

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR
OF SCIENCE
SOIL 100: INTRODUCTION TO SOIL SCIENCE**

STREAMS: BSC AGED, ENSC, HORT

TIME: 2 HOURS

DAY/DATE: MONDAY 4/12/2017

2.30 P.M – 4.30 P.M

INSTRUCTIONS:

- **Answer all question in section A and any two question in section B**

SECTION A

1. (a) Differentiate between the two types of soil densities. [4marks]
(b) Explain the various consequences of soil erosion in agro-ecological systems. [4marks]
2. (a) With aid of a diagram illustrate the composition of soil in poorly managed cropped field. [4marks]
(b) Distinguish between spodosols and vertisols. [4marks]
3. (a) Describe the basic steps you would follow when opening a soil pit profile for soil description during survey. [3marks]
(b) Using a relevant equation, explain reduction as a chemical weathering process in soils. [3marks]
4. (a) Discuss the various mesofauna found in a typical soil. [6marks]
(b) Distinguish between gravitational and hygroscopic soil water. [2marks]

SECTION B

5. (a) Explain how soil organisms near the rhizosphere influence plant roots. [8marks]
- (b) Describe reconnaissance and detailed types of soil survey methods. [6marks]
- (c) Explain the main types of sedimentary rocks. [6marks]
6. (a) Discuss the bearing of cation exchange capacity on soil fertility. [8marks]
- (b) Describe the rock cycle. [6marks]
- (c) Explain contour farming as an effective soil conservation measure. [6marks]
7. (a) Explain the significance of C:N ratio in soils for agricultural purposes. [7marks]
- (b) Explain the functions of water in relation to plant growth. [7marks]
- (c) Describe ribbon and sticky soil textural field tests on a given farm. [6marks]
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