



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2020/2021 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER**  
**SPECIAL/SUPPLEMENTARY EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY**  
**AND BACHELOR OF SCIENCE IN**  
**BIORESOURCE CONSERVATION AND MANAGEMENT**

**COURSE CODE:** SZL 123

**COURSE TITLE:** FUNDAMENTALS OF ECOLOGY

**DATE:** TUESDAY 28<sup>TH</sup> SEPTEMBER, 2021      **TIME:** 11:00 – 1:00 p.m.

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**INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

**TIME: 2 Hours**

This paper consists of 3 printed pages. Please Turn Over 

KIBU observes ZERO tolerance to examination cheating

## QUESTION 1

- a) Define the term Ecosystem (2 Marks)
- b) Distinguish between population and community (2 Marks)
- c) State the living factors affecting organisms in an ecosystem (4 Marks)
- d) Explain ammonification and nitrification in nitrogen cycle (4Marks)
- e) Explain the roles of ecological pyramids and explain when each type is used
- f) Define the following (3 Marks)
- iv. Fitness
  - v. Niche overlap
  - vi. Natality (3 Marks)
- g) State **Five** ecological interaction and their ecological significance (4 Marks)
- h) What is Ecological Niche? (2 Marks)
- i) Explain direct and indirect competition (3 Marks)
- j) Distinguish between quaternary consumers and tertiary consumers giving examples (3Marks)

## QUESTION 2

- c) Differentiate between sympatric and allopatric speciation giving example (10 Marks)
- d) Explain the difference between liebig's law and law of tolerance (10 Marks)

**QUESTION 3**

Describe the factors that control population fluctuations (20 Marks)

**QUESTION 4**

A mature forest community is completely destroyed by fire. Describe the stages of succession by which this community is restored (20 marks)

**QUESTION 5**

Explain the functional aspects of rangelands and marine ecosystems (20 Marks)