



27

EMBU UNIVERSITY COLLEGE
(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)

SECOND SEMESTER EXAMINATIONS 2013/2014

SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF MASTER OF
SCIENCE IN AGRICULTURAL RESOURCE MANAGEMENT

ACS 605: PLANT NUTRITION AND SOIL FERTILITY

DATE: APRIL 10, 2014

TIME: 11.00AM – 2.00PM

INSTRUCTIONS:

Answer ANY FOUR Questions.

QUESTION ONE

- a) Discuss the following in relation to plant nutrition and soil fertility (15 marks)
- i.) CEC
 - ii.) Isomorphic substitution
 - iii.) Mineralization
 - iv.) Nitrification
 - v.) Soil structure
- b) Explain why the pH of soil declines when fertilized with ammonium based fertilizers (10 marks)

QUESTION TWO

- a) Explain the major soil clay types and state their effects on plant nutrition (15 marks)
- b) Explain the importance of mycorrhizae in relation to plant nutrition (10 marks)

QUESTION THREE

Discuss the major constraints associated with the tropical soils. How can these constraints be overcome? (25 marks)

QUESTION FOUR

Discuss factors governing plant nutrient uptake from the soil and explain both ammonium and nitrate nutrition (25 marks).

QUESTION FIVE

Distinguish between the general visual symptoms of nitrogen and phosphorus deficiencies in plants. Indicate how these deficiencies can be overcome (25 marks)

---END---