UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

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| PROGRAMME: | B.Sc. AGRIC & BIOSYSTEMS ENGINEERING YEAR 4<br>B.Sc. AGRIC. ECON. & AgBMgt YEAR 4<br>B.Sc. AGRICULTURAL EDUCATION YEAR 4 |
| COURSE CODE: | CP 409 |
| TITLE OF PAPER: | FIELD CROPS |
| TIME ALLOWED: | TWO (2) HOURS |
| INSTRUCTIONS: | ANSWER ANY FOUR QUESTIONS |

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## QUESTION 1

Identify and discuss the stages in the development of a maize plant and highlight important aspects of management at each stage in order to optimize yields.

**[25 Marks]**

## QUESTION 2

a) What are heat units and how are they determined. (8 marks)
b) Discuss the practical implications of heat units and the optimum planting date of a maize crop. (9 marks)
c) How is the growth class of hybrids determined? (8 marks)

**[25 Marks]**

## QUESTION 3

(a) Discuss the effects of rotating sorghum with cotton and indicate the benefits that would accrue to farmers in the cotton growing regions from exercising this option. (15 marks)

(b) Sorghum plants have an ability to yield even under severe drought conditions. Discuss. (10 marks)

**[25 Marks]**

## QUESTION 4

a) With the aid of a labelled diagram, describe the process of root nodule formation in grain legumes. (10 marks)
a) State how and under which conditions legume seed are inoculated with Rhizobia. (15 marks)

**[25 Marks]**

## QUESTION 5

a) The maize and beans intercropping system is common in the tropical and subtropical regions. Discuss the factors that influence the performance of this intercropping system. (15 marks)

b) Discuss five aspects to successful intercropping. (10 marks)

**[25 Marks]**