



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
FOURTH YEAR SECOND SEMESTER**

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT
BACHELOR OF WILDLIFE MANAGEMENT
BACHELOR OF SCIENCE IN FORESTRY
BACHELOR OF AGRICULTURE ECONOMICS**

**COURSE CODE: FEM 2103
COURSE TITLE: INTRODUCTION TO SOIL
SCIENCE**

DATE: 4TH DECEMBER 2018

TIME: 1100 - 1300 HRS

INSTRUCTIONS TO CANDIDATES

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A (30 MARKS) AND ANY FOUR IN SECTION B (40 MARKS)

This paper consists of 2 printed pages. Please turn over.

SECTION A (30 MARKS)

1. Distinguish between the following terms:
 - a. Eluviation versus Illuviation (2 mk)
 - b. Minerals versus Organic Matter (2 mk)
 - c. Lateral Gains versus leaching (2 mk)
 - d. Salination versus Alkiliation (2 mk)
2. Using relevant examples, explain **any two** the following characteristics and process associated with soils:
 - a. Drainage and permeability (2 mk)
 - b. Soil Texture and Soil Structure (2 mk)
 - c. Particle Density and Bulk Density (2 mk)
3. Briefly describe Cation Exchange Capacity (CEC) (2 mk)
4. Using illustrations, briefly describe the functionality of the standard soil texture triangle. (2 mk)
5. Using relevant examples, explain **any three** of the following characteristics and process associated with soils:
 - a. Drainage and permeability (2 mk)
 - b. Soil Texture and Soil Structure (2 mk)
 - c. Particle Density and Bulk Density (2 mk)
 - d. Porosity and Specific Surface (2 mk)
6. Briefly describe any two factors that influence the soil structure (4 mk)

SECTION B (40 MARKS)

7. For you to succeed as a professional in your chosen field, being knowledgeable on matters relating to soil science is essential. **Discuss.** (10 mk)
8. Using illustrations as appropriate, discuss in sufficient details the five (5) factors that influence soil formation. (10 mk)
9. In sufficient details discuss the three weathering process. (10 mks)
10. Discuss in sufficient details the role of soil organism (10 mk)
11. Assume that your parents would like to buy a piece of land for farming. There are four parcels available each with a different soil type namely; juvenile, virile, senile and final. With reasons, help them choose the best parcel by pointing out on the advantages and disadvantages of each soil type thus eliminating the poor parcels whilst being left with the best. (10 mk)

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