



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## University Examinations 2022/2023

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY, BACHELOR OF EDUCATION SCIENCE (BIOLOGY/CHEMISTRY), (BIOLOGY/MATHS), (BIOLOGY/AGRICULTURE), BACHELOR OF SCIENCE IN AGRICULTURE AND BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

### SBA 3150: PLANT MORPHOLOGY AND ANATOMY

DATE: APRIL 2023

TIME: 2 HOURS

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INSTRUCTIONS: Answer question *one* and any other *two* questions

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#### QUESTION ONE (30 MARKS)

- a) Distinguish between the following using illustrations
- (i) Monoecious, dioecious and synoecious plants (6 marks)
  - (ii) Apoplastic, symplastic and transcellular transport paths (6 marks)
- b) Illustrate the general structural organization of plants into systems organs and tissues (6 marks)
- c) Explain the following in relation to plant cells
- (i) Totipotency (2 marks)
  - (ii) Plasticity (2 marks)
- d) Outline any four modifications of seeds for their function (4 marks)

- e) Illustrate the anatomical differences between the cross-section of a primary dicot stem and primary monocot root (4 marks)

**QUESTION TWO (20 MARKS)**

Discuss the adaptations of leaves to their functions (20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the various types of roots found in plants and their modifications for different functions (20 marks)

**QUESTION FOUR (20 MARKS)**

Describe the different types of flowers on influroscent found in plants (20 marks)