



**UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER**

**2<sup>ND</sup> SEMESTER 2015/2016**

**PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR FOUR (4)**

**COURSE CODE: CP 405**

**TITLE OF PAPER: CEREAL AND LEGUME CROP PRODUCTION**

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

**INSTRUCTIONS: ANSWER ONE AND ANY OTHER THREE QUESTIONS.**

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CHIEF INVIGILATOR**

**QUESTION 1 - COMPULSORY**

- a) Discuss the importance of cereals and legume crops in Africa including the most important constraint to cultivation of both groups crops.(20 marks)
- b) Among the cereals, maize is an important staple grain crop in sub-Saharan Africa. Identify and discuss the stages in the development of a maize plant and highlight important aspects of management at each stage. (20 marks)

**[40 Marks]****QUESTION 2**

- a) Name and describe two distinct botanical groups of ground nuts based on their branching habit and choose one type that you would recommend for a smallholder farmer who wishes to produce “peanut butter” and explain why you chose that type. (10 marks)
- b) Give at least five (5) reasons why recent studies indicate fluctuations and downward trend in groundnut production in Africa. (10 marks)

**[20 Marks]****QUESTION 3**

Discuss the agronomic aspects of sorghum (*Sorghum bicolor*) production in Swaziland, under the following headings:

- a) Tillage (5 marks)
- b) Time of planting (5 marks)
- c) Plant population on yield (5 marks)
- d) Fertilizer response, water requirement and management (5 marks)

**[20 Marks]****QUESTION 4**

- a) What are the factors that determine the crop combination and special arrangement in intercropping? (10 marks)
- b) The maize + beans intercropping system is common in the tropics. Discuss the factors that influence the performance of this mixture. (5 marks)
- c) Describe the advantages and disadvantages of intercropping. (5 marks)

**[20 Marks]**

**QUESTION 5**

- a) Give and briefly discuss the three (3) fundamental principles of conservation agriculture and explain the actions that could be taken by a farmer who has recently been introduced to conservation agriculture to increase his crop yields dramatically. (10 marks)
- b) Outline the benefits to be realized from conservation agriculture. (10 marks)

**[20 Marks]**