

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN ANIMAL HEALTH AND PRODUCTION

SOIL 0100: INTRODUCTION TO SOIL SCIENCE

STREAMS: DIP ANHE Y1S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 18/12/2024

2.30 P.M – 4.30 P.M

INSTRUCTIONS:

- Answer all questions in section A (40 marks) any two in section B (30 marks)
- Do not write anything on the question paper

SECTION A: ANSWER ALL QUESTIONS [40 MARKS]

QUESTION ONE

a) Define the following branches of soil science;

- Soil-Air Science [1 mark]
- Soil-Material Science [1 mark]
- Soil-Ecosystem Science [1 mark]

b) Explain any five (5) advantages of land drainage [5 marks]

QUESTION TWO

a) Illustrate the components of a well-managed soil [4 marks]

b) As a soil scientist advise farmers on any six (6) reasons for soil sampling before planting and after harvesting [6 marks]

QUESTION THREE

a) Briefly describe the role of soil in regulating water flow and supporting biodiversity [2 marks]

b) Based on the understanding of soil air and water balance, propose a solution to optimize both in areas with poor drainage [4 marks]

c) What are the three types of rocks? Briefly describe each [6 marks]

QUESTION FOUR

a) How does the type of parent rock affect the type of soil formed? [2 marks]

b) In a mountainous region, how would slope angle and aspect influence soil characteristics? [3 marks]

c) Briefly describe how Frost wedging and Exfoliation processes leads to Physical weathering of rocks [5 marks]

SECTION B: ANSWER ANY TWO QUESTIONS (30 MARKS)

QUESTION FIVE

a) With your knowledge in soil formation discuss how living organisms influence soil formation of a given area [9 marks]

b) Discuss the characteristics and management of Nitisols in agricultural production, particularly in the highland regions of Kenya [6 marks]

QUESTION SIX

a) Describe and illustrate the soil water system [8 marks]

b)A researcher intends to carry out a soil at Turkana County as a soil scientist advice the researcher on the typical information required for successful survey process

[7 marks]

QUESTION SEVEN

a) Describe stages involved in soil development [7 marks]

(b)Describe the four key processes involved in soil formation [8 marks]
