



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR IN ENVIRONMENTAL SCIENCE

ECD 109: HUMAN ECOLOGY AND ADAPTATION

DATE: 22/7/2019

TIME: 2.00-4.00 PM

---

## INSTRUCTIONS:

Answer question ONE and any other TWO questions

### QUESTION ONE

- a) Describe human ecology (2 marks)
- b) Define the following terms
  - i. Environment (1 mark)
  - ii. Ecosystem (1 mark)
  - iii. Habitat (1 mark)
  - iv. Organism (1 mark)
  - v. Species (1 mark)
- c) Describe the segments of ecosystems where all biotic and abiotic features are found (5 marks)
- d) Using examples, describe the Gaia hypothesis (6 marks)
- e)
  - i. What is human evolution? (2 marks)
  - ii. Describe the fundamental ideas that entail Darwin's theory of evolution (6 marks)
  - iii. What are the four components of Darwin's theory of natural selection? (4 marks)

## **QUESTION TWO**

Discuss

- a) nitrogen cycle (10 marks)
- b) carbon cycle (10 marks)

## **QUESTION THREE**

- a) Explain the FIVE ways water causes erosion on the earth's surface? (10 marks)
- b) Discuss any FIVE types of water erosion. (10 marks)

## **QUESTION FOUR**

Describe the two types of ecosystem feedbacks and how they impact ecosystems in Kenya  
(20 marks)

## **QUESTION FIVE**

Discuss the FIVE basic types of societies that have existed over the course of human history.  
(20 marks)