

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2018

TITLE OF PAPER: EVOLUTION

COURSE CODE: BIO312/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

QUESTION 1

Discuss the origins and development of evolutionary thought up to the period of modern synthesis. [25 marks]

QUESTION 2

Explain and discuss why taxa are distributed the way that they are, and why diversity and composition varies from region to region. [25 marks]

QUESTION 3

Briefly discuss each of the following:

- (a) The relationship between genotype, phenotype and the environment (7 marks)
- (b) Mutation (6 marks)
- (c) Competition (6 marks)
- (d) Adaptation (6 marks)

[25 marks]

QUESTION 4

Discuss in detail the Hardy-Weinberg theorem. [25 marks]

QUESTION 5

Using real-life examples, describe the various types of premating isolating mechanisms encountered in nature. [25 Marks]

QUESTION 6

Write explanatory notes on the following (5 marks each):

- a. genetic drift
- b. linkage
- c. recombination
- d. sympatry
- e. allopatry

[Total Marks = 25]