



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2017/2018 ACADEMIC YEAR**

**SECOND YEAR 2ND SEMESTER**  
**MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE AGRICULTURE AND  
BIOTECHNOLOGY**

**COURSE CODE: SAB 213**  
**COURSE TITLE: SOIL CHEMISTRY**

**DATE: 1<sup>ST</sup> AUGUST 2018**

**TIME: 2 PM – 4 PM**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

**QUESTION ONE = 30 MARKS (Compulsory)**

- a) Using equations, differentiate between Carbonation and Solution reactions of chemical weathering. (5 Marks)
- b) Using equations, describe the role of Iron in enhancing soil acidity. (4 Marks)
- c) Describe the conditions under which saline soils form. (6 Marks)
- d) Differentiate between Saline, Sodic and Saline-Sodic soils. (6 Marks)
- e) Describe the structures and properties of Chlorite and Montmorillonite minerals. (9 Marks)

**QUESTION TWO = 20 MARKS**

- a) Describe FIVE ways of determining Lime Requirement. (5 Marks)
- b) State and explain FOUR properties of soil colloids. (8 Marks)
- c) Briefly explain how Soil Organic Matter affect the physical properties of soil. (7 Marks)

**QUESTION THREE = 20 MARKS**

Discuss the Nutrient supply processes in the soil. (20 Marks)

**QUESTION FOUR = 20 MARKS**

Describe the classification of Tetrahedral structures in soil chemistry. (20 Marks)