



UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMMES: BACHELOR OF SCIENCE YEAR II IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING, AGRICULTURAL EDUCATION, AGRONOMY, ANIMAL SCIENCE, ANIMAL SCIENCE DAIRY OPTION AND HORTICULTURE

COURSE CODE: CP 201

TITLE OF PAPER: INTRODUCTORY SOIL SCIENCE

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR

QUESTION 1

(a) Define or give short descriptions of the following terms: (Each question carries 2 marks)

- (i) Soil horizon
- (ii) Weathering
- (iii) Illuviation
- (iv) Isomorphous substitution
- (v) Soil structure [10]

(b) Discuss the effect of the soil reaction or pH on plant growth. [12]

(c) What strategies can be recommended to improve crop productivity in acid soils?

[3]
[25]

QUESTION 2

Discuss the physical and biogeochemical weathering processes of rocks and minerals to form soil. [25]

QUESTION 3

(a) What is a factor of soil formation [5]

(b) Discuss the factors of soil formation and indicate how each contributes to soil formation. [20]
[25]

QUESTION 4

(a) Explain the importance of soil water in crop production. [12]

(b) Discuss the management of soil water for improved crop yields. [13]
[25]

QUESTION 5

(a) Define the term "Organic matter" [5]

(b) Discuss the effects of organic matter which are important when soils are used for crop production. [20]
[25]