



MACHAKOS UNIVERSITY

University Examinations 2022/2023 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR APRIL SESSION EXAMINATION FOR

BACHELOR OF EDUCATION

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE:

TIME:

INSTRUCTIONS

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

SECTION A (COMPULSORY) (30 MARKS)

QUESTION ONE (30 MARKS)

- a) Describe taxonomic evidences from cytology (3 marks)
- b) Describe the advantages of using a multi-access key over a single access key (3 marks)
- c) Describe briefly the major contributions of Carolus Linnaeus in plant classification (3 marks)
- d) Define the following terms (1 mark each)
 - i. Plant taxonomy
 - ii. Nomenclature
 - iii. Herbarium
- e) Describe why cpDNA is the most suitable genetic material as taxonomic evidence of green plants (3 marks)
- f) Outline any six characteristics of family *Cruciferae* (*Brassicaceae*) (3 marks)
- g) Discuss the three types of classification (3 marks)
- h) Outline 6 characteristics that may not be available in a dried specimen, but can be recorded easily during field studies (3 marks)
- i) Explain sexuality characteristics of flowers used in classification of angiosperms. (3 marks)
- j) Outline the six principle taxonomic units from the highest to the lowest and give their Latin endings where applicable (3 marks)

SECTION B : ANSWER ANY TWO QUESTIONS

QUESTION TWO (20 MARKS)

Discuss four families of flowering plants

QUESTION THREE (20 MARKS)

- a) Discuss situations that can lead to rejection of a scientific name. (10 marks)
- b) Discuss the limitations to the principle of priority in assigning taxonomic names. (10 marks)

QUESTIONS FOUR (20 MARKS)

Giving examples, discuss the descriptive features of leaves used in plant classification.

QUESTION FIVE (20 MARKS)

- a) Discuss the steps in taxonomy (8 marks)
- b) Discuss the different types of taxonomic documentation (12 marks)