

CHUKA



UNIVERSITY

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**EXAMINATION FOR THE AWARD OF CERTIFICATE IN ANIMAL HEALTH AND
PRODUCTION
SOIL 00100: INTRODUCTION TO SOIL SCIENCE**

STREAMS: CERT AHNE Y1S1

TIME: 2 HOURS

DAY/DATE: MONDAY 4/12/2017

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

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

SECTION A

1. (a) Explain the significance of weathering to plant and animals. [6marks]
(b) Explain the importance of soils to farmers. [4marks]
2. (a) Complete the following equation of chemical weathering of soils. [6marks]
$$\text{FeO} + \text{O}_2 \rightarrow$$
$$\text{Fe}_3\text{O}_4 + \text{O}_2 \rightarrow$$

(b) Explain the inorganic (mineral) constituents of soils. [5marks]
3. (a) Explain the agricultural significance of soil structure. [5marks]
(b) Explain potassium chloride (muriate of potash) as a commercial potassium fertilizers source. [4marks]
4. (a) Describe horizon C in a soil profile. [4marks]
(b) Explain any three (3) benefits of manure fertilizers in agricultural system. [6marks]

SECTION B

5. (a) List the soil textural classes as defined by the USDA textural triangle. [6marks]
(b) Explain the principle of care as applied in organic agriculture. [5marks]
(c) Explain the soil bulk density. [4marks]
6. (a) State the plant available forms of calcium, sulfur, boron and chlorine. [5marks]
(b) Explain the field capacity of a soil in a given paddock. [4marks]
(c) Explain the biological weathering of rocks into soils. [6marks]
7. (a) Explain soil reaction. [5marks]
(b) Explain **monoammonium phosphate (MAP)** as a commercial nitrogen fertilizers source. [4 marks]
(c) Differentiate between disturbed and undisturbed soil samples. [6marks]
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