



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**THIRD YEAR SUPPLEMENTARY/SPECIAL EXAMINATION FOR
BACHELOR OF EDUCATION**

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE: 6/3/2021

TIME: 8.30 – 10.30 AM

INSTRUCTIONS

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

QUESTION ONE (30 MARKS)

- a) Describe the characteristics of pollen grains that are useful as taxonomic evidences (3 marks)
- b) Describe the advantages of using a polyclave key over a dichotomous key (3 marks)
- c) Outline the international rules of nomenclature for species name (3 marks)
- d) Define the following terms (1 mark each)
 - i. Monograph
 - ii. Flora
 - iii. Herbarium
- e) Describe why cpDNA is the most suitable genetic material as taxonomic evidence of green plants (3 marks)
- f) Outline the characteristics of family *Papilionaceae* (*fabaceae*) (3 marks)
- g) Outline the role of a taxonomist in the field of botany (3 marks)
- h) Describe three advantages of scientific names over common names to scientists (3 marks)
- i) Describe different leaf arrangement used in plant classification (3 marks)
- j) Outline the six principle taxonomic units (3 marks)

QUESTIONS TWO (20 MARKS)

Discuss characteristics any four families of flowering plants and their economic importance

(20 marks)

QUESTIONS THREE (20 MARKS)

- a) Discuss situations that can lead to rejection of a scientific name (10 marks)
- b) Discuss the functions of a herbarium (10 marks)

QUESTIONS FOUR (20 MARKS)

Giving examples, discuss the descriptive features of flowers used in plant classification (20 marks)

QUESTION FIVE (20 MARKS)

Discuss the steps in taxonomy (8 marks)

Discuss types of taxonomic keys (12 marks)