



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE
IN BIOLOGY

SZL 408: APPLIED IMMUNOLOGY

DATE: 18/12/2017

TIME: 8.30-10.30 AM

INSTRUCTIONS

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

SECTION A

1. 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) Describe briefly 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 transplants in management of diseases. (3 marks)
j) State three advantages of flow cytometry (3 marks)

SECTION B

2. Discuss the different types of immune responses. (20 marks)
3. Describe the role of MHC molecules and genetic restriction of immune responses. (20 marks)
4. Explain the applications of immunological principles in immunotherapy (20 marks)
5. Discuss the various immunological techniques in biomedical and clinical medicine (20 marks)