



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCE MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FOURTH YEAR SECOND SEMESTER SEMESTER EXAMINATION FOR  
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

AGR 483: CLIMATE CHANGE AND ADAPTATION IN AGRICULTURE

DATE: 6/5/2019

TIME: 8:30 – 10:30 AM

---

INSTRUCTIONS: Answer question ONE and any other TWO questions

## QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the following terms
- i) Weather (2 marks)
  - ii) Climate (2 marks)
  - iii) Climate change (2 marks)
  - iv) Strategic food reserves (2 marks)
  - v) Disaster (2 marks)
- b) Describe the difference between adaptation and mitigation to climate change impacts in agriculture. (4 marks)
- c) Discuss “the greenhouse effect” and its importance to water cycle. (8 marks)
- d) Describe the purpose of explicit and implicit estimation of vulnerability (8 marks)

## QUESTION TWO (20 MARKS)

Discuss various adaptation strategies that are employed to deal with climate-related disasters in Kenya.

**QUESTION THREE (20 MARKS)**

- a) Discuss the actions Parties to REDD+ are encouraged to take to ensure the success of the initiative. (12 marks)
- b) Explain the FOUR key targets of the Paris Agreement. (8 marks)

**QUESTION FOUR (20 MARKS)**

Using Kenya as an example, discuss potential climate change agroecosystem impacts and recommend management responses.

**QUESTION FIVE (20 MARKS)**

Discuss the constraints and opportunities arising from adaptation and mitigation of impacts of climate change.