

**2<sup>ND</sup> SEM. 2007/2008**



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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURE YEAR 5  
(CROP PRODUCTION AND HORTICULTURE OPTIONS)**

**COURSE CODE: CP 505**

**TITLE OF PAPER: SOIL MANAGEMENT**

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

**INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY  
THE CHIEF INVIGILATOR**

**QUESTION 1**

- (a) Discuss the possible reasons for the poor yields of cereal crops grown in soils previously under a 7-year pineapple production cycle [12]
- (b) Highlight the important changes in soil properties after a piece of land has been flooded in soil preparation for lowland rice production [13]  
(25 MARKS)

**QUESTION 2**

- (a) What is a saline soil? [4]
- (b) Outline the causes of soil salinity [10]
- (c) Discuss the strategies you would recommend to improve plant growth in saline soils [11]  
(25 MARKS)

**QUESTION 3**

- (a) Discuss the origin of charge in highly weathered soils of the tropics and sub-tropics [10]
- (b) What are the implications of variable charge in tropical and sub-tropical soils on (i) nutrient retention and (ii) lime requirement? [15]  
(25 MARKS)

**QUESTION 4**

- (a) Outline the distribution and development of acid-sulphate soils [12]
- (a) Suggest strategies that can help improve crop yields in such soils [13]  
(25 MARKS)

**QUESTION 5**

Discuss the merits and demerits of the following kinds of fire:

- (i) Ground fire [8]
- (ii) Crown fire [9]
- (iii) Man-induced fire [8]  
(25 MARKS)