MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SUPPLEMENTARY/SPECIAL EXAMINATION FOR

BACHELOR OF EDUCATION

SBT: 301 PLANT TAXONOMY

DATE: 14/3/2022 **TIME: 8:30 – 10:30 AM**

INSTRUCTIONS

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

SECTION A(COMPULSORY)

QUESTION ONE (30 MARKS)

a) With suitable examples explain the meaning of the term taxonomic characteristics (3 marks)

b) Explain the contributions of the following scientists to the development of plant taxonomy (3 marks)
   (i) Theophrastus (370–285 B.C.)
   (ii) Albertus Magnus (A.D. 1200–1280)
   (iii) Carl Linnaeus (1707–1778)

c) Describe the two types of dichotomous keys used in plant identification (3 marks)

d) By use of an example, distinguish between common names and scientific names as used in taxonomy of higher plants (3 marks)

e) Discuss how specific epithets are derived in binomial nomenclature (3 marks)

f) Explain the concept of alternation of generations in flowering plants (3 marks)

g) Distinguish between gametes and spores in plants (3 marks)

h) Discuss the structure and role of a flower in angiosperms (3 marks)

i) Explain how different stamen and stigma maturation times inhibit self-pollination in flowering plants. (3 marks)

j) Describe the importance of cross pollination in higher plants (3 marks)

QUESTION TWO

a) Explain the concept of taxa (3 marks)
b) With specific examples, discuss the major taxonomic units used in classification of plants (17 marks)

QUESTION THREE

a) Discuss plant characters that are considered during plant identification. (10 marks)
b) Describe the process of double fertilization in flowering plants. (10 marks)

QUESTION FOUR

Discuss alternation of generations in higher plants (20 marks)

QUESTION FIVE

Discuss the economic importance of Ten major families of higher plants of East Africa (20 marks)