

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

TITLE OF PAPER: EVOLUTION

COURSE CODE: BIO312/B403

TIME ALLOWED: THREE HOURS

INSTRUCTIONS

1. ANSWER ANY FOUR QUESTIONS IN

THIS PAPER

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

Answer any four questions in this paper

Question 1

Discuss ways in which disruption of Hardy-Weinberg equilibrium may lead to evolution.

[Total marks = 25]

Question 2

Discuss different causes of speciation.

[Total marks = 25]

Question 3

Discuss different stages in Hominid evolution.

[Total marks = 25]

Question 4

Giraffes have long necks, which are necessary to reach leaves and fruits on trees. Contrast how Lamarck and Darwin would explain the evolution of these long-necked giraffes using their respective theories of acquired characteristics and natural selection.

[Total marks = 25]

Question 5

"There is no such thing as evolution." Yes/No, Discuss.

[Total marks = 25]

END OF EXAMINATION PAPER

UNIVERSITY OF ESWATINI
DEPARTMENT OF BIOLOGICAL SCIENCES
MAIN 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

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Question 1

- (a) Explain the principle of cycle sequencing. (9 marks)
- (b) Discuss the advantages and disadvantages of Next Generation Sequencing methodologies. (16 marks)

Question 2

Discuss DNA microarrays highlighting their applications in biochemical and biomedical functional genomics research. (25 marks)

Question 3

Discuss the application of bioinformatics as well as structural and functional genomics. (25 marks)

Question 4

Discuss the concept of interactomics in terms of in terms of genomics. (25 marks)

END OF EXAMINATION PAPER