



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FIRST YEARSEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

ENS 136: PRINCIPLES OF ENVIRONMENTAL SCIENCE

DATE:

TIME:

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Explain the following terms:
- i. Environmental science (2 marks)
 - ii. Biodiversity (2 marks)
 - iii. Ecosystem (2 marks)
 - iv. Climate change (2 marks)
 - v. Sustainable development (2 marks)
- b) Citing relevant examples, discuss the process of ecosystem succession (10 marks)
- c) Explain the different forms of interactions among organisms in an ecosystem (10 marks)

QUESTION TWO (20 MARKS)

- a) Discuss the environmental services provided by biodiversity and their significance in the achievement of the sustainable development goals (10 marks)
- b) Using appropriate examples, relate poverty and human population growth to environmental carrying capacity and global sustainability (10 marks)

QUESTION THREE (20 MARKS)

Citing relevant examples discuss the general ecosystem structure and functions in the flow of energy and materials

QUESTION FOUR (20 MARKS)

Using appropriate illustrations, discuss the nitrogen cycle and describe the impacts of human activities on different stages of the cycle

QUESTION FIVE (20 MARKS)

Write short notes on the causes, processes and impacts of following:

- a) Ozone depletion (10 marks)
- b) Global warming (10 marks)