UNIVERSITY OF SWAZILAND
MAIN EXAMINATION PAPER 2007/2008

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 FOUR (4) OUT OF SIX (6) QUESTIONS

QUESTION 1

Discuss and give FIVE reasons why most populations are polymorphic.

[25 marks]

QUESTION 2

Discuss the different genetic modes of speciation.

[25 marks]

QUESTION 3

"Biogeography has both historical and ecological components". Discuss this statement, providing examples to illustrate your essay.

[25 marks]

QUESTION 4

What are allometry and heterochrony? And what role do they play in the evolution of novel features?   [25 marks]

QUESTION 5

There are three methods that 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 6

Write explanatory notes on the following:

a)   Directional selection.
b)   Selectively neutral characters.
c)   Rates of speciation.
d)   Founder effect.
e)   Pleiotropy.

[5 marks each]
[25 marks]