



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN BIOCHEMISTRY

AAB 4221: PLANT MORPHOLOGY AND ANATOMY PAPER I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER, 2024

TIME: 2 HOURS

DATE: Dec., 2024

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- a) Differentiate between;
 - i) Simple pits and bordered pits (2 marks)
 - ii) Collateral and amphiversal vascular bundles (2 marks)
 - iii) Open and closed leaf veins (2 marks)
- b) Highlight the characters used in eudicot wood identifications (4 marks)
- c) Outline any FIVE applications of dendrochronology (5 marks)
- d) Explain the mechanism of plant defense to insect-pest attack by following secondary metabolites;
 - i) Alkaloid (4 marks)
 - ii) Tannins (3 marks)
- e) State the TWO functions of pericycle (2 marks)

- f) Classify plants based on their water requirements (6 marks)

Question TWO

- a) Discuss meristematic tissues based on'
- i) Characteristics (5 marks)
 - ii) Types (10 marks)
- b) Explain the TWO types of Sclerenchymatous tissues (5 marks)

Question THREE

- a) Using a diagram, describe zonal organization of pollen tube tip during its growth (14 marks)
- b) Explain the Functions of tapetum (6 marks)

Question FOUR

Discuss the THREE basic steles types in tracheophytes (20 marks)

Question FIVE

- a) Explain the FIVE possible interactions between plants and their potential pathogens given favorable environmental conditions for infection (10 marks)
- b) Discuss types of idioblasts as means of plant defense against herbivores (10 marks)