

**UNIVERSITY OF SWAZILAND
MAIN EXAMINATION PAPER 2012/2013**

TITLE OF PAPER: EVOLUTION

COURSE CODE: B403

TIME ALLOWED: THREE (3) HOURS

- INSTRUCTIONS:**
1. ANSWER ANY FOUR QUESTIONS.
 2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS.
 3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELED DIAGRAMS WHERE APPROPRIATE.

SPECIAL REQUIREMENTS:

NONE

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

ANSWER ANY FOUR (4) OUT OF THE SIX (6) QUESTIONS

QUESTION 1

Explain why ecological considerations are not enough to explain the broad-scale distributions of plants and animals. Give examples to illustrate your answer.

[25 marks]

QUESTION 2

Explain how cladistics can be used to classify organisms.

[25 marks]

QUESTION 3

There are three methods evolutionists can use to compare the respective roles of genetic drift and natural selection in the creation of genetically-based variation. Describe these three methods, providing real-life examples to illustrate your answer.

[25 marks]

QUESTION 4

Write an essay entitled "Mass Extinctions: a modern perspective". Illustrate your answer with relevant examples, especially from the fossil record.

[25 marks]

QUESTION 5

Why is genetic variation important for evolution? And how is this variation created?

[25 marks]

QUESTION 6

Write explanatory notes on the following:

- a) Directional selection.
- b) Hardy-Weinberg equilibrium.
- c) Translocation.
- d) Speciation by polyploidy.
- e) Permineralization.

[5 marks each]

[25 marks]