



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 412: APPLIED ECOLOGY

DATE: 15/3/2022

TIME : 8:30 – 10:30 AM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A

QUESTION ONE (COMPULSORY)

- a) Explain how body size influence diet selection in animals (3 marks)
- b) Describe interspecific competition occurrence in a population (3 marks)
- c) Describe Patch use by herbivores (3 marks)
- d) Differentiate between endangered taxa and vulnerable taxa (3 marks)
- e) Explain how behavioral decisions influence foraging success of animals in their ecosystem (3 marks)
- f) Differentiate dispersion and distribution of organisms in the ecosystem (3 marks)
- g) Explain how demographic malfunction causes population extinction (3 marks)
- h) Explain the circumstances in which control may be an inappropriate management action (3 marks)
- i) Differentiate between manipulative and custodial management as used in wildlife management (3 marks)
- j) Explain the advantages of protected areas for the animals (3 marks)

SECTION B

QUESTION TWO (20 MARKS)

- a) Describe mineral requirement in animals (10 marks)
- b) Explain how temperature and water loss influence distribution of animals (10 marks)

QUESTION THREE (20 MARKS)

Describe the harvesting strategies used to harvest wild animals.

QUESTION FOUR (20 MARKS)

- a) Describe the biotic and abiotic component of an ecosystem (10 marks)
- b) Describe how animals utilize resources in a risky habitat (10 marks)

QUESTION FIVE (20 MARKS)

Describe interspecific patterns of social and antipredator behavior of the African hoofed mammals.