



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SECOND SEMESTER EXAMINATION

BACHELOR OF EDUCATION SCIENCE

SZL 412: APPLIED ECOLOGY

DATE:

TIME :

INSTRUCTIONS

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

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Differentiate between ecological community and ecological niche. (2 marks)
- b) Explain the causes of animal dispersal. (3 marks)
- c) Explain how habitat change and fragmentation cause extinction of animals. (3 marks)
- d) Explain the circumstances under which boundaries within a reserve may be an inappropriate management action. (3 marks)
- e) Differentiate between manipulative and custodial management as used in wildlife management. (3 marks)
- f) Describe the biotic components of an ecosystem. (4 marks)
- g) Explain how small animals adjust to the variation of feed resources in their own environment. (4 marks)
- h) Explain risk-sensitive habitat use by the wildlife within their home range. (4 marks)
- i) Explain how temperature limits the distribution of animals. (4 marks)

SECTION B: (ANSWER ANY TWO QUESTIONS)

QUESTION TWO (20 MARKS)

Discuss sustained yield harvesting of animals in a game reserve.

QUESTION THREE (20 MARKS)

Discuss interspecific patterns of behavior in the African hoofed mammals.

QUESTION FOUR (20 MARKS)

- a) Briefly describe five major terrestrial biomes found in the tropics. (10 marks)
- b) Discuss territoriality of animals within their home range. (10 marks)

QUESTION FIVE (20 MARKS)

Discuss the opportunity cost of maintaining the Nairobi National Park.