

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER : DECEMBER 2007

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 eutrophic and oligotrophic lakes. (6 marks)
 b) Distinguish between second and third order streams. (4 marks)
 c) Give a short account of the nekton and benthic communities of estuaries. (15 marks)

[TOTAL MARKS = 25]**QUESTION 2**

Write concise essays on the following:

- a) Thermal stratification of lakes. (12.5 marks)
 b) Stratification of the tropical rain-forests vegetation. (12.5 marks)

[TOTAL MARKS = 25]**QUESTION 3**

- a) Discuss the characteristics of populations and show what you understand by the following formula;

$$\frac{dN}{dt} = rN \left(\frac{K - N}{K} \right)$$

(18 marks)

- b) What are r-selected species or strategists?

(7 marks)

[TOTAL MARKS = 25]**QUESTION 4**

- a) Outline the various interactions or associations observed in biotic communities. (7 marks)
 b) Give a concise account of your understanding of Predation and Competition within the animal communities of natural ecosystems. (18 marks)

[TOTAL MARKS = 25]**QUESTION 5**

- a) What is meant by biogeochemical cycle. (5 marks)
 b) Describe in detail the flow of energy and the circulation of nitrogen in a natural ecosystem. (20 marks)

[TOTAL MARKS = 25]**QUESTION 6**Give concise accounts on **TWO** of the following:

- a) Greenhouse effects and Global warming. (12½ marks)
 b) Fire as an ecological factor. (12½ marks)
 c) Autogenic succession. (12½ marks)

[TOTAL MARKS = 25]