

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION, BACHELOR OF
SCIENCE HORTICULTURE, BACHELOR OF SCIENCE IN ENVIRONMENTAL
SCIENCE**

SOIL 100: INTRODUCTION TO SOIL SCIENCE

STREAMS: BSC (AGED, HORT, ENSC) YISI

TIME: 2 HOURS

DAY/DATE: THURSDAY 17/12/2020

11.30 AM – 1.30 PM

INSTRUCTIONS:

ANSWER ALL QUESTIONS IN SECTION A (30 MARKS) ANY TWO IN SECTION B (40 MARKS)

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

QUESTION ONE

- (a) Briefly explain soil variations. [6 marks]
- (b) Illustrate the blocky soil structure. [4 marks]

QUESTION TWO

- (a) How would you carry out the semi-detailed type of soil survey on cultivated land? [2 marks]
- (b) Explain alluvium and colluvium soils. [2 marks]

QUESTION THREE

- (a) Discuss how topography influences soil formations. [6 marks]
- (b) Discuss three (3) objectives of establishing the soil taxonomy. [3 marks]

QUESTION FOUR

- (a) Discuss beneficial effects of soil organisms. [4 marks]
- (b) Discuss any three (3) consequences of soil degradation. [3 marks]

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

QUESTION FIVE

- (a) Discuss the significance of soil texture in agriculture. [6 marks]
- (b) Describe the typical information in a published area soil survey. [7 marks]
- (c) Discuss hydrolysis as a chemical soil weathering process. [7 marks]

QUESTION SIX

- (a) Describe how you would carry out the moist ball and shine soil textural tests on a given farm. [6 marks]
- (b) Describe the rock cycle. [6 marks]
- (c) Describe how soils are classified according to the prevailing climate in which they are developed and the vegetation which is associated with them. [8 marks]

QUESTION SEVEN

- (a) Describe any four (4) action points to protect or improve the environment. [8 marks]
 - (b) Explain the four basic processes that determine how soil formation factors affect soil development (soil genesis). [4 marks]
 - (c) Explain any four (4) functions of water in relation to plant growth. [8 marks]
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