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UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN AGRICULTURE AND RURAL DEVELOPMENT

SOIL 0100: INTRODUCTION TO SOIL SCIENCE

STREAMS: DIP. AGRIC

TIME: 2 HOURS

DAY/DATE: TUESDAY 11/04/2023

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

Answer all questions in section A (40 marks) and any other TWO in section b (30 marks)

SECTION A (ANSWER ALL QUESTIONS) – 40 MARKS

QUESTION ONE

- (a) Highlight the two (2) common ways through which minerals form [2 marks]
- (b) In your opinion what are three (3) uses of soil survey [3 marks]
- (c) Explain any five (5) unique physical properties of minerals [5 marks]

QUESTION TWO

- (a) Briefly describe any three (3) characteristics of soils formed by laterization pedogenic process. [3 marks]
- (b) Briefly describe planosols as one of the major soils found in Kenya. [6 marks]

QUESTION THREE

- (a) Differentiate between colluvium and alluvium transported deposits. [2 marks]
- (b) Briefly describe the two ways in which water molecules behaves in the soil. [4 marks]

QUESTION FOUR

- (a) Explain any three (3) factors affecting water use efficiency in irrigated farms. [6 marks]
- (b) Justify any four (4) disadvantages of using surface mulching in agricultural farm. [4 marks]
- (c) Highlight any five (5) effects of poor drainage [5 marks]

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SECTION B: ANSWER ANY TWO QUESTIONS (30 MARKS)

QUESTION FIVE

- (a) Discuss special and general purpose survey clearly indicating their advantages and disadvantages. [7 marks]
- (b) As an extension officer advice farmers on eight (8) factors that commonly lead to development of structure in arable soil. [8 marks]

QUESTION SIX

- (a) Describe hydration as a principle of chemical weathering [7 marks]
- (b) Describe Explain transported parent material [8 marks]

QUESTION SEVEN

- (a) You have been invited to the ministry of Agriculture field day at Tharaka Nithi County. Briefly advice the extension officers and farmers on the typical information contained in a published county soil survey. [5 marks]
- (b) Discuss five (5) reasons for soil testing by farmers before carrying out any agricultural activity. [10 marks]
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