



2ND SEM 2010/2011

PAGE 1 OF 3

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

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

COURSE CODE: CP 407

TITLE OF PAPER: GRAIN LEGUME CROP PRODUCTION

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.

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QUESTION 1

- (a) List the 12 primary legumes and give an outline of their characteristics. (15 marks)
- (b) Legumes are known to fix and convert atmospheric nitrogen using their root nodules and the nitrogen is available for plant uptake. Outline the nodulation process. (10 marks)

[25 Marks]

QUESTION 2

- (a) Many cultivars of groundnuts fall naturally into two distinct botanical groups depending on their branching habits. Name and describe the two branching habits (10 marks)
- (b) Harvesting is a critical aspect of groundnut production, because of the potential losses and disease infection that may occur at the time of harvest. What are the aspects to consider at harvesting? (10 marks)
- (c) How does crop rotation, especially with cereals, benefit groundnut seed yield? (5 marks)

[25 Marks]

QUESTION 3

- (a) Vegetable oil from another legume besides peanut oil is supposed to cost less than other vegetable oil. Give the name of that grain legume and indicate its (legume) importance in human nutrition. (10 marks)
- (b) Root development of the oil producing legume in (a) above is divided into three separate stages, give a brief description of those stages. (5 marks)
- (c) What are the climatic requirements for this grain legume crop? (10 marks)

[25 Marks]

QUESTION 4

- (a) *Vigna unguiculata* (L.) is considered to be one of the most drought tolerant crops and can go a long way in improving food and nutrition security in the country. Discuss this statement. (10 marks)
- (b) Why is it important to inoculate legume seed before planting? Name the micro-organism used. (5 marks)
- (c) Compare the sowing and plant spacing for *Vigna unguiculata*(L) under sole and mixed cropping. (10 marks)

[25 Marks]

QUESTION 5

India appears to be the highest producer of both chickpeas and lentils. If you were to be employed by one of the Indian companies involved in the production of dhal soups, which legume would you choose to produce and why? **(25 Marks)**