



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION

SBT 301: TAXONOMY OF HIGHER PLANTS

DATE: 15/12/2021

TIME : 11.00-1.00 PM

INSTRUCTIONS

ANSWER ALL QUESTIONS IN SECTION A AND ANY OTHER TWO QUESTIONS IN SECTION B

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Distinguish between taxonomic characteristics and taxonomic characters. (3 marks)
- b) Differentiate between artificial and natural classification as used in plant taxonomy. (3 marks)
- c) Describe the two main types of keys used in identification of plant specimens. (3 marks)
- d) Explain the formation and structure of a pollen grain. (3 marks)
- e) Discuss the principle of priority as a rule in international code for botanical nomenclature (ICBN). (3 marks)
- f) Explain alternation of generations in flowering plants. (3 marks)
- g) Distinguish between microgametophytes and megagametophytes in flowering plants. (3 marks)
- h) Illustrate the structure and explain the role of sepals in angiosperms. (3 marks)
- i) Explain how different stamen and stigma maturation times inhibit self-pollination in flowering plants. (3 marks)
- j) Describe the relationship between inflorescences and pollination in higher plants. (3 marks)

QUESTION TWO (20 MARKS)

With specific examples, discuss the major taxonomic units used in classification of plants.

QUESTION THREE (20 MARKS)

- a) Discuss the main contributions of 5 major personalities in the development and history of plant taxonomy. (10 marks)
- b) Describe the process of double fertilization in flowering plants. (10 marks)

QUESTION FOUR (20 MARKS)

Discuss how flowering plants are adapted to the various modes of pollination.

QUESTION FIVE (20 MARKS)

Using examples, discuss the economic importance of major families of higher plants of East Africa.