



2ND SEM. 2005/2006

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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 FOUR (4) QUESTIONS

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1

- (a) Discuss the possible reasons for the poor yields of crops grown in soils previously under a 5-year pineapple production cycle [12]
- (b) Outline the changes in soil properties after a piece of land has been flooded in soil preparation for lowland rice production [13]

QUESTION 2

- (a) What is the essential difference between a “sodic soil” and a “saline soil”? [5]
- (b) Outline the leading causes of soil sodicity [8]
- © Discuss the management strategies you would recommend to increase crop yields in sodic soils [12]

QUESTION 3

- (a) Highlight the origin of charge in highly weathered soils of the tropics and subtropics [10]
- (b) Discuss the implications of variable charge of tropical and subtropical soils on (i) nutrient retention and (ii) lime requirement [15]

QUESTION 4

- (a) Outline the agricultural potential of vertisols [13]
- (b) How may vertisols be managed for increased crop yields? [12]

QUESTION 5

Give a brief account of the impacts of fire on the following:

- (I) Vegetation [9]
- (ii) Land slope [8]
- (iii) Animals [8]