

NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF AGRICULTURE

CPS 2509-12: Agricultural Botany and Crop Physiology

June 2023

Marks: 100 marks

Time: 3 hours

Instructions: Section A is compulsory

Section B: Answer ONLY FOUR questions

Each question carries equal marks of 20

Section A

Define the following terms as used in botany and plant physiology. (Each term is 2 marks)

- a. Plant physiology
- b. Meristems
- c. Apical dominance
- d. Aerenchyma
- e. Phyllotaxy
- f. Stele
- g. Primordia
- h. Accessory fruits
- i. Plant growth analysis
- j. Androecium

Section B

Question 1

Discuss in details the primary growth of plant roots; the role played by the four regions of primary growth of plant roots. (20 marks)

Question 2

- a) Distinguish between the following.
 - i. Monocots and dicots (8 marks)
 - ii. Sexual and asexual reproduction (8 marks)
- b) List the four main whorls of the flower. (4 marks)

Question 3

1. The process of photosynthesis
 - i. Elaborate in details the process of photosynthesis and the chemical processes that make up the light reactions of photosynthesis. (16 marks)
 - ii. Discuss the importance of photosynthesis. (4 marks)

Question 4

Discuss in details the following plant growth regulators and the role they play in plant growth and development. (20 marks)

- a) Auxins
- b) Cytokinins

Question 5

- a) Discuss the factors that affect partitioning of the photosynthates from source to sink. (12 marks)
- b) Describe the four complex permanent tissues and the roles they play in plant growth and development. (8 marks)