



GWANDA STATE UNIVERSITY
FACULTY OF LIFE SCIENCES
DEPARTMENT OF CROP SCIENCE
BACHELOR OF SCIENCE (HONOURS) DEGREE IN CROP SCIENCE
LCS 2108 PRINCIPLES OF CROP PRODUCTION
FIRST SEMESTER FINAL EXAMINATION PAPER

FEBRUARY 2022

This examination paper consists of 3 pages, inclusive of cover page

Time Allowed: 3 hours
Total Marks: 100
Special Requirements: None
Examiner's Name: MR J DUBE

INSTRUCTIONS

1. Answer **ALL** questions in Section A
2. Answer **ONLY THREE** questions in Section B

MARK ALLOCATION

QUESTION	MARKS
SECTION A	40
SECTION B	60
TOTAL ATTAINABLE MARKS	100

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SECTION A: ANSWER ALL QUESTIONS

[40 MARKS]

QUESTION 1

- a. Examine the importance of the following practices of crop production:
- i. Scouting [2]
 - ii. Soil testing [2]
 - iii. Inter-cropping [2]
 - iv. Seedling hardening [2]
 - v. Soil sampling [2]
 - vi. Early planting [4]
- b. Outline the importance of the following practices in crop production:
- i. Irrigation [5]
 - ii. Crop rotation [4]
 - iii. Split nitrogen top-dressing in maize production on sandy soils [2]
- c. Examine the following weed management methods:
- i. Chemical weed control methods [4]
 - ii. Cultural weed control [4]
 - iii. Mechanical weed control [3]
- d. Discuss the principles of conservation tillage [4]

SECTION B ANSWER ANY THREE QUESTIONS. EACH QUESTION CARRIES 20 MARKS.

Question 2

- a) Examine the role of nitrogen in the physiology, plant growth and development.
(8)
- b) Suppose you were an agricultural extension officer in Filabusi, suggest any four principles of crop rotation you would recommend to your local crop farmers
[8]

c) Citing relevant examples, discuss the type of crops that are used in green manuring and the potential benefits of green manuring in crop production.

[4]

Question 3

a) Outline five factors influencing seed quality. [10]

b) Discuss any five agricultural practices used to maintain soil fertility under continuous cropping systems [10]

Question 4

a) Suppose the Famine Early Warning Systems Network (FEWSNET) has warned that there is an increased probability of drought inducing El Niño weather conditions— in southern Africa and Zimbabwe during the forthcoming agricultural season, discuss strategies that smallholder farmers may deploy to reduce the negative effects of drought and heat stress on crop growth and yield [10]

b) Put into perspective the objectives of crop improvement. [10]

Question 5

a) Examine five characteristics of weed species that make them successful competitors of crops in agro-ecological settings [10]

b) Describe five cultural methods of pest control [10]

Question 6.

a) Identify any one cereal crop and examine its production under the headings:

i. Ecology and growing conditions [4]

ii. Land preparation and crop husbandry [4]

iii. Harvesting and post-harvest handling [2]

b) Most communal farmers would prefer using drip irrigation ahead of surface irrigation methods. Justify their preferences for drip irrigation.

[10]