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University Examinations 2023/2024

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BIOTECHNOLOGY

SHD 3454: GENOMICS AND PROTEOMICS

DATE: APRIL 2024

TIME: 2 HOURS

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

QUESTION ONE (30 MARKS)

- a) Outline steps for building UniGene (5 marks)
- b) Highlight the procedure used to generate STACK database (6 marks)
- c) State obstacles that hamper successful homology modelling for proteins very distantly related to structure templates (3 marks)
- d) Outline the features of the probes used in applied bio systems solid sequencing (3 marks)
- e) Outline the requirements of a major database project (7 marks)
- f) Explain some of the clues given by comparisons of expression patterns (6 marks)

QUESTION TWO (20 MARKS)

Discuss the applications of DNA microarrays

QUESTION THREE (20 MARKS)

Discuss high-resolutions maps that are directly based on DNA sequences

QUESTION FOUR (20 MARKS)

Describe the whole-genome shotgun sequencing approach