



**MURANG'A UNIVERSITY COLLEGE**

*(A constituent college of Jomo Kenyatta University of Agriculture and Technology)*

**SCHOOL OF PURE AND APPLIED SCIENCE**

**CLASS:** AS/BIO/14D

**UNIT CODE** ASB 1108

**UNIT TITLE:** TAXONOMY ECOLOGY SOIL STUDY

**DURATION:** 3 HOURS

**DATE:** 6<sup>TH</sup> AUGUST 2015

**SPECIAL EXAMINATION**

**INSTRUCTIONS**

This paper consists of two sections A and B

Attempt all questions in section A and ANY TWO in section B

**SECTION A**

1. Distinguish between Monocotyledons and Dicotyledons (4 marks)
2. Explain
  - a) Why organisms of the same species may compete
  - b) The possible consequences of such competition (4 marks)
3. Describe the factors that have contributed to the decrease of algae(plankton) populations in fresh water ecosystems in Africa. (4 marks)
4. State the
  - a) Aims of taxonomy (2 marks)
  - b) Reasons for using Latin in writing scientific names. (2 marks)
5. Draw a labeled diagram of a moss gametophyte (4 marks)
6. Draw a dichotomous key using suitable morphological features for the following organisms,
  - a) Mammalian
  - b) Frog
  - c) Reptile
  - d) Bird (4 marks)

8. Describe the following types of clay (4marks)

a)Kaolinites

b)Montmorillonite

9. a) Define soil structure (1mark)

b) Describe the three structural classes of soil and in each case, the any one characteristic

(3marks)

10. Explain the role of parent rock in soil formation (4marks)

**SECTION B ( 60 marks)**

11. Classify plants into various subgroups up to class level. (20 marks)

12. Describe the feeding inter relationships between organisms in an ecosystem. (20 marks)

13. Describe the life cycle of Pteridophyte (the ferns). (20 marks)

14. a) Differentiate between the classes Angiospermae and Gymnospermae (12 Marks)

b) state the general characteristics of cells of the following phylum

i) Tracheophyta (5 marks)

ii) Chordata (3marks)

15. Discuss the Nitrogen cycle (20marks)