

**KISII UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**1<sup>ST</sup> YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE A IN ANIMAL  
HEALTH/ANIMAL SCIENCE**

**COURSE CODE: SOIL 00100: SOIL SCIENCE**

**STREAM: Y1S1:**

**DATE**

**INSTRUCTIONS**

**Do not write anything on this question paper**

**Answer ALL questions in Section A and any other Two questions in Section B**

**SECTION A (40MKS)**

**Question one**

- a) What are rock fragments 3mks
- b) State **three** groups of rock fragments 3mks
- c) Explain the term sporocity 4mks

**Question two**

- a) What do you understand by the term isomorphous substitution 4mks
- b) 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 3mks
- c) State at least **three** cations present in soil 3mks

**Question three**

Briefly discuss soil composition and in each case state their percentages 10mks

**Question four**

- a) Define soil texture 2mks
- b) State 4 importance of soil texture 8mks

**SECTION B 30MKS**

**QUESTION FIVE**

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

**QUESTION SIX**

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

**QUESTION SEVEN**

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

**QUESTION EIGHT**

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

***Drafted by Jecton Otieno Aloo***