



# MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF AGRICULTURE, ENVIRONMENT AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENTAL SCIENCES

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL SCIENCE

ENS 233: SOIL HABITATS

DATE:

TIME:

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**INSTRUCTIONS:** Answer question ONE and any other TWO questions

## QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Citing relevant examples, explain the following concepts
- |                             |           |
|-----------------------------|-----------|
| i. Soil survey              | (2 marks) |
| ii. Pedology                | (2 marks) |
| iii. Chemical weathering    | (2 marks) |
| iv. Nitrogen mineralization | (2 marks) |
| v. Soil science             | (2 marks) |
- b) Explain the impacts of increasing rates of Nitrogen deposition on soil habits (10 marks)
- c) Explain the key factors affecting the soil formation process (10 marks)

## QUESTION TWO (20 MARKS)

- a) Using suitable examples, discuss the importance of soil biodiversity (10 marks)
- b) Explain the management considerations you would recommend to improve soil biodiversity in Arid and Semi-Arid areas (10 marks)

## QUESTION THREE (20 MARKS)

Discuss the physical, chemical and biological properties which influence the sustainability of soil habitat

## QUESTION FOUR (20 MARKS)

Using suitable examples, discuss the linkages between plant and soil biological communities

## QUESTION FIVE (20 MARKS)

Using suitable examples, discuss the potential impacts of climate change on soil properties