



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN
LAND AND WATER MANAGEMENT AND INTEGRATED SOIL FERTILITY
MANAGEMENT

KRM 500: SOIL GENESIS AND CLASSIFICATION

DATE: 26TH MARCH 2012

TIME: 9.00 A.M. – 12.00 P.M.

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER THREE.

1.
 - a) State the conditions under which you would expect the occurrence of the following:
 - i) A soil profile with ABgCR sequence of horizons. (4 marks)
 - ii) A soil profile with AEBCR sequence of horizons. (4 marks)
 - iii) A soil profile with BCR sequence of horizons. (2 marks)
 - b) Discuss the most effective chemical processes of soil formation in the tropics. (10 marks)
 - c) Discuss the following:
 - i) Soil as a **living** skin of the planet Earth (5 marks)
 - ii) Soil as a **leaving** skin of the planet Earth (5 marks)
2. Visualise a slope in the landscape near your home area. Discuss how soil colours, horizon thickness and drainage would likely change along the toposequence of soils on this slope. (10 marks)
3. Discuss the formation and management of soils classified as Gleysols. (10 marks)
4.
 - a) State the fundamental difference between pisoplinthite and petroplinthite. (2 marks)
 - b) Discuss the management and use of soils classified as Plinthosols. (8 marks)
5. Assume that you are planning to buy a 10-ha site on which to start an orchard irrigation scheme. Explain step by step, how you could use soil survey information to help determine whether the prospective site is suitable for the intended purpose. (10 marks)
