

UGANDA MARTYRS



UNIVERSITY

FACULTY OF AGRICULTURE
NGETTA CAMPUS
FACULTY OF AGRICULTURE

CERTIFICATE IN AGRICULTURAL PRODUCTION

COURSE CODE; CAP1101 INTRODUCTION TO SOIL SCIENCE

FINAL ASSESSMENT

ACADEMIC YEAR 2022/2023 SEMESTER ONE

CAP I

DATE.../.... /2023

TIME ALLOWED:3 HOURS (.....)

INSTRUCTIONS:

- *Attempt **four (4)** questions*
 - *Start every question on a **new** page*
 - *Do not write anything on the question paper*
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1a) Define soil profile (**1marks**)

b) A soil profile has got five master horizons that make up the soil arrangement. With the help of a well labelled diagram, state the five horizons and describe the distinct characteristics of each.

(**10 marks**)

c) Discuss the main components of soil and state their importance in crop production (**10marks**)

d) Outline any four characteristics that defines a productive soil suitable for agricultural production (**4 marks**)

2a) what do you understand by the term soil structure (**1marks**)

b) Discuss the various factors leading to soil structure destruction (**14marks**)

c) As soil structure can be destroyed in in (b) above, you are therefore, required to explain the ways of improving it (**4 marks**)

d) Briefly explain how a soil structure can be determined (**6marks**)

3a) Write short notes on the following terms as used in soil science (**10 marks**)

- i) Soil texture (**2marks**)
- ii) Soil PH (**2marks**)
- iii) Soil fertility (**2marks**)
- iv) Permeability (**2marks**)
- v) Soil porosity (**2marks**)

- b) Soil has got the key forming factors. Explain the five factors affecting soil formation and development (**15 marks**)
- 4a) Discuss the characteristics of organic matter that make it a critical component of soil for sustainable agricultural productivity (**15marks**)
- b) Elaborate at least five factors that affect living organisms abundance in the soil (**10 marks**)
- 5a) Differentiate between pedology and edaphology as used in soil science (**3marks**)
- b) Explain at least **SIX** branches of soil science you know (**12 marks**)
- c) List at least **TEN** main functions of soil to plants and animals (**10 marks**)
- 6a) Define weathering as applied in soil forming process (**1marks**)
- b) Explain three different types of weathering you know (**6 marks**)
- c) Enumerate the three stages of weathering according to their order. (**3marks**)
- d) Discuss the **FIVE** factors responsible for physical weathering of the soil. (**15 marks**)
- 7a) What are rocks (**2marks**)
- b) State **THREE** types of rocks and each giving three examples (**12 marks**)
- c) Outline the **THREE** main characteristics of sedimentary rocks that makes them different from other types of rocks (**3 marks**)
- d) Define minerals and give at least **SIX** examples of minerals you know (**8marks**)
- 8a) Define soil degradation? (**2marks**)
- b) Soil degradation has been a major threat to agricultural production globally. State six various causes of the above (**6marks**)
- c) what are the five clear indicators of a degraded land (**5 marks**)
- c) Discuss any **FOUR** soil and water conservation management practices in Ugandan small holder farming systems (**12 marks**)

---GOOD LUCK---