



# **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)