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University Examinations 2023/2024

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN BIOCHEMISTRY AND BACHELOR OF BIOTECHNOLOGY

SHC 3401: BIONFORMATICS

DATE: DECEMBER 2023

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- a) Explain the main focus of the field of bioinformatics (4 marks)
- b) Illustrate the structural design of a typical protein coding gene locus (6 marks)
- c) Describe the basic principles on which the field of phylogenetic is based (5 marks)
- d) Explain three fields of study that are part of the bioinformatics (6 marks)
- e) Explain the commonly used computation method of protein function prediction (5 marks)
- f) Describe the hierarchical protein structures (4 marks)

QUESTION TWO (20 MARKS)

Discuss two methods of phylogenetic analyses employed in biology (20 marks)



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QUESTION THREE (20 MARKS)

Discuss five molecular markers that are used in molecular biology (20 marks)

QUESTION FOUR (20 MARKS)

Discuss the general steps in protein structure prediction (20 marks)



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