



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF SCIENCE IN BIOLOGY

SBT 301:TAXONOMY OF HIGHER PLANTS

DATE: 18/4/2019

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 the hierarchy of six main taxonomic ranks and give latin endings where applicable. (3 marks)
- c) Distinguish between the following terms: (1 mark each)
 - i. Nomenclature and Identification
 - ii. Qualitative and quantitative characters
 - iii. Homonyms and Heteronyms
- d) Outline three advantages of mounting herbarium specimen (3 marks)
- e) Describe the following terms (3 marks)
 - i. monophyletic
 - ii. Cladistic
 - iii. Phenetic classification

- f) Explain three ways in which specific epithets are derived (3 marks)
- g) State the alternative name of the following families and give an example in each case
 - i. Poaceae
 - ii. Brassicaceae
 - iii. Fabaceae
 - iv. Clusiaceae
 - v. Apiaceae
 - vi. Lamiaceae (3 marks)
- h) Outline three characteristics of family Solanaceae (3 marks)
- i) Explain adaptations of flowers to various animal pollinators (3 marks)
- j) Describe three advantages of scientific names over common names to scientist (2 marks)

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

QUESTION TWO (20 MARKS)

- a) Discuss the contributions of early scientist to the field of taxonomy up to the time of Carolus Linneaus (10 marks)
- b) Discuss different types of herbaria and their uses (10 marks)

QUESTION THREE (20 MARKS)

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

QUESTION FOUR (20 MARKS)

- a) Discuss five rules of International Code of Botanical Nomenclature regarding naming of plants (10 marks)
- b) Describe types of reproductive data important to a taxonomist (10 marks)

QUESTION FIVE (20 MARKS)

Using specific examples, describe the floral characteristics and economic importance of the family Papilionaceae