



2ND SEMESTER 2005/2006

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: **DIPLOMA IN AGRICULTURE YEAR 2**
DIPLOMA IN AGRICULTURAL EDUCATION
YEAR 2
DIPLOMA IN HOME ECONOMICS YEAR 2
DIPLOMA IN HOME ECONOMICS EDUCATION
YEAR 2

COURSE CODE: **CP 201**

TITLE OF PAPER: **PRINCIPLES OF CROP PRODUCTION**

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

INSTRUCTION: **ANSWER QUESTION ONE [1], WHICH IS A**
COMPULSORY QUESTION, AND ANY OTHER
THREE QUESTIONS OF YOUR CHOICE

INSTRUCTION TO REGISTRAR: PLEASE PROVIDE GRAPH PAPERS

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BY THE CHIEF INVIGILATOR

QUESTION 1**[THIS IS A COMPULSORY QUESTION]**

Write in **DETAILS** on the following. Use examples to illustrate your answers, where possible. [Each question carries five marks].

- [a] Cropping systems
- [b] Methods of determining moisture content in crop seeds
- [c] Seed vigour tests
- [d] Organic manures
- [e] From the data below, calculate the seed yield [kg/ha]

[i] Initial mass of seed: 250 g

[ii] Final mass of seeds after oven drying: 200 g

[iii] Seed yield from a maize field with an area of 15 rows each 20 m long at weighing was 3000 g

Calculate the seed yield [kg/ha] at 12.5% moisture content
Please show your calculations

[25 marks]

QUESTION 2

Write in **DETAIL** on the following;

- [a] How to produce maize seedlings [7 marks]
- [b] Explain why only a few crops are used by human kind [6 marks]
- [c] The role of medicinal plants in human nutrition [6 marks]
- [d] Crop diversification [6 marks]

QUESTION 3

[a] Explain what you understand by on-farm research

[5 marks]

[b] List the types of experimental designs that are used in on-farm research

[5 marks]

[c] How would you determine LAI in a maize crop?

[5 marks]

[d] A researcher at the Crop Production Department at Luyengo conducted an experiment on the effects of a compound fertilizer rates on LAI and the yield of beans and obtained the data below for LAI.

Draw a graph for the data and explain the results.

Compound fertilizer rates [kg/ha]	Weeks after planting	LAI
0 [Control]	2	1.2
	4	1.8
	8	2.4
	12	1.3
200	2	1.6
	4	2.1
	8	2.7
	12	1.6
400	2	1.8
	4	2.5
	8	3.7
	12	2.1

[10 marks]

QUESTION 4

Write briefly on the following. Use examples to illustrate your answer
[Each question carries five marks]

- [a] Yield components in crops
- [b] Crop rotation
- [c] Factors affecting seed rate of crops
- [d] Seed viability tests
- [e] Factors affecting crop growth and development

QUESTION 5

- [a] Discuss the factors that affect the amount of light intercepted by crops
- [b] If a kilogramme of maize seed costs E15.00. How much would you spend for 50 ha of land
- [c] With the aid of a diagram, indicate the degree of farmers involvement in research
- [d] Write on the methods of applying fertilizer to crop plants