



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF SCIENCE (BIOLOGY)

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE: 10/11/2020

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Use sketch diagrams to differentiate between the following characters states. (3 marks)
 - i) Imbricate and vexillary aestivation
 - ii) Diadelphous and syngenesious stamen
 - iii) Simple umbel and corymb inflorescence
- b)
 - i) State the alternative names of Papilionaceae (1 mark)
 - ii) How does the name above relate to the features of this family (2 marks)
- c) Explain three nomenclatural types used by taxonomist (3 marks)
- d) Explain palynology as a source of taxonomic characters (3 marks)
- e) Highlight the *Latin* endings of the following taxa (3 marks)
 - i) Order-
 - ii) Suborder-
 - iii) Family-
 - iv) Subfamily-
 - v) Tribe-
 - vi) Subtribe-
- f) Explain three ways in which specific epithets are derived (3 marks)
- g) Explain the role of breeding system in taxonomy (3 marks)

- h) Explain the following terms (3 marks)
- i) Monograph
 - ii) Taxonomic revision
- i) Outline the contributions of *John Hutchinson* to the field of taxonomy (3 marks)
- j) Explain how polyclave are used in constructing a taxonomic key (3 marks)

QUESTION TWO (20 MARKS)

Discuss the early systems of classification up to the time of Carolus Linneaus

QUESTION THREE (20 MARKS)

Discuss the techniques that a plant taxonomist applies when collecting, preserving and storing specimens for herbaria

QUESTION FOUR (20 MARKS)

Discuss five rules of International Code of Botanical nomenclature

QUESTION FIVE (20 MARKS)

Describe the floral characteristics and economic importance of Solanaceae and Graminaea