



SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, RANGE MANAGEMENT AND HORTICULTURE

ASS 201: SOIL MICROBIOLOGY AND BIOCHEMISTRY

DATE: 08TH DECEMBER, 2017

TIME: 8.00 -10.00 AM

INSTRUCTIONS:

- Answer **ALL** Questions in **Section A** and **ANY TWO** (2) questions in **Section B**.
 - Start each question on a fresh page of your booklet.
 - Write the number of the question at the top of the page.
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SECTION A: Answer ALL Questions (30 marks)

Question 1

Explain briefly the role of the following microorganisms in nutrient mobilization in soil ecologies (6 marks)

- a) Bacteria
- b) Fungi

Question 2

Explain the soil factors that lead to the following soil reactions (6 marks)

- a) Volatilization
- b) Fixation

Question 3

Briefly explain the following microbial terms (6 marks)

- a) Climax communities
- b) Homeostasis

Question 4

Distinguish between allosteric enzyme inhibition and competitive enzyme inhibition (6 marks)

Question 5

Describe the following microbial interactions

(6 marks)

- a) Symbiosis
- b) Parasitism

Section B- Answer Two (2) Questions Only (40 marks)

Question 6

Explain how the following environmental factors affect the growth of microorganisms

(20 marks)

- a) Temperature
- b) pH
- c) Moisture
- d) Osmotic pressure

Question 7

Describe the following soil components and microbial processes

(20marks)

- a) General types of organic matter
- b) Detrivore and microbial decomposition of humus in soils

Question 8

Discuss the nutrition of microorganisms

(20 marks)