



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (COMMUNITY DEVELOPMENT)

ECD 109: HUMAN ECOLOGY AND ADAPTATION

DATE: 20/1/2021

TIME: 2.00-4.00 PM

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## **INSTRUCTIONS:**

Answer question ONE and any other TWO questions

### **QUESTION ONE (30 MARKS)**

- a) Define the following terms
- i. Human ecology (2 marks)
  - ii. Environment (2 marks)
  - iii. Ecosystem (2 marks)
  - iv. Human evolution (2 marks)
- b) Describe the segments of ecosystems (12 marks)
- c) Using examples, describe the Gaia hypothesis (10 marks)

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

Describe the two types of ecosystem feedbacks and how they impact habitats in Kenya

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

Using diagrams, discuss the following biogeochemical cycles

- a) Carbon cycle (10 marks)
- b) Nitrogen cycle (10 marks)

**QUESTION FOUR (20 MARKS)**

Discuss the FIVE basic types of societies that have existed over the course of human history.

**QUESTION FIVE (20 MARKS)**

- a) Discuss the four components of natural selection (10 marks)
- b) Discuss the conditions that must be met in order for natural selection to occur in a population (10 marks)