



**KENYATTA UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2011/2012**

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN**  
**INTEGRATED SOIL FERTILITY MANAGEMENT (ISFM)**  
**KRM 502: SOIL FERTILITY AND EVALUATION**

**DATE: THURSDAY, 29<sup>TH</sup> MARCH 2012**

**TIME: 9.00 A.M. – 12.00 P.M.**

**INSTRUCTIONS: Answer Question ONE and any other THREE Questions.**

1.
  - (a) Identify common P fertilizer sources in East African region. (3 marks)
  - (b) What are the factors affecting the choice of P sources? (4 marks)
  - (c) Why is fertilizer placement important? (2 marks)
  - (d) Discuss the factors which influence fertilizer application in field crops production. (8 marks)
  - (e) Under what conditions would you consider using a slow release N fertilizer? (3 marks)
  - (f) Using equations, show how nitrogen fertilizers acidify soils? (4 marks)
  - (g) What determines whether a nutrient element is essential or not? (3 marks)
  - (h) What essential elements have their availability strongly affected by soil pH? At what pH ranges are they unavailable? (3 marks)
2. Briefly discuss the methods you would use to replenish soil N. in smallholder farms in Kenya. (10 marks)
3. Discuss the benefits of soil organic matter and explain why burning crop residues in the field is discouraged. (10 marks)
4. State and explain how any 5 soil fertility indicators could be used to predict soil fertility. (10 marks)
5.
  - a) What is meant by N uptake efficiency? (2 marks)
  - b) What are the factors that lead to low N uptake efficiency? (4 marks)
  - c) Explain why adding greater amounts of fertilizer do not necessarily lead to greater profits? (4 marks)