



SUPPLEMENTARY 2011/2012

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR IV

COURSE CODE: CP: 406

TITLE OF PAPER: SOIL MANAGEMENT

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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THE CHIEF INVIGILATOR**

QUESTION 1

- (a) What is the essential difference between exchangeable acidity and non-exchangeable acidity? [5]
- (b) Outline the nature of charges in tropical and sub-tropical soils and indicate the soil materials responsible for such charges. [10]
- (c) Discuss the implications of the charges in (b) above on soil properties and consequent management requirements. [10]
[25]

QUESTION 2

- (a) Discuss the effects of a long cycle of pineapple production on soil properties. [15]
- (b) What strategies would you recommend to improve yields of cereal crops in soils previously under a long cycle of pineapple production? [10]
[25]

QUESTION 3

- (a) Define the term “soil salinity” and outline the causes of this soil condition. [10]
- (b) Discuss the strategies you would recommend to improve crop yields in saline soils. [15]
[25]

QUESTION 4

- (a) Outline the characteristics of soils in arid and semiarid regions of the world [10]
- (b) Discuss the fertility of vertisols and the challenges these soils pose to arable farming [15]
[25]

QUESTION 5

- (a) Discuss the soil requirement for sugarcane production and their subsequent management requirements. [25]

QUESTION 6

(a) Discuss the major soil management requirements of soils in the middleveld and highveld of Swaziland for increased crop yields. [25]