

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2016/17

TITLE OF PAPER: LANDSCAPE ECOLOGY

COURSE CODE: BIO610

TIME ALLOWED: THREE HOURS

INSTRUCTIONS:

1. THE EXAMINATION HAS FIVE (5) QUESTIONS. ANSWER ANY FOUR (4).
2. EACH QUESTION CARRIES 25 MARKS.
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

QUESTION 1

Explain why starting a sugarcane plantation where savannah woodlands are might not be a good idea. (25 marks)

QUESTION 2

Select a landscape with which you are familiar, of any scale or system. Present a question or hypothesis relating to landscape pattern and a related process. Describe this system in terms of hierarchy and causes and controls of pattern. (25 marks)

QUESTION 3

Discuss how the metapopulation theory and source-sink dynamics, are an improved spatial, conceptual model over island biogeography. Address both A) theory and B) application of landscape ecology to conservation. (25 marks)

QUESTION 4

Discuss the usefulness and shortcomings of island biogeographic theory for conservation planning and research in landscape ecology. (25 marks)

QUESTION 5

Discuss how measures of landscape pattern (i.e., measures of land cover or habitat class proportion of the landscape, cover class distribution, patch shape, patch size distribution, connectivity) can be useful in answering questions of process, as well as in describing pattern. (25 marks)