



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

DECEMBER SESSION EXAMINATION FOR

BACHELOR OF EDUCATION

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE: 24/4/2019

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 (20 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: (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) Define 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 (3 marks)
- i. Poaceae
 - ii. Brassicaceae
 - iii. Fabaceae
 - iv. Clusiaceae
 - v. Apiaceae,
 - vi. Lamiaceae
- 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

QUESTION TWO (20 MARKS)

- a) Discuss the contributions of early scientist to the field of taxonomy 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 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 or reproductive data important to a taxonomist (10 marks)

QUESTION FIVE (20 MARKS)

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

