



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2022/2023

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

SZE 5153: BIOINFORMATICS

DATE: APRIL 2023

TIME: 3 HOURS

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

QUESTION ONE (20 MARKS)

- a) Describe the methods used in phylogenetic analysis (8 marks)
- b) Explain the roles of multiple sequence alignment (6 marks)
- c) Explain the following terms (6 marks)
 - (i) Data normalization
 - (ii) Motif finding

QUESTION TWO (20 MARKS)

discuss the microarray data analysis of gene expression levels (20 marks)

QUESTION THREE (20 MARKS)

Discuss next generation sequencing data analysis (20 marks)

QUESTION FOUR (20 MARKS)

Discuss protein structure prediction (20 marks)