



1<sup>st</sup> SEM.2006/2007

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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION**

**PROGRAMME :** B.Sc. IN AGRICULTURE YEAR V (CROP PRODUCTION, HORTICULTURE AND LAND AND WATER MANAGEMENT OPTIONS) AND B.Sc. IN AGRICULTURAL EDUCATION YEAR V.

**COURSE CODE :** CP 502

**TITLE OF PAPER:** SOIL CHEMISTRY AND FERTILITY  
SECTION 1: SOIL CHEMISTRY  
SECTION 2: SOIL FERTILITY

**TIME ALLOWED:** TWO [2] HOURS

**INSTRUCTIONS:** ANSWER FOUR QUESTIONS [4] WITH AT LEAST TWO [2] QUESTIONS IN EACH SECTION

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

**SECTION 1: SOIL CHEMISTRY**

**QUESTION 1**

Discuss the stability of feldspar minerals in soils and indicate the significance of these minerals in soil science and on the mineral nutrition of plants. [25]

**QUESTION 2**

Discuss the fate of pesticides in soils and indicate their impacts on the environment. [25]

**QUESTION 3**

Discuss the important chemical, physical and biological effects of organic matter which are of significance when soils are used for crop production. [25]

**SECTION 2 : SOIL FERTILITY**

**QUESTION 4**

Discuss the roles of micro-nutrients in crop production. [25]

**QUESTION 5**

Discuss four [4] methods of fertilizer application which you could recommend to farmers and highlight their merits and demerits. [25]

**QUESTION 6**

- a) Discuss the various ways in which nitrogen is added to soils. [13]
- b) Highlight the management strategies you would recommend to improve the efficiency of nitrogen uptake and utilization by plants. [12]

[25]