



**SUPPLEMENTARY 2010/2011**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF AGRONOMY YEAR 4**

**COURSE CODE: CP 404**

**TITLE OF PAPER: SOIL MANAGEMENT**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS**

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THE CHIEF INVIGILATOR**

**QUESTION 1**

- (a) Describe the location of tropical and subtropical regions of the world. [3]
- (b) Highlight the origin of charge in soils of these regions [8]
- (c) Discuss the implications of the nature of charge in these regions on
  - (i) nutrient retention [7]
  - (ii) lime requirement [7]

**QUESTION 2**

- (a) What is a saline soil? [3]
- (b) What are the causes of soil salinity? [10]
- (c) Outline the strategies you would recommend to improve crop yields in saline soils. [12]

**QUESTION 3**

- (a) Discuss the genesis of acid sulphate soils. [10]
- (b) Discuss the constraints posed by these soils to increased crop yields and recommend strategies for improved crop yields in such soils [15]

**QUESTION 4**

- (a) Outline the major characteristics of soils in arid and semiarid regions of the world [10]
- (b) Discuss the fertility status of vertisols. [15]

**QUESTION 5**

- (a) Differentiate between “Total cation exchange capacity” and “Effective cation exchange capacity”. [7]
- (b) Discuss the strategies you would recommend to increase the effective cation exchange capacity of tropical and subtropical soils [18]