



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 307: FUNDAMENTALS OF IMMUNOLOGY

DATE: 16/3/2022

TIME : 8:30 – 10:30 AM

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## INSTRUCTIONS

Answer Question 1 and any other two questions

Use clear and well labelled diagrams to illustrate your answer as appropriate

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- i. Compare the structure and function of various agranulocytes (3 marks)
- ii. Explain the function of the following in an Ig molecule (3 marks)
  - a. ACS
  - b. HPV region
  - c. Sulfide bond
- iii. Outline the actions that follow activation of the complement pathway (3 marks).
- iv. Explain the immunological basis the pregnancy test strips (3 marks)
- v. Differentiate between an epitope and a paratope (3 marks)
- vi. Explain the properties of the short chain of an Ig molecule (3 marks)
- vii. Outline the requirements for successful organ transplantation (3 marks)
- viii. Explain the roles of any three organs of the immune system (3 marks)

- ix. Using an example, explain non-susceptibility to infection by a pathogen (3 marks)
- x. Characterize an antigen – antibody reaction (3 marks)
  
- 2. a. Discuss the role of blood in the immune system (12 marks)  
b. Discuss the structure of IgM in relation to function (8 marks)
- 3 a. Explain immunity to viral infections (8 marks)  
b. Discuss bonding between and antigen and an antibody (12 marks)
- 4. Discuss the types of immunity in man (20 marks)
- 5. Discuss the autoimmune disorders. (20 marks)