



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

AML 2205 : MEDICAL IMMUNOLOGY I

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick Date Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt ALL questions.

Circle the correct answer in section A.

Section A

1. The specific targeted response constitutes the second line of defense in response to an infectious agent and is called?
 - a) Innate line of defense
 - b) adaptive immunity
 - c) acquired immunity

- d) all of those
- 2. The characteristics of adaptive immunity include
 - a) Specificity
 - b) Immunologic memory
 - c) Discrimination of self from non self molecules
 - d) All of those
- 3. Which of the cells are involved in adaptive immune
 - a) B cells and T cells
 - b) B cells only
 - c) T cells only
 - d) Macrophages and NK cells
- 4. T cell mediates
 - a) Humoral immunity
 - b) Non-specific defense
 - c) Cell mediated immunity
 - d) None of these
- 5. The ratio of T cells to B cells is
 - a) 3:1
 - b) 1:3
 - c) 1:1
 - d) 1:2
- 6. The antibody mediated humoral immunity is
 - a) B cells and T cells
 - b) B cells
 - c) T cells
 - d) Macrophages and NK cells
- 7. T cells and B cells originates from?
 - a) Spleen
 - b) Thymus
 - c) Bone marrow
 - d) Lymph nodes
- 8. Injection of anti-venom against snake bite is an
 - a) Active immunity
 - b) Passive immunity
 - c) Non-specific immunity
 - d) Phagocytic immunity
- 9. Class I MHC molecules present peptides obtained from?
 - a) The extracellular space
 - b) The interstitial fluid
 - c) The plasma
 - d) The cell cytoplasm

10. Active immunity involves
- Contact with foreign antigens
 - Immunologic memory
 - Slow primary response
 - All of the above
11. Active immunity is produced by
- Clonal selection
 - Clonal expansion
 - Both a and b
 - All of these
12. Cells involved in adaptive immunity or acquired immune immunity defense include
- T cells
 - B cells
 - Antigen presenting cells
 - All these
13. Plasma cells are secreted by
- T cells
 - B cells
 - Antigen presenting cells macrophages
 - Natural killer cells
14. The characteristics of passive immunity include
- Immediate relief
 - No immunologic memory
 - Resistance for a short period only
 - All those
15. Immunologic memory is provided by
- B cells
 - T cells
 - Both a and b
 - Phagocytes.
14. The second most abundant Ig is
- IgM
 - IgG
 - IgA
 - IgE
15. The most effective Ig is
- IgM
 - IgG
 - IgA
 - IgE

16. IgM is a
- Pentamer with 10 antigen binding sites
 - Tetramer with 8 antigen binding sites
 - Monomer with 2 antigen binding sites
 - Dimer with 4 antigen binding sites
17. The Ig that mediates allergic reaction
- IgM
 - IgG
 - IgA
 - IgE
18. The Ig involved in host defense against parasitic infection is
- IgM
 - IgG
 - IgA
 - IgE
19. The bonds involved in antigen-antibody interactions are
- Weak hydrogen bonds and Vander-wall forces
 - Strong covalent bonds
 - Strong sulphide bonds
 - All of these
20. Which of the following statement is true
- All immunogens are antigens but all antigens are not immunogens
 - All immunogens are antigens and all antigens are immunogens
 - All immunogens are not antigens but all antigens are immunogens
 - All immunogens are proteins and all proteins are immunogens
21. Any agents that may stimulate the immune system and enhance the response without having any specific antigen effect by itself are called?
- Antigens
 - Allergens
 - Adjuvants
 - Carriers
22. Small chemical groups on the antigen molecule that can react with antibody are called?
- Epitope
 - Paratope
 - Isotope
 - Allotrope
23. Which of the statements are true regarding antigen
- Generally self-molecule and molecules with low molecular weight are non immunogenic

- b) An antigen generally has many epitopes
 - c) Heteropolymers are more immunogenic than homopolymers
 - d) All of these.
24. Any substance or molecules that interact with antibodies are called
- a) Antigens
 - b) Antibodies
 - c) Epitope
 - d) Immunogens
25. Antigens can be
- a) Proteins
 - b) Carbohydrates
 - c) Nucleic acids
 - d) All these
26. Any molecule that induces or elicits an immune response are
- a) Antigens
 - b) Antibodies
 - c) Epitope
 - d) Immunogens
27. The primary role of Th-2 cells is to:
- a) Function as T killer cells
 - b) Activate Nk cells
 - c) Activate macrophages
 - d) Activate B cells
28. A molecule that reacts with specific antibody but is not immunogenic by itself is called
- a) Carrier
 - b) Antigen
 - c) Hapten
 - d) Immunogen
29. Haptens are immunogenic upon -----
- a) Covalently to a carrier protein
 - b) Covalently to an antibody
 - c) Covalently to a paratope
 - d) None of these
30. Haptens cannot activate T cell or B cells due to
- a) Its low molecular weight antigens arbuscules
 - b) Its inability to bind to MHC
 - c) Both a and b
 - d) None of these
31. A complete antigen is capable of
- a) Inducing an immune response

- b) Can interact with antibody
- c) Induces antibody production
- d) All of these

32. Which of the following is a hapten

- a) Cyanide
- b) Paracetamol
- c) Penicillin
- d) None of these

33. An incomplete antigens

- a) Are also called as haptens
- b) Are immunogenic upon binding covalently to a carrier protein
- c) Cannot induce antibody production by itself
- d) All of the above

34. Antibodies are

- a) Proteins
- b) Glycoproteins
- c) Carbohydrates
- d) Nucleic acid

35. Antibodies consist of ?

- a) 2 light chains and 2 heavy chains arranged in a Y-shaped configuration
- b) A light chain and 2 heavy chains arranged in a Y – shaped configuration
- c) 2 light chains and a heavy chains arranged in a Y-shaped configuration
- d) All of those

36. Light chains and heavy chains are joined by?

- a) Covalent bond
- b) Hydrogen bond
- c) Di-sulphide bond
- d) Ionic bond

37. The antigen binding site on an antibody is called

- a) Antitope
- b) Epitope
- c) Paratope
- d) Endotope

38. An antibody has

- a) 2 Fab regions and an Fc region
- b) An Fab region and an Fc region
- c) 2 Fab regions and 2 Fc regions
- d) Many Fab regions and many Fc regions

39. The hyper-variable region resides in the?

- a) N terminal region of light chain
- b) N-terminal region of light and heavy chain
- c) C-terminal region of light chain
- d) C-terminal region of light chain and heavy chain

40. Fab stands for

- a) Fragment antibody binding
- b) Fragment antigen binding
- c) Fragment antibody or antigen binding
- d) Fragment affinity binding

SECTION B

- 41. Using a flow illustration, discuss the alternative complement pathway (20mks)
- 42. a) Outline five differences between killed vaccines and live attenuated vaccines (10mks)
b) Draw a well labeled structure of an immunoglobulin (10mks)
- 43. Discuss the lymphoid organ (20mks)