



# MACHAKOS UNIVERSITY

University Examinations For 2023/2024 Academic Year  
SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR  
BACHELOR OF AGRICULTURAL EDUCATION AND EXTENSION

BACHELOR OF ENVIRONMENTAL SCIENCE

ENS 136: PRINCIPLES OF ENVIRONMENTAL SCIENCE

**DATE:** \_\_\_\_\_ **TIME:** \_\_\_\_\_

**INSTRUCTIONS:** Answer question ONE and any other TWO

## QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the following terms:
- i. Environment (2 marks)
  - ii. Ozone depletion (2 marks)
  - iii. Ecosystem (2 marks)
  - iv. Bioremediation (2 marks)
  - v. Biodiversity (2 mark)
- b) Citing relevant examples, describe the four segments of the environment. (8 marks)
- c) Describe the nitrogen cycle. (12 marks)

## QUESTION TWO (20 MARKS)

As an environmental officer working at the Ministry of Environment, Climate Change and Forestry, analyze the various natural hazards which the government should consider in hazard mitigation planning.

## QUESTION THREE (20 MARKS)

Discuss the potential effects of industrial agriculture in Kenya.

## QUESTION FOUR (20 MARKS)

Discuss five effects of urban sprawl in Kenya.

**QUESTION FIVE (20 MARKS)**

As a natural resource manager in a Kenyan national park, discuss five types of wildlife species interactions which needs to be considered when coming up with wildlife management plan.