

CANDIDATE NUMBER.....



"Investing in Africa's Future"

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES
DEPARTMENT OF HEALTH SCIENCES
BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS
END OF FIRST SEMESTER FINAL EXAMINATIONS**

SLS208: IMMUNOLOGY

NOVEMBER 2018

LECTURER: MR G. MALUNGA

DURATION: 3 HOURS

INSTRUCTIONS

Write your candidate number on the space provided on top of each page
Answer **all** questions in sections A on the question paper.
Answer **all** questions in section B on separate answer sheets provided.
Answer any **3** questions in section C on separate answer sheets provided
The mark allocation for each question is indicated at the end of the question
Credit will be given for logical, systematic and neat presentations in sections B and C

SECTION A : MULTIPLE CHOICE [40 MARKS]

- **Answer all questions by encircling the correct response T for TRUE or F for FALSE for each statement in all the questions**
- **Each correct response is allocated half mark**

1. The following forms part of the second line of defense of the immune system
T F a) Plasma cells
T F b) Macrophages
T F c) Cerumen
T F d) Antibodies
2. Cells of the immune system include
T F a) Natural killer cells
T F b) Eosinophils
T F c) Dendritic cells
T F d) Macrophages
3. The following are secondary lymphoid organs
T F a) Thymus
T F b) Spleen
T F c) Lymph nodes
T F d) MALT
4. The spleen is responsible for
T F a) phagocytosis
T F b) destruction of platelets
T F c) proliferation of B cells
T F d) filtration of lymph fluid
5. An example of a physical barrier to infection is
T F a) skin
T F b) lysozyme in saliva
T F c) cilia in the respiratory tract
T F d) cytotoxic T cells
6. The following refers to the development of immune cells
T F a) NK cells develop from lymphoid progenitor cells
T F b) Mast cells develop from the lymphoid progenitor cell
T F c) Macrophages develop from the myeloid progenitor cell
T F d) B cells mature in the spleen
7. Mucosal immune tissues include
T F a) GALT
T F b) NALT
T F c) PALT
T F d) BALT

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8. Natural killer cells
T F a) mediate ADCC
T F b) destroy cancerous cells
T F c) bind IgG
T F d) act as APC for T cells
9. The following refers to immunoglobulins
T F a) IgG has 4 subclasses
T F b) IgM has the highest avidity
T F c) IgD bind the complement
T F d) IgE is the least common immunoglobulin
10. Receptors associated with innate immunity recognize microbes by detecting
T F a) insulin.
T F b) pathogen associated molecular patterns (PAMPs)
T F c) Toll-like receptors (TLR)
T F d) complement.
11. The interaction between antibody and antigen can be detected by
T F a) agglutination
T F b) Polymerase chain reaction (PCR)
T F c) Rapid plasma reagin
T F d) precipitation
12. The T Cell Receptor
T F a) consists of α and β chains only
T F b) can also be secreted
T F c) act only as a receptor
T F d) doesn't have a constant region
13. The following are immunodiffusion methodologies
T F a) precipitation
T F b) immunoelectrophoresis
T F c) Ouchterlony disc assay
T F d) PCR
14. The following factors affect immunoassays
T F a) ionic strength of buffer
T F b) gel pore size
T F c) incubation temperature
T F d) strength of electrical current

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15. The following tests are examples of immunochromatographic techniques
- T F a) ELISA
 - T F b) TPHA
 - T F c) Rapid HIV
 - T F d) RPR
16. Regarding immunohistochemistry
- T F a) Fluorescent substances are sometimes used
 - T F b) Enzyme label on antibody is reacted with a substrate
 - T F c) The direct method of immunohistochemical staining uses one labelled antibody
 - T F d) The indirect method of immunohistochemical staining uses one antibody labeled with avidin-biotin complex
17. Antibody titer refers to the:
- T F a) Absolute amount of specific antibody.
 - T F b) Affinity of specific antibody.
 - T F c) Avidity of specific antibody.
 - T F d) Concentration of specific antibody.
18. Latex particles are commonly used in:
- T F a) Agglutination tests.
 - T F b) Affinity chromatography
 - T F c) Affinity measurements
 - T F d) Adjuvants
19. A chromogen may be used in the following assays?
- T F a) Direct immunosorbent assay
 - T F b) Indirect immunosorbent assay
 - T F c) Western blotting
 - T F d) All of the above
20. The following assay(s) involve(s) separation of antigens by size on a gel, followed by diffusion and precipitation
- T F a) Indirect immunosorbent assay
 - T F b) Flow cytometry
 - T F c) Double diffusion immunoassay
 - T F d) Immunoelectrophoresis

SECTION B: [20 MARKS]

Answer all questions on separate answer sheets provided

1. State one function of each of the following cells of the immune system
 - a) Mast cells
 - b) Macrophages
 - c) Dendritic cells
 - d) Neutrophils
 - e) Basophils
2. State any 5 characteristics of innate immunity? [5]
3. What are the functions of antibodies? [5]
4. State the main stages of an ELISA. [5]

[5]

SECTION C : [60 marks]

Answer any 3 questions from this section on separate answer sheets provided

1. Describe the process of phagocytosis in detail. [20]
2. Discuss the differences between acute inflammation and chronic inflammation. [20]
3. Describe how exogenous antigens are processed. [20]
4. Describe the detailed structure of an antibody with the aid of a well labelled diagram. [20]
5. Explain the principles of the following immunological techniques
 - a) Immunochromatography. [10]
 - b) Immunoelectrophoresis. [10]