



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

SZL 101: INTRODUCTION TO ECOLOGY AND BIONALYSIS

DATE: Monday 19th November, 2011

TIME: 8.00 a.m. – 10.00 a.m.

INSTRUCTIONS

Answer ALL questions in Section A and any ONE question in Section b. Within a section, all questions carry equal marks. Illustrate your answers with diagrams and give examples where appropriate.

SECTION A – Answer ALL questions (40 marks)

1. Discuss briefly the causes of climate change.
2. Explain the following terms:
 - a) Ecosystem
 - b) Niche
 - c) Population
 - c) Competition
3. Outline the carbon cycle.
4. Outline the main groups of phytoplankton.
5. Distinguish between batesian and mullerian mimicry.
6. Outline the advantages and disadvantages of living in social groups among the savanna dwellers.
7. Briefly outline the fate of sun's energy as it flows through the biosphere.
8. Outline the scales of measurements in research.

SECTION B – Answer any ONE question (30 marks)

9. Write an essay on ecological pyramids.
10. Using an example of a forest ecosystem, discuss the types of data collected and the sampling techniques.
11. a) Distinguish between measures of central tendency and measures of dispersion.

- b) An area of bog vegetation was surveyed and classified. A series of peat surface samples was taken and classified according to vegetation type. The peat samples were then analyzed for the number of nutrient elements. The samples from Cotton Grass Bog gave the following values for total phosphate, in mg 100g⁻¹ dry weight.

39.3 46.6 51.7 46.0 68.3 58.0 54.5 62.4 56.0 48.2 43.1 50.3

Compute the mean value and attach the 95 and 99% confidence limits.

