



AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF REHABILITATIVE MEDICINE

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS

UNIT CODE: PHT 122

DATE: NOVEMBER 2022

UNIT NAME: IMMUNOLOGY

INSTRUCTIONS

1. All students will have three (2) hours to complete the examination
2. This is an online exam, Attempt all questions as per the instruction
3. It is the student's responsibility to report any page and number missing in this paper.
4. Check that the paper is complete
5. Total number of pages is 9 including the cover.
6. Read through the paper quickly before you start.

All the Best!!

TOTAL: _____/70

PERCENT: _____/100%

POINTS EARNED TOWARDS FINAL GRADE _____/70

Section A

1. The branch of biology, which involves the study of immune systems in all organisms is called_____.

- (a) Zoology
- (b) Microbiology
- (c) Immunology
- (d) Biotechnology

2. Which of the following immunity is obtained during a lifetime?

- (a) Acquired immunity
- (b) Active immunity
- (c) Passive immunity
- (d) None of the above.

3. How many types of immunoglobulin are there?

- (a) Five.
- (b) Three.
- (c) Two.
- (d) Four.

4. Which of the following cells is involved in cell-mediated immunity?

- (a) Leukaemia
- (b) T cells
- (c) Mast cells
- (d) Thrombocytes

5. Which of the following protects our body against disease-causing pathogens?

- (a) Respiratory system
- (b) Immune system
- (c) Digestive system
- (d) Respiratory system

6. Which of the following statements is true about the IgM of humans?

- (a) IgM can cross the placenta
- (b) IgM can protect the mucosal surface
- (c) IgM is produced by high-affinity plasma cells
- (d) IgM is primarily restricted in the circulation

7. Interferons are

- (a) Cytokine barriers
- (b) Physical barriers
- (c) Cellular barriers
- (d) Physiological barriers

8. Which of the following cells of the immune system do not perform phagocytosis?

- (a) Macrophage
- (b) Neutrophil
- (c) Eosinophil
- (d) Basophil

9) Monocytes differentiate into which kind of phagocytic cells?

- (a) Neutrophil
- (b) B cell
- (c) Macrophage
- (d) T cell

10. Naturally acquired active immunity would be most likely acquired through which of the following processes?

- (a) Vaccination
- (b) Drinking colostrum
- (c) Natural birth
- (d) Infection with disease-causing organism followed by recovery

11. Which of the following conveys the longest-lasting immunity to an infectious agent?

- (a) Naturally acquired passive immunity

- (b) Artificially acquired passive immunity
- (c) Naturally acquired active immunity
- (d) All of these

12. Which substances will not stimulate an immune response unless they are bound to a larger molecule?

- (a) Antigen
- (b) Virus
- (c) Hapten
- (d) Miligen

13. B and T cells are produced by stem cells that are formed in:

- (a) Bone marrow
- (b) The liver
- (c) The circulatory system
- (d) The spleen

14. B cells mature in the..... While T cells mature in the

- (a) Thymus/bone marrow and gut-associated lymphoid tissue (GALT)
- (b) Spleen/bone marrow and GALT
- (c) Bone marrow and GALT/thymus
- (d) Liver/kidneys

15. Which of the following immune cells/molecules are most effective at destroying intracellular pathogens?

- a) T helper cells
- b) B cells
- c) T cytolytic cells
- d) Complement

16. A living microbe with reduced virulence that is used for vaccination is considered:

- a) A toxoid
- b) Dormant
- c) Virulent
- d) Attenuated

17. B cells that produce and release large amounts of antibodies are called:

- a) Memory cells
- b) Basophils

- c) Plasma cells
- d) Killer cells

18. The specificity of an antibody is due to

- a) Its valence
- b) The heavy chains
- c) The Fc portion of the molecule
- d) The variable portion of the heavy and light chain

19. In agglutination reactions, the antigen is a..... and in precipitation reactions, the antigen is a.....

- a) whole-cell/soluble molecule
- b) Soluble molecule/whole-cell
- c) Bacterium/virus
- d) Protein/carbohydrates

20. B Cells are activated by

- a) Complement
- b) Antibody
- c) Interferon
- d) Antigen

21. Fusion between a plasma cell and a tumor cell creates a

- a) Myeloma
- b) Natural killer cell
- c) Lymphoblast
- d) Lymphoma

22. Monoclonal antibodies recognize a single:

- a) Antigen
- b) Bacterium
- c) Epitope
- d) B cell

23. Cell-mediated immunity is carried out by..... while humoral immunity is mainly carried out by.....

- a) B cells/T cells
- b) Epitopes/antigens

- c) T cells/B cells
- d) Antibodies/antigens

24. The ability of the immune system to recognize self-antigens versus nonself antigen is an example of:

- a) Specific immunity
- b) Tolerance
- c) Cell-mediated immunity
- d) Antigenic immunity

25. Which of the following cells produces Anti-bodies?

- a) Macrophage.
- b) B-cells.
- c) T-cells
- d) plasma cells

26. Which of the following Antibodies cross the placenta?

- a) IgA.
- b) IgE.
- c) IgG.
- d) IgD.

27. Which of the following is not involved in first line defence?

- a) Mucus membranes
- b) Saliva
- c) Tears
- d) Antibodies

28. Natural killers cells are found in all of the following except:

- a) Blood
- b) Spleen
- c) Lymph nodes
- d) Red bone marrow

29. Wandering macrophages are phagocytes that develop from:

- a) Neutrophils
- b) Fixed macrophages

- c) Basophils
- d) Monocytes

30. Which is not one of the four characteristic symptoms of inflammation?

- a) Redness
- b) Swelling
- c) Pain
- d) Heat

31. Which of the following is not involved in specific immunity?

- a) T cell
- b) Plasma cell
- c) B cell
- d) Memory cell

32. Which of the following immunoglobulins is responsible for most allergic and hypersensitivity reactions?

- a) IgA
- b) IgG
- c) IgE
- d) IgM

33. Chemicals released from mast cells during an allergic reaction include all of the following except:

- a) Histamine
- b) Prostaglandins
- c) Leukotrienes
- d) Cytokines

34. The presence of IgM indicates:

- a) Activation of B cells
- b) A recent exposure has taken place
- c) An allergic reaction is present

d) A reaction between mother and foetus across the placenta

35. Auto-immunity develops due to:

- a) Loss of T cells
- b) Loss of plasma cells
- c) Loss of complement
- d) Loss of immunological tolerance

36. Artificially acquired passive immunity refers to immunity from:

- a) Transfer of antibodies from mother to foetus across the placenta
- b) Recognition of an antigen by B cells
- c) Injection of the antigen in a vaccination
- d) IV injection of immunoglobulins

37. J-chains are associated with

- a) IgG
- b) Polymeric Immunoglobulins (More Than Two Fab's).
- c) Serum IgA
- d) IgE

38. The antigen presenting cell

- a) May Be A Dendritic Cell In The Skin.
- b) May Be A T Cell
- c) Does Not Produce Cytokines Which Influence The Adaptive Response
- d) Matures Upon Antigenic Stimulation And Becomes A Plasma Cell.

39. The lag phase of the booster response is:

- a) Very Short, Due To Memory Cells.
- b) Very Short Due To The Lack Of Antigen Presenting Cells.
- c) Very Short When Dendritic Cells Are Absent.
- d) Very Short, Due To The Presence Of Accessory Cells

40. Immunoglobulin classes must distinguished by the type of:

- a) Light Chains They Possess.
- b) Carbohydrate on Their Light Chains.
- c) Constant Regions in Their Light Chains.

d) Heavy Chains They Possess.

SECTION B

41. State any three functions of IgG. (3marks)
42. Describe three characteristics of Cell mediated immunity. (3marks)
43. Explain the any two types of T cell Sub sets. (2 marks)
44. Describe the function of phagocytic cells. (2 marks)

SECTION C

45. (a) Describe the primary and secondary immune response. (10 marks)
- (b) Draw a labelled diagram of a lymph node. (10 marks)

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