

**D****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 A person with anti-A and anti-B antibodies in their blood has what blood type ?
 - (A) type O
 - (B) type B
 - (C) type AB
 - (D) type A

- 2 The full form of abbreviation PRRs is :
 - (A) Pathogen recognition receptors
 - (B) Pattern recognition receptors
 - (C) Pathogen recovered receptor
 - (D) Pathogen reactive receptors

- 3 The majority of the thymocyte population is present in which part of thymus ?
 - (A) Medulla
 - (B) Paracortex
 - (C) Germinal centers
 - (D) Cortex

- 4 Keratin is produced by which cells in skin ?
 - (A) Kerabinocytes
 - (B) Keratinocytes
 - (C) Sebum cells
 - (D) Epidermal cells

- 5 GALT is present in
 - (A) Tonsils, nose and throat only
 - (B) Tonsils, mouth and throat only
 - (C) Tonsils, intestine and throat only
 - (D) Tonsils, adenoids and Peyer's patches

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

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

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

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

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

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