



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2023/2024

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF
SCIENCE IN MOLECULAR BIOLOGY

SZE 5155: PHARMACEUTICAL BIOTECHNOLOGY

DATE: APRIL 2024

TIME: 3 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (20 MARKS)

- a) Discuss the steps of recombinant DNA technology (5 marks)
- b) Describe the process of DNA replication in human genome (5 marks)
- c) Discuss targeted therapy with respect to cancer (5 marks)
- d) Discuss modern approaches in vaccination (5 marks)

QUESTION TWO (20 MARKS)

Discuss the classification of antimicrobial agents

QUESTION THREE (20 MARKS)

Discuss in details the principle, basic steps and applications of the following assays

- i. Polymerase chain reaction (10 marks)
- ii. Southern blotting (10 marks)

QUESTION FOUR (20 MARKS)

Describe HIV life cycle in detail

QUESTION FIVE (20 MARKS)

Discuss the role of enzymes in phase I drug metabolism