

SOIL 100

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF
BACHELOR OF SCIENCE IN AGRICULTURE, BACHELOR OF SCIENCE IN
AGRICULTURAL ECONOMICS, BACHELOR OF SCIENCE IN ANIMAL
SCIENCE & WILDWILFE MANAGEMENT**

SOIL 100: INTRODUCTION TO SOIL SCIENCE

STREAMS: BSC (AGRIC, AGECE, ANSC & WIEM) Y1S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 06/04/2020

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS: Answer ALL questions in section A (30 Marks) any TWO in section B (40 Marks)

SECTION A

QUESTION ONE

- (a) Explain the various branches of soil science. [6 marks]
- (b) How would you tell if a soil structure is damaged on a cropped field? [4 marks]

QUESTION TWO

- (a) Illustrate the composition of soil on a well-managed pearl millet farm. [4 marks]
- (b) How would you sample soils using the thin walled tube method? [2 marks]

QUESTION THREE

- (a) Distinguish between the oxisols and alfisols. [4 marks]
- (b) Explain the various phases of soils in an ideal agro-ecosystem. [3 marks]

QUESTION FOUR

- (a) Explain the causes of desertification. [4 marks]
- (b) What are the detrimental effects of soil organisms. [3 marks]

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SECTION B (40 MARKS) – ANSWER TWO QUESTIONS

QUESTION FIVE

- (a) Describe the various types of soil and water conservation measures. [8 marks]
- (b) Using a relevant example, explain how hydration is a principle reaction that contributes to chemical weathering of soils. [7 marks]
- (c) Discuss soil colloids. [5 marks]

QUESTION SIX

- (a) Explain the biotic factor that affect soil genesis. [6 marks]
- (b) How would you carry out the feel and taste soil textural tests on a coffee farm. [6marks]
- (c) Explain the semi-detailed and intensive survey methods based on their scales. [8 marks]

QUESTION SEVEN

- (a) Describe the broad classifications of soil fungi. [9 marks]
 - (b) Illustrate the blocky and massive soil structures as observed in a well conserved agro-ecosystem. [6 marks]
 - (c) Explain any FIVE (5) functions of water in relation to plant growth. [5 marks]
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