

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

**SECOND YEAR EXAMINATION FOR THE DEGREES
BACHELOR OF SCIENCE (GENERAL)/BACHELOR OF
EDUCATION (SCIENCE)**

ZOOL 211: ECOLOGY

STREAM: R

TIME: 2 HRS

DAY: MONDAY [11.30AM – 13.30] DATE: 19/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS: - Answer all questions in **Section A (40 Marks)** and two questions in **Section B (30 Marks)**

QUESTION ONE

Differentiate between the following terms: - (10 marks)

- (a) Abiotic factors and biotic factors
- (b) Food web and food chain
- (c) Primary and Tertiary consumers
- (d) Natality and mortality
- (e) Reproductive potential and environmental resistance
- (f) Potential Niche and Realized Niche
- (g) Succession and Zonation
- (h) Biogeochemical Cycle and Hydrological Cycle
- (i) Ecotone and Wetland
- (j) Existence Energy and Productive Energy

QUESTION TWO

- (a) Describe atleast four approaches used in the study of Ecology. (4 Marks)
- (b) Using Lake Victoria as an example, show how introduction of alien species negatively impacts an ecosystem. (4 Marks)
- (c) Explain the important role the Sun plays in ecosystems. (5 Marks)
- (d) Show how environmental factors influence the success of an organisms in an ecosystem. (5 Marks)
- (e) Describe three plant types based on tolerance to moisture scarcity. (3 Marks)
- (f) Using specific examples explain the principal the Gaussian Exclusion Principle. (5 Marks)
- (g) Using the example of birds show how resource partitioning is achieved in an ecosystem. (4 Marks)

SECTION B (30 Marks) : ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION SIX

- (a) Using diagrams describe two population growth curves. (8 Marks)
- (b) Show how a survivorship curve can explain the survival of cohorts in a population. (7 Marks)

QUESTION SEVEN

Using specific examples in Kenya, show how man's activities can influence the hydrological cycle. (15 Marks)

QUESTION EIGHT

Discuss how succession takes place and how it is important in development of communities in ecosystems. (15 Marks)

