



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS
FIRST YEAR EXAMINATION FOR THE AWARD OF THE
CERTIFICATE IN ANIMAL HEALTH
FIRST SEMESTER 2022/2023
(SEPTEMBER - DECEMBER, 2022)

SOIL 00100: SOIL SCIENCE

STREAM: Y1 S1

TIME: 2 HOURS

DAY: THURSDAY, 9:00 A.M – 11:00 A.M

DATE: 08/12/2022

INSTRUCTIONS:

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Questions in section A (Compulsory) and any other TWO Questions in section B.***

SECTION A (40 MARKS)

QUESTION ONE

- What are rock fragments (3 marks)
- State three groups of rock fragments (3 marks)
- Explain the term sporocity (4 marks)

QUESTION TWO

- What do you understand by the term isomorphous substitution (4 marks)
- In soil chemistry, soil is held together because of two unlike charges (i.e. between negatively charged and positively charged ions). Name two of these unlike charges (3 marks)
- State at least three cations present in soil (3 marks)

Question three

Briefly discuss soil composition and in each case state their percentages (10marks)

QUESTION FOUR

- Define soil texture (2 marks)
- State 4 importance of soil texture (8marks)

SECTION B (30MARKS)

QUESTION FIVE

- a) State three methods used in determining soil texture (3 marks)
- b) Briefly discuss /write short notes on the following (12 marks)
 - i) Gravitational water
 - ii) Plant available water
 - iii) Permanent wilting point
 - iv) Soil field capacity

QUESTION SIX

- a) Define the term soil aggregates (3 marks)
- b) Discuss three ways by which soil aggregates are held together. (12 marks)

QUESTION SEVEN

- a) Define the term “ weathering” as used in soil science (3 marks)
- b) State two processes leading to soil formation (2 marks)
- c) Define the term vertisols soil (4 marks)
- d) State six characteristics of vertisols (6 marks)

QUESTION EIGHT

- a) Discuss eight plant capability classes as per the USDA classification (12 marks)
- b) State two types of soil classification (2 marks)
- c) Define the term “ Translocation” as used in soil science (1 mark)