UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

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

COURSE CODE: CP 202

TITLE OF PAPER: SOIL FERTILITY

TIME ALLOED: TWO (2) HOURS

INSTRUCTIONS:

ANSWER QUESTION ONE (1) WHICH IS A QUESTION AND ANY OTHER TWO (2) QUESTIONS

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

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

QUESTION 1

Phosphorus, which is an essential nutrient, is universally deficient in all soils.

(a) Discuss the factors which influence the availability of phosphorus in soils (20).
(b) What management strategies would you recommend to a farmer to improve phosphorus availability to the plant in soils. (5)
(c) Describe the following terms and indicate their significance in crop production:-

(i) Mineralization (3)
(ii) Luxury consumption (3)
(iii) Nitrogen fixation (3)
(iv) Band application of fertilizer (3)
(v) Diffusion (3)

(40 marks)

QUESTION 2

Highlight the pools of potassium in soils and comment on the relative importance of each pool on potassium nutrition of plants.

(30 marks)

QUESTION 3

(a) Discuss lime requirement and its significance in crop production. Discuss the different sources (merits and demerits) (10).
(b) Discuss the role of kraal manure in crop production and indicate any negative effects this material may have in the soil (20).

(30 marks)

QUESTION 4

(a) Discuss three methods of fertilizer application which are commonly used by most farmers and give the advantages and disadvantages of each method. (25 marks)

(b) Differentiate between active and potential soil acidity (5).

(30 marks)