



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2022/2023

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

SZE 5151: GENOMICS, PROTEOMICS, METABOLOMICS AND TRANSCRIPTOMICS

DATE: APRIL 2023

TIME: 3 HOURS

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

QUESTION ONE (20 MARKS)

- a) Explain the following terms: (6 marks)
- (i) Homology
 - (ii) Linkage analysis
- b) Describe the roles of gene expression analysis (8 marks)
- c) Explain the consideration when choosing a platform to use in sequencing (6 marks)

QUESTION TWO (20 MARKS)

Discuss the mass spectrometry workflow and its application

QUESTION THREE (20 MARKS)

Discuss the laboratory methods used to analyse gene transcription from single genes to whole genome transcriptomics

QUESTION FOUR (20 MARKS)

Discuss the applications of next generation sequencing