



MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**THIRD YEAR SECOND SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION EXTENSION
BACHELOR OF SCIENCE IN BIOLOGY
SBT 301: TAXONOMY OF HIGHER PLANTS**

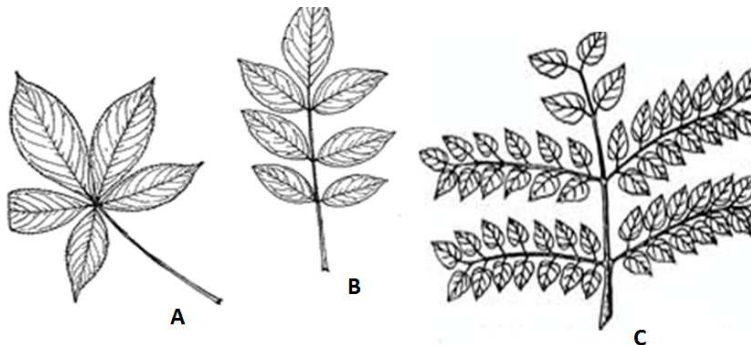
DATE: 13/12/2017

TIME: 11.00-1.00 PM

INSTRUCTIONS: Answer question ONE which is compulsory and any other TWO

QUESTION ONE

- a) Explain the use of synapomorphies in nomenclature. (3 marks)
- b) Describe a common procedure for preserving a green plant branch for future studies. (3 marks)
- c) List the main areas involved in plant cytotaxonomic studies. (3 marks)
- d) Distinguish a gymnosperm from an angiosperm. (3 marks)
- e) Name the leaf arrangements given below. (3 marks)



- f) Distinguish a glabrous leaf surface from one which is pubescent. (3 marks)
- g) State three major contributions of Dioscorides (40–90 AD) in plant taxonomy. (3 marks)
- h) Using an example of a genus, describe two characteristics of the family Nyctinaginacea. (3 marks)
- i) Giving examples, explain two main differences between lower and higher plants. (3 marks)
- j) Explain the meaning of the term “phylogeny”. (3 marks)

QUESTION TWO

- a) Explain five main plant nomenclature principles. (10 marks)
- b) Discuss five disadvantages of using the name “sweet potato” instead of *Ipomoea batata*. (10 marks)

QUESTION THREE

- a) Giving examples and illustrations. discuss how plant growth habits are used to classify plants. (10 marks)
- b) Using examples, describe the use of leaf physical properties in plant taxonomy(10 marks)

QUESTION FOUR

- a) Discuss the application of environmental location and use of plants in taxonomy. (10 marks)
- b) Discuss the main contributions of Linnaeus in plant taxonomy. (10 marks)

QUESTION FIVE

- a) Discuss the contributions of Theophrastus (c 370-285 BC) in plant taxonomy. (10 marks)
- b) Discuss main sources of higher plant taxonomic information used by scientists(10 marks)