

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR
OF SCIENCE IN AGRICULTURE**

SOIL 212: SOIL BIOLOGY

STREAMS: BSC AGRIC Y2S2

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 08/04/2020

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Answer ALL questions in section A and any other TWO questions in section B.
- Do not mix the numbers when answering questions.

SECTION A (TOTAL 30 MARKS)

1. What is the importance of the carbon cycle? (5 marks)
2. Explain the major processes that form the basis of ecosystem functioning. (6 marks)
3. (a) Describe the various types of nitrogen fixation. (6 marks)
(b) Explain how nitrogen in the atmosphere becomes available to plants. (3 marks)
4. (a) Describe the functional groups of organisms found in soil. (6 marks)
(b) Explain the factors influencing soil biodiversity. (4 marks)

SECTION B (TOTAL 40 MARKS)

5. (a) Describe the contributions of soil biodiversity to the human society. (15 marks)
(b) Elaborate on the factors leading to loss of soil fauna diversity. (5 marks)
6. (a) Discuss the Agricultural Management Practices that can improve soil health. (10 marks)
(b) Discuss the effects of roots on soil biodiversity and function. (10 marks)

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7. (a) Discuss why mycorrhizal plants have nutritional advantages over non-mycorrhizal plants. (12 marks)
- (b) Explain how mycorrhiza affects plant water relations. (8 marks)
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