



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

SZL 411: THEORETICAL ECOLOGY

DATE: Wednesday, 30th November 2011

TIME: 4.30 p.m. – 6.30 p.m.

INSTRUCTIONS:

Answer all questions from Section A and any ONE question from Section B. Within a section all questions carry equal marks. Illustrate your answers with diagrams and give examples whenever appropriate.

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

1. Explain the following terms:
 - (i) Theoretical ecology
 - (ii) Population growth
2. Using appropriate models, explain the following terms:
 - (i) Arithmetic changes
 - (ii) Geometric changes
3. Describe briefly exponential growth rate.
4. Describe briefly the causes in variations in population growth.
5. Explain the use of negative density-dependent models in population management.
6. Explain the causes of species succession.
7. Describe the role of disturbance in community structure.
8. Using appropriate models, explain interspecific competition.

SECTION B: ANSWER ANY ONE QUESTION (30 MARKS)

9. Using appropriate models discuss population geometric (λ) and exponential (r) growth rates.
10. Construct a food chain containing less than 10 organisms and use it to explain energy flow in specific ecosystem.