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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 MHC genes in mouse is located in
(A) Chromosome 17
(B) Chromosome 2
(C) Chromosome 4
(D) Chromosome 6

2 Which of the following is an auto immune disease ?
(A) AIDS
(B) Multiple sclerosis
(C) Cancer
(D) Asthma

3 Which antibody characterizes the allergic reaction ?
(A) IgG
(B) IgA
(C) IgM
(D) IgE

4 Histamine is secreted by
(A) Epithelial cell
(B) Mast cells
(C) Red blood cells
(D) White blood cells

5 Which of the following causes AIDS ?
(A) Bacteria
(B) Fungus
(C) Retrovirus
(D) TMV

6 Thymus growth occurs upto
(A) 17 years
(B) 12 years
(C) 5 years
(D) 30 years

7 Which of the following secretes immunoglobulin?
(A) T-lymphocyte
(B) B-lymphocyte
(C) Macrophage
(D) Mast cells

8 The H-chain of immunoglobulin has a molecular weight
(A) Equivalent to that of light chain
(B) Twice that of light chain
(C) Triple the amount of light chain
(D) Twice as that of dark chain

9 Immunoglobulins are chemically
(A) Glycogens
(B) Glyco-proteins
(C) Glycolipids
(D) Lipo-proteins

10 Hyper variability regions are present in
(A) heavy chain only
(B) light chain only
(C) heavy and light
(D) dark chain

11 Organ transplantation from pig to human is an example for
(A) Autograft
(B) Allo-graft
(C) ISO-graft
(D) Xeno-graft

12 Which organ upon activation produces the Acute phase proteins ?
(A) Liver
(B) Kidney
(C) Bone marrow
(D) Spleen

13 All of the following are true with respect to IgM antibodies EXCEPT which one
(A) it is usually a pentamer
(B) they predominate in the primary response to antigen
(C) they are glycoproteins
(D) they mediate allergic reaction

14 One principal function of complement is to
(A) inactivate perforins
(B) mediate the release of histamine
(C) bind antibodies attached to cell surfaces and to lyse these cells
(D) phagocytize antigens

15 One principal function of the Class I and Class II major histocompatibility complex proteins is to

(A) transduce the signal to the T-cell interior following antigen binding
(B) mediate immunoglobulin class switching
(C) present antigen for recognition by the T-cell antigen receptor
(D) stimulate production of interleukins

16 When a B cell encounters antigen to which it is targeted, it divides rapidly and produces

(A) Plasma cells
(B) T cells
(C) Killer cells
(D) More antigen

17 Secondary antibody responses are better because :

(A) They do not require T-cell help
(B) They are stronger and faster
(C) They provide defense against unrelated antigens
(D) The antibody can be made by both T and B cells

18 Complement and antibody are similar in that both :

(A) may make bacteria more attractive to phagocytes
(B) are produced by mast cells
(C) have two identical antigen-binding sites
(D) are activated in an inflammatory cascade

19 All of the following are true of antigen EXCEPT which one of the following?

(A) They contain epitopes
(B) They will react with antibodies
(C) They contain paratopes
(D) They can elicit an immune response

20 All of the following are true with respect to IgE molecules, EXCEPT which one ?

(A) They are the principal immunoglobulin class involved in allergic reactions
(B) They are the least abundant immunoglobulin in the serum
(C) They will cross the placenta and fix complement
(D) They can affect the release of histamine and other chemical mediators

21 Which of the following immunoglobulin is present normally in plasma at the highest concentration ?
(A) IgG (B) IgM
(C) IgA (D) IgD

22 All of the following are true about antibodies, EXCEPT which one ?
(A) They are molecule with a single, defined amino acid sequence
(B) They occur on the surface of B-lymphocyte
(C) They predominate the primary immune response to antigen
(D) They are glycoproteins

23 The antibodies that are able to cross placenta are :
(A) IgG
(B) IgG and IgM
(C) IgD
(D) IgE

24 The immunoglobulin Joining chain (J-chain) is
(A) only produced by T-Cells
(B) Only produced by neutrophils
(C) associated with only multimeric forms of IgM and IgA
(D) associated with IgE for histamine release

25 All of the following are true EXCEPT
(A) an epitope is a small portion of a macromolecule
(B) the variable region domains contain the antigen recognition site
(C) an antigenic determinant is a paratope
(D) the class of an immunoglobulin is determined by its heavy chain

26 Which immunoglobulin is the principal one found in secretions such as milk ?
(A) IgG (B) IgM
(C) IgA (D) IgD

27 The inflammatory response includes all of the following except
(A) vessel constriction
(B) increased blood flow
(C) phagocyte attack
(D) temperature increase

28 The different types of blood cells originate from :
(A) Haematopoetic stem cell
(B) Haematoblastoma
(C) Myeloblast
(D) Megakaryocyte

29 The immunoglobulin class which is the least abundant in the normal adult is
(A) IgG (B) IgA
(C) IgM (D) IgD

30 Which one of these is large granular lymphocyte ?
(A) B lymphocyte (B) T lymphocyte
(C) Plasma cells (D) Natural killer cells

31 The antibodies that lead to precipitation reaction between antigen and antibody are known as :
(A) Precipitin (B) Agglutinin
(C) Precipitinogen (D) Agglutinogen

32 Cytokines are :
(A) Bacteria
(B) Carcinogens
(C) Viruses
(D) Hormone-like polypeptides

33 The class of an immunoglobulin is determined by
(A) the variable region (B) the J-chain
(C) the heavy chain (D) the carbohydrate

34 Light chains are
(A) composed only of carbohydrate
(B) not specific for each class of antibody
(C) reactive with antigen
(D) have only a constant region

35 Each of the following is a characteristic of antibodies, EXCEPT which one ?
(A) they are proteins with variable and constant regions
(B) they are made by activated B cells
(C) they are only secreted by T-cells
(D) they can combine very specifically with antigen

36 Cell mediated immunity is mediated via _____.
(A) B Lymphocytes (B) memory cells
(C) T-cells (D) natural killer cells

37 Which of these factors is secreted by macrophages ?
(A) Interleukin 14 (B) Interleukin 6
(C) Phycotaxin (D) Phylotaxin

38 The eosinophils combat with the parasitic infections and worms through :
(A) Invagination
(B) Investigation
(C) Release of cationic proteins and reactive oxygen metabolites
(D) Suppressing worm from entering cells

39 Which of the following is NOT true of interleukins ?
(A) They are cytokines produced by cells of the immune system
(B) They allow one cell to communicate with another cell
(C) They are in need of receptors on the target cell in order to mediate their effects
(D) They are able bind antigen with a high level of specificity

40 Which of the following is NOT true of T4 and T8 cell markers ?
(A) These are both surface glycoproteins expressed on T-cells.
(B) These serve to distinguish different types of T-cells, e.g., helper, suppressor and cytotoxic from each other
(C) These are not found associated with immunoglobulins
(D) Both of the markers are present on ALL T-cells

41 A person with anti-A and anti-B antibodies in their blood has what blood type ?

(A) type A

(B) type O

(C) type B

(D) type AB

42 The full form of abbreviation PRRs is :

(A) Pathogen reactive receptors

(B) Pathogen recognition receptors

(C) Pattern recognition receptors

(D) Pathogen recovered receptor

43 The majority of the thymocyte population is present in which part of thymus ?

(A) Cortex

(B) Medulla

(C) Paracortex

(D) Germinal centers

44 Keratin is produced by which cells in skin ?

(A) Epidermal cells

(B) Kerabinocytes

(C) Keratinocytes

(D) Sebum cells

45 GALT is present in

(A) Tonsils, adenoids and Peyers's patches

(B) Tonsils, nose and throat only

(C) Tonsils, mouth and throat only

(D) Tonsils, intestine and throat only

46 The pH of skin is :

(A) Mild acidic (3-4)

(B) Mild basic (8-9)

(C) Mild acidic (5-6)

(D) Mild acidic (6-7)

47 Lysozyme

(A) Breaks down proteins

(B) Breaks down carbohydrates

(C) Breaks down peptidoglycan

(D) Breaks down cell membrane

48 Which one of these can be an efficient opsonin ?

(A) Antibody alone

(B) Complement alone

(C) Antibody and complement

(D) Antibody and non specific receptors

49 Which one of these is not cationic peptide ?

(A) Histatin

(B) Defension

(C) Cathelicidin

(D) Lysin

50 Precursors of macrophages are called

(A) T cells

(B) Plasma cells

(C) Monocytes

(D) B cells