



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**FOURTH YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN SOIL SCIENCE**

**2017/2018 ACADEMIC YEAR**

**REGULAR**

**COURSE CODE: ALS 3424**

**COURSE TITLE: CLIMATE CHANGE AND SOIL PLANT RELATIONSHIPS**

**EXAM VENUE**

**STREAM: BSc SOIL SCIENCE**

**DATE:**

**EXAM SESSION**

**TIME: 2HOURS**

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**INSTRUCTIONS**

- 1. Answer ALL questions in section A and ANY other two questions in section B**
- 2. Candidates are advised to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**SECTION A [30 Marks]**

**Answer All Questions in this Section**

1. Define the following terms
  - (a) Climate change. (2 marks)
  - (b) Diagenesis (2 marks)
  - (c) Soil resilience (2 marks)
2. Discuss the effects of higher Carbon (iv) oxide on soil fertility (10 marks)
- 3 (a) Describe the process of isomorphous substitution (4 marks)
  - (b) Describe the **Mitch and Gosselink** equation (6 marks)
4. Explain the role of climate change and its influence on soil erosion and weathering. (4 marks)

**SECTION B [40 MARKS]**

**ANSWER ANY TWO QUESTIONS IN THIS SECTION.**

5. Discuss the factors that cause changes in rising sea level in coastal areas (20 marks)
6. Describe the soil profile using **USDA** taxonomy. (20 marks )
7. Explain the effects of climate change on rainfall patterns (20 marks)