



# KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

## SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION (SCIENCE)

### KRM 401: GENERAL SOIL MANAGEMENT

DATE: MONDAY, 26<sup>TH</sup> MARCH 2012

TIME: 2.00 P.M. – 4.00 P.M.

**INSTRUCTIONS:** Answer Question 1 and any other THREE Questions.

1. (a) Differentiate between the following terms as used in soil science.
  - i. Leaching and Drainage.
  - ii. Soil texture and Soil structure.
  - iii. Eluviation and Illuviation.

(6 marks)
- (b) State FIVE types of problem soils. (5 marks)
- (c) State FOUR sources of soil acidity. (4 marks)
- (d) Outline FOUR practices that lead to destruction of soil structure. (4 marks)
- (e) Briefly discuss how the soil may be managed to prevent the destruction of soil structure. (6 marks)
2. (a) What are the common characteristics of the following soils and for each soil state two areas where they are found in Kenya.
  - i. Nitisols
  - ii. Ferralsols
  - iii. Andosols

(9 marks)
- (b) State ONE major limitation of the soil types in Q2 (a) above. (3 marks)
- (c) State the importance of soil organic matter in crop production. (3 marks)

3. (a) State the TWELVE soil orders of the USDA soil taxonomy. (12 marks)  
(b) State THREE ways in which saline and sodic soils affect plant growth. (3 marks)
4. (a) Discuss how sodic soils may be reclaimed. (8 marks)  
(b) Discuss advantages of drip irrigation methods. (7 marks)
5. (a) State the liming materials you would use to control soil acidity. (5 marks)  
(b) Discuss environmental effects of fertilizer use. (10 marks)

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