



*(Knowledge for Development)*

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

**THIRD YEAR 2ND SEMESTER**  
**SPECIAL/SUPPLEMENTARY EXAMINATIONS**

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

**COURSE CODE: SAB 312**  
**COURSE TITLE: SOIL BIOLOGY AND BIOREMEDIATION**


**DATE: 12<sup>TH</sup> OCTOBER 2018**                      **TIME: 11:30 – 1:30 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) Define Soil Biology (2 Marks)
- b) Describe the role of Antonie van Leeuwenhoek in the field of Soil Biology (4 Marks)
- c) Differentiate between Chloroform Fumigation Incubation and Chloroform Fumigation Extraction (12 Marks)
- d) Describe the fate of any SIX organic contaminants (12 Marks)

**QUESTION TWO = 20 MARKS**

Describe the Biological Nitrogen Fixation (BNF) (20 Marks)

**QUESTION THREE = 20 MARKS**

Discuss the signature molecules as a measure of microbial biomass and microbial community structure (20 Marks)

**QUESTION FOUR = 20 MARKS**

Describe any FOUR effects of physical stresses (Modulators) on microorganisms and the chemical adaptation they induce (20 Marks)