

UNIVERSITY OF ESWATINI
DEPARTMENT OF BIOLOGICAL SCIENCES
RESIT EXAMINATION PAPER MAY 2019

TITLE OF PAPER: GENOMICS

COURSE CODE: BIO342

TIME ALLOWED: THREE HOURS

INSTRUCTIONS:

1. ANSWER ALL FOUR QUESTIONS IN THIS PAPER
2. EACH QUESTION COUNTS 25 MARKS
3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

SPECIAL REQUIREMENTS: NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATORS

Question 1

- (a) Given that, starting from the sequencing primer, the following is the ssDNA sequence: G T A C G A A A T C A G G A. Sketch the expected electrophoretogram from this Sanger sequencing experiment. (5 marks)
- (b) Write brief descriptions/notes on the following as they relate to functional genomics:
- (i) Site-directed mutagenesis (5 marks)
 - (ii) RNAi (5 marks)
 - (iii) Yeast two-hybrid system (5 marks)
 - (iv) DNA microarrays (5 marks)

Question 2

Discuss the concept of genome annotation, highlighting the tools used and purpose thereof. (25 marks)

Question 3

Provide an overview of whole genome sequencing methods. (25 marks)

Question 4

Appraise the relevance of interactomics in biochemical and clinical research. (25 marks)

END OF EXAMINATION PAPER