



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016 Academic Year

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRIBUSINESS MANAGEMENT AND TRADE

**FIRST SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN
AGRIBUSINESS MANAGEMENT**

KCU 202: PRINCIPLES OF SOIL SCIENCE

DATE: 3/8/2016

TIME: 2.00-4.00 PM

INSTRUCTIONS:

Answer ALL questions in section A and ANY TWO questions in section B

QUESTION ONE

- a) Explain the following terms
 - i. Illuviation (2 marks)
 - ii. Soil microbiology (2 marks)
 - iii. Soil conservation (2 marks)
 - iv. Soil chemistry (2 marks)
 - v. Calcification (2 marks)
- b) Explain the four soil components (8 marks)
- c) Differentiate between an essential element and beneficial element (2 marks)
- d) Explain four different types of soil structure (8 marks)
- e) Explain two ways of classification of bacteria in soil (2 marks)

QUESTION TWO

- a) Explain five factors influencing quantity of soil organic matter (10 marks)
- b) Explain five factors affecting mineralization and immobilization (10 marks)

QUESTION THREE

- a) Explain five threats to soil organisms (10 marks)
- b) Explain five soil forming factors (10 marks)

QUESTION FOUR

- a) Explain any five soil physical properties (10 marks)
- b) Explain five factors affecting aggregate stability in soils (10 marks)

QUESTION FIVE

- a) Explain the functions of the following plant elements
 - i. Nitrogen (5 marks)
 - ii. Phosphorus (5 marks)
- b) Explain the deficiency symptoms of the following plant elements as observed in plants
 - i. Copper (5 marks)
 - ii. Magnesium (5 marks)