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**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2022/2023 ACADEMIC YEAR

THIRDYEARSECOND SEMESTER EXAMINATIONS

MAIN EXAMINATION

**FOR THE DEGREE IN AGRICULTURE, AGRIBUSINESS AND EXTENSION
MANAGEMENT**

ODEL

COURSE CODE: ASS 305

COURSE TITLE: SOIL FERTILITY AND PLANT NUTRITION.

DATE: 12TH April 2023

TIME: 12-2 PM

INSTRUCTION S:

Answer ALL questions in section A (Compulsory) and any TWO in section B.

SECTION A: Answer ALL questions)

QUESTION ONE (30 Marks)

- a) Explain the meaning of the following terms (5 Marks):
- (i) Soil horizon
 - (ii) Pedogenesis
 - (iii) Edaphology
 - (iv) Weathering
 - (v) Soil profile
- b) Explain the importance of cation exchange (5 marks)
- c) Explain the reasons why we study soil (5 marks)
- d) Briefly discuss the natural and man-made causes of soil alkalinity (5 marks)
- e) Briefly describe the importance of five beneficial nutrients to plants (5 marks)
- f) Discuss the level of microbial activity in relation to nutrient availability in soil (5 marks)

SECTION B: (Answer any TWO questions)

QUESTION TWO (20 Marks)

Identify the soil physical properties that determine the way in which soils can be used most effectively.

QUESTION THREE (20 Marks)

Discuss the causes and management of soil acidity.

QUESTION FOUR (20 Marks)

Discuss the physical conservation measures of soil erosion.

QUESTION FIVE (20 Marks)

Discuss the chemical properties of a soil that affects its mineral solubility and nutrient availability to crop plants.