

**NATIONAL UNIVERSITY OF LESOTHO**

**B.Sc. (AGRIC) CROP SCIENCE EXAMINATION**

**CPS 2512: PRINCIPLES AND PRACTICES OF CROP PRODUCTION**

**AUGUST 2023**

**MARKS: 100**

**TIME: 3 HOURS**

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**INSTRUCTIONS: ANSWER ALL FIVE QUESTIONS.**

**EACH QUESTION CARRIES 20 MARKS**

**COMMENCE EACH ANSWER ON A NEW SHEET**

**Question 1: Define the following terms: (20)**

1. Water requirement of a crop (2)
2. Economic injury level (2)
3. Nonselective herbicides (2)
4. Drainage (2)
5. Live mulch (2)
6. Tillage (2)
7. Stratification (2)
8. Photoperiodism (2)
9. Seed pelleting (2)
10. Weed eradication (2)

**Question 2: Briefly discuss (20 marks)**

1. The involvement of water, temperature and oxygen in seed germination (3)
2. Live mulch in soil and water conservation (2)
3. The concept of the pathogen, host and environment in Disease Triangle (3)
4. Five purposes of tillage (5)
5. Criteria used to classify herbicides based on time of application (3)
6. The three main sources of plant nutrients (3)
7. The criteria that an element must meet to be referred to as essential element (3)

### **Question 3: Distinguish between the following (20)**

1. Micro and Macro nutrients (4)
2. Farm yard manure and compost manure (4)
3. The two types of germination: Hypogeal in maize and Epigeal in beans (2)
4. Primary and Secondary dormancy (2)
5. Germination and emergence (2)
6. Obligate and Facultative parasite (2)
7. Common and Noxious weeds (2)
8. Crop rotation and intercropping (2)

### **Question 4**

1. State five characteristic of weeds which make them excellent competitors with the crop plants (5)
2. State five agronomic classification of field crops with example of a crop for each classification (5)
3. State the principles of weed control (5)
4. State five centres of crop origin and for each centre mention one crop that originated from there (5)

### **Question 5**

1. Draw a three-year winter crop rotation with the following crops: wheat, field peas and potatoes for a farmer who divides his entire field into several plots (6). Label the drawing carefully.
2. State the effects of Delayed harvesting of crops on quality of the crop (4)
3. Discuss the following five plant structural differences between maize and beans (seed, roots, stem, leaves, flowers) (10)