

NATIONAL UNIVERSITY OF LESOTHO
B.Sc. (AGRIC) CROP SCIENCE EXAMINATION
CPS 3506: FIELD CROPS PRODUCTION

AUGUST 2023

MARKS: 100

TIME: 3 HOURS

INSTRUCTIONS: ANSWER ALL FIVE QUESTIONS.
EACH QUESTION CARRIES 20 MARKS
COMMENCE EACH ANSWER ON A NEW SHEET

QUESTION 1

1.1 Define the following terms:

- a) Cardinal temperature (3)
- b) Relative Humidity (RH) (2)
- c) Ray floret (1)
- d) Field crop (1)
- e) Soil organic matter (1)
- f) Tassel (1)
- g) Hypocotyl (1)

1.2 Briefly discuss

- a) The two aspects of rainfall (rainfall frequency and distribution) which are important in crop production (2)
- b) Alkaloids condition in potato production (4)
- c) Photoperiodism (4)

QUESTION 2 (20 MARKS)

2.1 List five Environmental/External factors affecting crop production (5)

2.2 List and define five types of corn (5)

2.3 Field crops can be classified on different bases. List the five bases of classification of field crops other than their agronomic use (5)

2.4 List five beneficial effects of soil organic matter in crop production (5)

QUESTION 3 (20 MARKS)

3.1 Discuss the five plant structural differences between maize and beans and how they influence their cultivation (10)

3.2 Discuss the growth stages of potatoes (*Solanum tuberosum*) (10)

QUESTION 4 (20 MARKS)

4.1 Draw and label a plant structure of soybean (*Glycine max*) (10)

4.2 Field crop make use of environmental factors to make its own food. Discuss the involvement of climatic factors (air, precipitation, light, temperature) in photosynthesis process (10)

QUESTION 5 (20MARKS)

Compare the cultivation of Soybean (*Glycine max*) and Maize (*Zea Mays*) on the following:

Item	Soybean	Maize
5.1 Centre of Origin (2)		
5.2 Composition/properties (6) i. Carbohydrates ii. Protein iii. Oil content		
5.3 Soil fertility requirement and nutrients management (2)		
5.4 Climatic requirements (6)		
5.5 Signs of Maturity and method of harvesting (4 marks)		