



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SBT 309 : ADVANCED PLANT ECOLOGY

DATE: 15/3/2022

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 1

- i. Differentiate between applied ecology and basic ecology (3 marks)
- ii. List atleast 6 (six) Major vegetation types in the world
- iii. List the core principles of plant ecology (3 marks)
- iv. Outline the three distribution patterns of plants populations
- v. As a plant ecologist working with Kenya Wildlife Service, discuss 3 (three) major plant population Characteristics found in Kenya (3 marks)
- vi. Differentiate exponential growth and logistic growth (3 marks)
- vii. Discuss the (3) three traditional vegetation sampling methods (3 marks)
- viii. Describe briefly the ecological threats posed by charcoal burning (3 marks)
- ix. Giving examples, define ecotone boundary as used in landscape ecology (3 marks)
- x. What are the impacts of constructing a railway line through a national park (3 marks)

SECTION B

Questions 2

Discuss the biotic components that control plant ecology (10 marks)

Describe the research areas in the study of landscape ecology (10 marks)

Questions 3

- a. Describe the (5) five major types of species interactions (10 marks)
- b. Discuss the major quantitative characters of a plant community (10 marks)

Questions 4

- a. Climate change has been describe as a major threat to plant ecology. Discuss conservation strategies that can mitigate and create adaptation to climate change (10 marks)
- b. Describe how ecological balance is important for human existence (10 marks)