



# MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 415: ECOLOGY FOR SUSTAINABLE DEVELOPMENT

DATE: 20/1/2021

TIME: 8.30-10.30 AM

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## 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) List the categories of the scale of understanding sustainability (3 marks)
- b) Discuss briefly when development activities are considered as non-sustainable (3 marks)
- c) Outline any three importances of ecosystem goods and services in economic decisions (3 marks)
- d) Describe the key environmental Strategies that are a prerequisite for ecological sustainability (3 marks)
- e) Outline the Ecological Models of ecological sound Agriculture (3 marks)
- f) Outline the factors considered when Selecting livestock breeds/ strains for sustainable organic farming: (3 marks)
- g) Why should one not advocate for an environmental Impact assessment (EIA) before setting up a development activity. (3 marks)
- h) Describe the Development impact assessment In the context of the Free Zone Initiative (3 marks)
- i) Name the main causes of habitat alteration and loss. (3 marks)
- j) Describe how climate change causes biodiversity loss and habitat alteration (3 marks)

## **SECTION B**

### **QUESTION TWO (20 MARKS)**

Describe the parameters for low-input technology which promote agro-ecology

### **QUESTION THREE (20 MARKS)**

Describe the Sustainable development goals (SDGs) in relation to ecology

### **QUESTION FOUR (20 MARKS)**

As a coastal zone land manager, describe the guiding principles for ensuring an Integrated Coastal zone management (ICZM)

### **QUESTION FIVE (20 MARKS)**

Giving examples, describe the main groups which ecosystem services can be categorized