXCEPT which one
(A) they mediate allergic reaction
(B) it is usually a pentamer
(C) they predominate in the primary response to antigen
(D) they are glycoproteins
- 34 One principal function of complement is to
(A) phagocytize antigens
(B) inactivate perforins
(C) mediate the release of histamine
(D) bind antibodies attached to cell surfaces and to lyse these cells

- 35 One principal function of the Class I and Class II major histocompatibility complex proteins is to
- (A) stimulate production of interleukins
 - (B) transduce the signal to the T-cell interior following antigen binding
 - (C) mediate immunoglobulin class switching
 - (D) present antigen for recognition by the T-cell antigen receptor
- 36 When a B cell encounters antigen to which it is targeted, it divides rapidly and produces
- (A) More antigen
 - (B) Plasma cells
 - (C) T cells
 - (D) Killer cells
- 37 Secondary antibody responses are better because :
- (A) The antibody can be made by both T and B cells
 - (B) They do not require T-cell help
 - (C) They are stronger and faster
 - (D) They provide defense against unrelated antigens
- 38 Complement and antibody are similar in that both :
- (A) are activated in an inflammatory cascade
 - (B) may make bacteria more attractive to phagocytes
 - (C) are produced by mast cells
 - (D) have two identical antigen-binding sites
- 39 All of the following are true of antigen EXCEPT which one of the following?
- (A) They can elicit an immune response
 - (B) They contain epitopes
 - (C) They will react with antibodies
 - (D) They contain paratopes
- 40 All of the following are true with respect to IgE molecules, EXCEPT which one ?
- (A) They can affect the release of histamine and other chemical mediators
 - (B) They are the principal immunoglobulin class involved in allergic reactions
 - (C) They are the least abundant immunoglobulin in the serum
 - (D) They will cross the placenta and fix complement

- 41 Which of the following immunoglobulin is present normally in plasma at the highest concentration ?
 (A) IgD (B) IgG
 (C) IgM (D) IgA
- 42 All of the following are true about antibodies, EXCEPT which one ?
 (A) They are glycoproteins
 (B) They are molecule with a single, defined amino acid sequence
 (C) They occur on the surface of B-lymphocyte
 (D) They predominate the primary immune response to antigen
- 43 The antibodies that are able to cross placenta are :
 (A) IgE
 (B) IgG
 (C) IgG and IgM
 (D) IgD
- 44 The immunoglobulin Joining chain (J-chain) is
 (A) associated with IgE for histamine release
 (B) only produced by T-Cells
 (C) Only produced by neutrophils
 (D) associated with only multimeric forms of IgM and IgA
- 45 All of the following are true EXCEPT
 (A) the class of an immunoglobulin is determined by its heavy chain
 (B) an epitope is a small portion of a macromolecule
 (C) the variable region domains contain the antigen recognition site
 (D) an antigenic determinant is a paratope
- 46 Which immunoglobulin is the principal one found in secretions such as milk ?
 (A) IgD (B) IgG
 (C) IgM (D) IgA
- 47 The inflammatory response includes all of the following except
 (A) temperature increase
 (B) vessel constriction
 (C) increased blood flow
 (D) phagocyte attack
- 48 The different types of blood cells originate from :
 (A) Megakaryocyte
 (B) Haematopoetic stem cell
 (C) Haematoblastoma
 (D) Myeloblast
- 49 The immunoglobulin class which is the least abundant in the normal adult is
 (A) IgD (B) IgG
 (C) IgA (D) IgM
- 50 Which one of these is large granular lymphocyte ?
 (A) Natural killer cells (B) B lymphocyte
 (C) T lymphocyte (D) Plasma cells