

NATIONAL UNIVERSITY OF LESOTHO
B.Sc. (AGRIC) EXAMINATION

CPS4506: PLANT BIOTECHNOLOGY

AUGUST 2023

TOTAL MARKS: 100

TIME: 3 HOURS

SUPP EXAM

INSTRUCTIONS: ANSWER ALL QUESTIONS

Question 1 [25 Marks]

- a. Differentiate between traditional breeding and plant biotechnology? [10]
- b. Explain the five components of nutrient medium [15]

Question 2 [25 Marks]

- a) Discuss the steps in clonal propagation / micropropagation [15]
- b) Mention the advantages of micropropagation [10]

Question 3 [25 Marks]

- I. Discuss the factors that affect androgenesis. [10]
- II. Illustrate the pattern of cell growth in nutrient medium. [15]

Question 4 [25 Marks]

Compare and contrast between the following concepts / terms

- i) Direct androgenesis and indirect androgenesis [5]
- ii) Callus culture and suspension culture [5]
- iii) Steam sterilization and dry sterilization [5]
- iv) Microspore culture and anther culture [5]

- v) Genetic engineering and secondary metabolites [5]