



1st SEM. 2006/2007

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UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME: **DIPLOMA IN AGRICULTURE YEAR III AND
DIPLOMA IN AGRICULTURAL EDUCATION
YEAR III**

COURSE CODE: **CP 202**

TITLE OF PAPER: **SOIL FERTILITY**

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

INSTRUCTIONS: **ANSWER QUESTION ONE(1) WHICH IS A
COMPULSORY QUESTION AND ANY
OTHER TWO (2) QUESTIONS**

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INSTRUCTIONS: ANSWER QUESTION ONE (1) WHICH IS COMPULSORY AND ANY OTHER TWO (2) QUESTIONS.

QUESTION 1

- (a) Discuss in detail the effect of soil pH on plant growth. (21).
- (b) What management considerations would you recommend to increase crop yields in acid soils (4).
- (c) Describe the following terms and indicate their significance in crop production:
 - (i) Nitrogen fixation (3)
 - (ii) Split application of fertilizer (2)
 - (iii) Phosphorus fixation (2)
 - (iv) Xnebiotic compounds (2)
 - (v) Mass flow (2)
 - (vi) Mineralization (2)
 - (vii) Luxury consumption (2)

(40 marks)

QUESTION 2

Discuss the methods of fertilizer application and highlight the merits of each method.

(30 marks)

QUESTION 3

Discuss the mechanisms responsible for the transport of nutrients to the vicinity of plant roots and indicate the importance of each for:-

- (i) Mobile nutrient
- (ii) Immobile nutrient

(30 marks)

QUESTION 4

Discuss the major soil fertility problems in your country that are limiting food production . What remedial actions would you recommend to farmers of your country to improve crop production in such soils.

(30 marks)