



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION

BACHELOR OF EDUCATION (SCIENCE)

SBT 102: PLANT MORPHOLOGY AND ANATOMY

DATE: 30/5/2022

TIME: 11.00-1.00 PM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A

QUESTION ONE (30 MARKS)

- a) Describe the following terms as used in plant morphology and anatomy. (3 marks)
 - i. Totipotency
 - ii. Morphogenesis
 - iii. Inflorescence
- b) Explain three functions of a plant cell wall. (3 marks)
- c) Explain the function of parenchyma cells. (3 marks)
- d) Differentiate between tracheids and vessels. (3 marks)
- e) Describe the types of sclerenchyma cells in higher plants. (3 marks)
- f) Describe the structure of phloem tissue of angiosperms. (3 marks)
- g) Explain any three modifications of the root to its function. (3 marks)
- h) Explain the function of the trichomes. (3 marks)
- i) Describe three types of plant ovaries. (3 marks)
- j) Describe the disadvantages of Self Pollination. (3 marks)

SECTION B

QUESTION TWO (20 MARKS)

- a) Describe the classification of meristematic tissue based on their function. (10 marks)
- b) Describe the Sub – aerial stems in plants. (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the various types of fruits. (10 marks)
- b) Describe five types of vascular bundles. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the development of a fertilized ovule into a mature seed. (10 marks)
- b) Discuss the various types of leaf arrangement in plants. (10 marks)

QUESTION FIVE (20 MARKS)

Discuss the types of inflorescences known in higher plants.