



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF AGRICULTURE AND FOOD SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN SOIL
SCIENCES
FOURTH YEAR FIRST SEMESTER 2017/2018 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: ALS 3416

COURSE TITLE: HIGHLAND SOIL MANAGEMENT

EXAM VENUE: LR 8

STREAM: (BSC SOIL)

DATE: 20/12/17

EXAM SESSION: 9.00 – 11.00 AM

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two questions in Section B**
 - 2. Candidates are advised not to write on question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
-

SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. List four soil forming factors that vary in time and space. (2 marks)
2. List three key steps involved when distinguishing the major soil groupings based on FAO-UNESCO classification . (3 marks)
3. Describe three broad classifications of the Kenyan highlands. (6 marks)
4. Explain why some highland soils have good permeability and favorable infiltration rates. (3 marks)
5. Describe the influence of topography and vegetation on highland soils. (6 marks)
6. Citing examples, explain how soil processes and properties differ between sites with extremely low and high temperatures within the highlands. (6 marks)
7. Moisture stress conditions makes some highland soils extremely difficult to manage under low-input conditions. Explain. (4 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

8. Discuss the genesis and morphology of five highland soils. (20 marks)
9. A) Characterize four major agro-climatic zones of the Kenyan highlands based on altitude and climatic characteristics. (8 marks)
B) Describe the Conservation and management of highland soils. (12 marks)
10. Write an essay on limitation of highland soils to crop production. (20 marks)
11. Citing relevant examples, differentiate the chemical characteristics between the soils from the highland east of the rift valley and west of the rift valley. (20 marks)