



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

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

2017/2018 ACADEMIC YEAR

REGULAR

COURSE CODE: ALS 3413

COURSE TITLE: FOREST SOILS ECOSYSTEMS

EXAM VENUE: LR 10

STREAM: BSc. (Soil Science)

DATE: 19/12/17

EXAM SESSION: 9.00 – 11.00 AM

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 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 [30 MARKS]

1. Describe three factors associated with adsorption of pathogens to soil. (3 Marks)
2. Define carbon sequestration and identify its role in climate change mitigation (3 marks)
3. Identify three factors that complicate ecosystem management decisions (3 Marks)
4. Outline three classifications of soil organisms based on their regulation of ecosystem Services (3 marks)
5. Describe qualitative and quantitative valuation of soil ecosystem services (3 marks)
6. Explain the influence of forest on edaphic conditions (3 Marks)
7. Identify three roles of biodiversity as an ecosystem service (3 Marks)
8. Define the terms forest, Bioremediation and bioenergy (3 Marks)
9. Describe three indirect uses of forests (3 Marks)
10. State three cultural and spiritual services provided by soils (3Marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

1. Define the term ecosystem service and discuss the four categories of soil ecosystem Services. (20 Marks)
2. a) Explain why economic valuation of forest Ecosystem services is important (4 marks)
b) Discuss the various categories of Total Economic Value (TEV) of forest ecosystem Services (16 Marks)
3. Describe the various goods and services provided by the forests (20 Marks)
4. Discuss the impact of ozone on ecosystem services (20 Marks)