



MACHAKOS UNIVERSITY

University Examinations 2020/2021 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE: 22/3/2021

TIME: 8.30-10.30 AM

INSTRUCTIONS

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

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

QUESTION ONE (30 MARKS)

- a) Explain three importance of Plant Taxonomy (3 marks)
- b) Outline six principle taxonomic units from the highest to the lowest and give latin endings where applicable. (3 marks)
- c) Distinguish between the following terms: (4 marks)
 - i. Nomenclature and Identification
 - ii. Cladistic and natural classification
 - iii. Qualitative and quantitative characters
 - iv. Homonyms and Heteronyms
- d) Outline three advantages of mounting herbarium specimen (3 marks)
- e) Define the following terms (3 marks)
 - i. Synopsis
 - ii. Botanical Keys
 - iii. Bracketed keys
- f) Explain three ways in which specific epithets are derived (3 marks)

- g) State the alternative name of the following families (3 marks)
- i. Poaceae
 - ii. Brassicaceae
 - iii. Fabaceae
 - iv. Clusiaceae
 - v. Apiaceae,
 - vi. Lamiaceae
- h) Outline the contributions of *Augustin Pyramus de Candolle* to the field of taxonomy (3 marks)
- i) Explain three agents of animal pollination and give an example of plants that they pollinate (3 marks)
- j) Describe two advantages of scientific names over common names, give examples (2 marks)

SECTION B: ANSWER ANY TWO (2) QUESTIONS (TOTAL 40 MARKS)

QUESTION TWO (20 MARKS)

- a) Discuss the early systems of classification up to the time of Linneaus (10 marks)
- b) Discuss different types of herbaria and their uses (10 marks)

QUESTION THREE (20 MARKS)

Discuss the sources of taxonomic characters and give relevant examples in each case

QUESTION FOUR (20 MARKS)

Discuss five rules of International Code of Botanical nomenclature regarding naming of plants giving relevant examples in each case

QUESTION FIVE (20 MARKS)

Describe the floral characteristics and economic importance of family Papilionaceae with reference to specific examples