

**GWANDA STATE UNIVERSITY**



**FACULTY OF LIFE SCIENCES**

**DEPARTMENT OF CROP SCIENCE**

**BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE**

**LCS 2209 AGRONOMY OF FIELD CROPS**

**FINAL EXAMINATION PAPER**

**JANUARY 2021**

This examination paper consists of 3 pages

**Time Allowed: 3 hours**

**Total Marks: 100**

**Special Requirements: None**

**Examiner's Name: N. MATHEMA**

**INSTRUCTIONS**

1. Answer **ALL** questions in Section A
2. Answer **only two** questions in Section B

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
SECTION A	<b>60</b>
SECTION B	<b>40</b>
<b>TOTAL ATTAINABLE MARKS</b>	<b>100</b>

## SECTION A: ANSWER ALL QUESTIONS

### Question 1

- a) Selecting the right seed variety is of primary importance in Crop production. Support this statement using a field crop of your choice under the following headings;
- i) Days to maturity [2]
  - ii) Harvestable part [2]
  - iii) Crop uniformity in size and maturity [2]
  - iv) End use of harvestable part [2]
  - v) Disease tolerance [2]
- b) Assuming you are assigned to train farmers in Mashologwane village east of Gwanda State University campus about liming using a tractor drawn liming box, illustrate how the farmers should apply the lime for successful crop production. [10]

### Question 2

Crop establishment is important in the Agronomy of the Maize crop for attainment of Optimum yields. Propose good agronomic practices which may lead to high yields in a maize crop grown in the drought prone Matabeleland South province. [20]

### Question 3

- a) Describe El Nino and La Nina weather phenomena [10]
- b) It is thought that during the 2020/2021 Agricultural season a La Nina weather phenomenon will affect Southern Africa. Outline the possible effects of the weather phenomenon to Crop production. [10]

## SECTION B: ANSWER ANY 2 QUESTIONS

### Question 4

- a. Outline the factors influencing yield components that a farmer must consider under the following Wheat management phases;
- i. Planting phase [9]
  - ii. Vegetative and reproductive phase [6]
  - iii. Grain filling phase [5]

### Question 5

- a) Biotic factors affect Crop yields in many ways. Validate this statement under the following headings;
- i) Weeds [4]
  - ii) Insect pests and diseases [8]
- b) Identify and describe the abiotic stresses which affect Crop production and how farmers may reduce the risks associated with such stress. [8]

### Question 6

- a) It has been recommended that a farmer apply 90kg of nitrogen and 45kg of phosphate per hectare. How much of ammonium nitrate and single superphosphate should be applied to achieve the recommended application rate of nitrogen and phosphate? [10]
- b) Citing examples, define a Straight fertilizer. [4]
- c) What are Compound fertilizers and what are the advantages of using them in Crop production? [6]

**Question 7**

Discuss the agronomy of Soya beans under the following sub-headings;

- (a) Cultivar choice [5]
- (b) Planting methods, planting patterns and populations [5]
- (c) Weed management [5]
- (d) Pests and pest management [5]