UNIVERSITY OF SWAZILAND
MAIN EXAMINATION PAPER 2007

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

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

QUESTION 1

Describe **pre-mating isolating mechanisms**, using examples to illustrate your answer.

[25 marks]

QUESTION 2

a) Describe, in detail, the process of natural selection and how it operates. [16 marks]
b) How can linkage disequilibrium affect the outcome of natural selection? [9 marks]

[25 marks]

QUESTION 3

Is **systematics** of significance to the conservation of biological diversity? Discuss. [25 marks]

QUESTION 4

Contrast the phenetic and evolutionary (phylogenetic) systems of classification. What are the pros and cons of the two systems? [25 marks]

QUESTION 5

a) What are adaptations? And how do they arise? [5 marks]
b) Two methods (comparative and experimental) have been employed to test whether a feature is an adaptation or not. Discuss these two methods and provide real-life examples to illustrate your answer. [20 marks]

[25 marks]

QUESTION 6

a) Describe the following: allopatric distribution; sympatric distribution and parapatric distribution.

[6 marks]
b) What is a natural hybrid zone? Use two southern African examples to illustrate your answer.

[9 marks]
c) Can speciation be instantaneous? Discuss in detail. Provide examples where possible.

[10 marks]
[25 marks]