MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE(AGRICULTURAL EDUCATION AND EXTENSION)

SCB 407: BIODIVERSITY AND CONSERVATION BIOLOGY

DATE: 30/8/2022 **TIME: 2.00-4.00 PM**

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) (30 MARKS)

a) Describe the three levels of biodiversity (3 marks)

b) Describe the value of biodiversity in ecosystem services (4 marks)

c) Outline the three main guiding principles for conservation biology (3 marks)

d) Describe the core indicators of the state of biodiversity (3 marks)

e) Briefly describe the scientific method as applied to conservation biology (4 marks)

f) Outline the threatening processes for the decline in population (3 marks)

g) Distinguish between species richness and species evenness (3 marks)

h) Outline the three main components of species extinction (3 marks)

i) Explain the term habitat fragmentation, how it differs from habitat loss and habitat degradation (4 marks)

SECTION B

QUESTION TWO (20 MARKS)

Discuss the *in situ* and *ex situ* conservation approaches giving examples in each case

QUESTION THREE (20 MARKS)

Discuss the:

a) Major drivers of biodiversity loss and decline (10 marks)

b) Responses with a primary goal of conservation of biodiversity (10 marks)

QUESTION FOUR (20 MARKS)

Discuss the implications of valuing the biodiversity resources.

QUESTION FIVE (20 MARKS)

Discuss the stages of systematic conservation of biodiversity.