



**SUPP. 2011/2012(S)**

**PAGE 1 OF 3**

**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMMES: BACHELOR OF SCIENCE YEAR II IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING, AGRICULTURAL EDUCATION, AGRONOMY, ANIMAL SCIENCE, ANIMAL SCIENCE (DAIRY) AND HORTICULTURE.**

**COURSE CODE: CP 201**

**TITLE OF PAPER: INTRODUCTORY SOIL SCIENCE**

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

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS**

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**QUESTION 1**

(a) Define or give short descriptions of the following terms or phrases: (Each question carries 2 marks)

- (i) Physical weathering
- (ii) Soil structure
- (iii) Ion exchange
- (iv) Soil genesis
- (v) Symbiotic nitrogen fixation

(b) The soil reaction is considered a master variable in soil chemistry. Discuss the influence of the soil reaction on plant growth. [10]

(c) What remedial strategies would you recommend to improve plant growth in acid soils? [5]  
[25]

**QUESTION 2**

(a) Outline the importance of soil water when soils are used for crop production [12]

(b) Discuss the management of soil water for improved crop yields [13]  
[25]

**QUESTION 3**

(a) Define the term "organic matter" [5]

(b) Discuss the effects of organic matter which are important when soils are used for crop production [20]  
[25]

**QUESTION 4**

- (a) What is the role of soil structure in crop production? [8]
- (b) Discuss the management practices you would recommend to maintain or improve the structure of a soil [17]  
[25]

**QUESTION 5**

- (a) Discuss the factors of soil formation. [15]
- (b) Discuss the processes of soil formation clearly indicating the significance of each process in the development of soils. [10]  
[25]