

GWANDA STATE UNIVERSITY



FACULTY OF NATURAL RESOURCES MANAGEMENT & AGRICULTURE

DEPARTMENT OF HORTICULTURE AND CROP PRODUCTION

BACHELOR OF SCIENCE (HONOURS) DEGREE IN CROP SCIENCE

LCS 2206 AGRONOMY OF ANNUAL CROPS

APRIL 2024

This examination paper consists of 4 pages.

Time Allowed: 3 hours.
Total Marks: 100
Special Requirements: None
Examiner's Name: Mathema N.

INSTRUCTIONS

1. Answer **FIVE (5)** questions.
2. Each question carries 20 marks.

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Question 1

- a) Differentiate between El nino and La nina weather phenomena [10]
- b) The 2023/2024 cropping season can be categorized as an El nino season, what are possible effects of such weather phenomenon on agricultural production and people's livelihoods? [10]

Question 2

Compare soya bean and sugar bean agronomy in terms of the following;

- a) Seed requirement [1]
- b) Type of germination [1]
- c) Sowing and growth period [3]
- d) Plant population [1]
- e) Fertilizer requirements [4]
- f) Potential yield in various agroecological regions and management systems [4]
- g) Pests and diseases [6]

Question 3

Suppose you are an agricultural extension officer at Mzingwane district in Matabeleland South province of Zimbabwe, justify why farmers must know the following when growing soya beans;

- a) Markets [1]
- b) Days to maturity and expected yield [2]
- c) Soil, pH, rainfall, fertilizer requirements [5]
- d) Land preparation [2]
- e) Time of Planting and plant population [3]
- f) Pests, weed and disease control [6]
- g) Harvesting [1]

Question 4

- a) If you were to be asked to apply lime in a crop field, outline how you would carry out the process. [10]
- b) 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 size [2]
 - iii. Crop uniformity in size and maturity [2]
 - iv. End use of harvestable part [2]
 - v. Disease tolerance [2]

Question 5

Outline Irish potato *Solanum tuberosum* production under the following sub-headings.

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

Question 6

Suppose you are an Agronomist at the Matabeleland South AGRITEX Provincial offices, and you have been asked to give a lecture about the importance of the Yam *Dioscorea trifida* crop to the livelihoods of resource poor farmers in Chipinge and other Manicaland districts of Zimbabwe, design a write-up indicating the content you will present to the farmers. You may use the following sub headings;

- a) Varieties [4]
- b) Climatic requirements: [3]
- c) Fertilizer and Soil Requirements [6]
- d) Propagation & plant population [4]
- e) Land Preparation [3]

Question 7

Describe Potato (*Solanum tuberosum*) production under the following sub-headings;

- a) Cultivar choice [4]
- b) Land preparation [4]
- c) Sprouting of potatoes [3]
- d) Planting times [3]
- e) Irrigation requirements [2]
- f) Fertilizer requirements [4]

END OF EXAMINATION