

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER: DECEMBER 2009

TITLE OF PAPER: ECOLOGY

COURSE CODE: B304

TIME ALLOWED: THREE HOURS

INSTRUCTIONS: 1. ANSWER ANY FOUR QUESTIONS
2. EACH QUESTION CARRIES TWENTY FIVE(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

- (a) Distinguish between lentic and the lotic systems of the fresh-water habitats. (7 marks)
 - (b) Briefly describe with examples the various life forms found in aquatic ecosystems including notes on aquatic (fresh-water) macrophytes. (18 marks)
- [TOTAL MARKS = 25]**

Question 2

- (a) What are ecological factors? (5 marks)
 - (b) With reference to tropical rain forests, savannas and deserts, discuss the effects of water (or precipitation) and fire as ecological factors of plant and animal populations. (20 marks)
- [TOTAL MARKS = 25]**

Question 3

- (a) Give a short account of the geography and climate, major flora and vertebrates of the Malolotja nature reserve. (15 marks)
 - (b) How would you determine the population size and density of rodents in this nature reserve? Comment on the limitations of the method you would use. (10 marks)
- [TOTAL MARKS = 25]**

Question 4

- (a) Name the various associations or interactions between different species of plants and animals found in nature. (5 marks)
 - (b) Give an account of your understanding of predation, parasitism and parasitoids in relation to biotic communities of natural ecosystems. (20 marks)
- [TOTAL MARKS = 25]**

Question 5

- a) Give the meaning and essential features of the biogeochemical cycle. (7 marks)
 - b) Describe in detail the circulation of carbon in the biosphere and noting the effects of generating (by human activities) high amounts of carbon dioxide in the atmosphere. (18 marks)
- [TOTAL MARKS = 25]**

Question 6

Write concise essays on any two of the following:

- a) Allogenic and autogenic successions. (12½ marks)
- b) Organic materials and fertilizers as pollutants in slow moving rivers and lentic systems. (12½ marks)
- c) The tropical rain-forests vegetation types and their associated fauna. (12½ marks)

[Total marks = 25]

[END OF QUESTION PAPER]