



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**FOURTH YEAR SUPPLEMENTARY/SPECIAL EXAMINATION FOR
BACHELOR OF SCIENCE IN BIOLOGY**

SZL 415: ECOLOGY AND SUSTAINABLE DEVELOPMENT

DATE: 7/3/2023

TIME : 2.00 – 4.00 PM

INSTRUCTIONS

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

QUESTION ONE (30 MARKS)

- a) Explain the significance of the the earth's summits (3 marks)
- b) Describe three primary goals of sustainability (3 marks)
- c) Explain three principles of ecological sustainability (3 marks)
- d) Outline the significance of the Ramsar Convention (3 marks)
- e) Describe three objectives of the Convention on Biological Diversity (3 Marks)
- f) Outline four Key elements in an Environmental Management Plan (4 marks)
- g) Describe three ways by which the public can be involved in decisions about planned development activities (3 marks)
- h) Explain how a country may demonstrate commitment to international sustainable development principles (3 marks)

- i) Explain why the governments decision to evict her citizens from the Mau forest should be supported (3 marks)
- j) Describe the following terms: (2 marks)
 - i. Agroecology
 - ii. Ecosystem Resilience

QUESTION TWO (20 MARKS)

Explain:

- a) Why some development activities would be considered non-sustainable (10 marks)
- b) How consumer behaviour may contribute to ecological un-sustainability (10 marks)

QUESTION THREE (20 MARKS)

Discuss Biodiversity Conservation Mechanisms (20 Marks)

QUESTION FOUR (20 MARKS)

The ever increasing human population is a threat to its own sustainability. Discuss (20 Marks)

QUESTION FIVE (20 MARKS)

- a) Explain possible ecological effects of the construction of Thwake dam (10 marks)
- b) Describe mitigation measures that can be used to protect forest ecosystems (10 marks)