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*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2019/2020 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:**

25/01/2021.

**TIME:**

8-10 AM.

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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 according to Africa Soil Science Society (2 Marks)
- b) Describe the role of Martinus Beijerinck in the field of Soil Biology (4 Marks)
- c) State and briefly explain essential factors for microbial bioremediation (12 Marks)
- d) Describe the classification of bacteria based on their Nutrition. (12 Marks)

**QUESTION TWO = 20 MARKS**

Describe the Biological Nitrogen Fixation (BNF) process in the soil (20 Marks)

**QUESTION THREE = 20 MARKS**

Explain the Carbon and Phosphorus biogeochemical cycles. (20 Marks)

**QUESTION FOUR = 20 MARKS**

Describe the classification of various soil organisms. (20 Marks)

**QUESTION FIVE = 20 MARKS**

Highlight various methods of Managed Bioremediation. (20 Marks)