



# **MACHAKOS UNIVERSITY**

University Examinations for 2022/2023 Academic Year

**SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES**

**DEPARTMENT OF ENVIRONMENTAL SCIENCES**

**FOURTH YEAR SECOND SEMESTER EXAMINATION FOR**

**BACHELOR OF SCIENCE (AGRICULTURAL SCIENCES)**

**AGR 483: CLIMATE CHANGE AND ADAPTATION IN AGRICULTURE**

**DATE:**

**TIME:**

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**INSTRUCTION:** Answer Question One (Compulsory) and Any Other Two Questions.

**QUESTION ONE (COMPULSORY) (30 MARKS)**

- a) Differentiate between the following concepts:
- (i) Climate change mitigation and climate change adaptation (4 marks)
  - (ii) Positive and negative feedback mechanisms for a warming planet (4 marks)
- b) Explain the impacts of reducing beef consumption on climate change (4 marks)
- c) Using an integrated approach, describe the anthropogenic climate change (8 marks)
- d) Explain five variables that are used to generate atmospheric circulation models (10 marks)

**QUESTION TWO (20 MARKS)**

As a climate change expert to advice on ongoing adaptive responses to climate change in Livestock and pastoralism and agriculture. Discuss how you would carry out this task successfully

**QUESTION THREE (20 MARKS)**

Evaluate five relevant policy and legal frameworks governing climate change in Kenya

**QUESTION FOUR (20 MARKS)**

Discuss the potential impacts of climate change on crop and soil sub-sectors of agriculture

**QUESTION FIVE**

Actions in the energy sector on the scale required to mitigate the effects of climate change through reduction in the emissions of greenhouse gases will require significant policy initiatives by governments in cooperation with industry. Explain