MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 408: APPLIED IMMUNOLOGY

DATE: 22/1/2021 **TIME: 8.30-10.30 AM**

INSTRUCTIONS

1. Answer Question one (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A

QUESTION ONE (COMPULSORY) (30 MARKS)

a) State three immune complex diseases and explain their occurrence (3 marks)

b) Explain the various types of agglutination reactions stating their applications (3 marks)

c) Explain direct ELISA test giving its advantages and disadvantages. (3 marks)

d) Outline the importance of vaccines (3 marks)

e) Briefly describe gene therapy. (3 marks)

f) Describe hybridoma technology (3 marks)

g) Explain the application of immunological principles in research. (3 marks)

h) Describe a polymerase chain reaction (3 marks)

i) Explain the role of transgenic models in management of diseases. (3 marks)

j) State three advantages of Western blotting (3 marks)

SECTION B ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 MARKS)

Explain the different types of immune responses. .

QUESTION THREE (20 MARKS)

Describe the role of MHC molecules and genetic restriction of immune responses.

QUESTION FOUR (20 MARKS)

Explain the applications of immunological principles in immunotherapy

QUESTION FIVE (20 MARKS)

Discuss the various immunological techniques in biomedical and clinical medicine