

**CHUKA**

**UNIVERSITY**



**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN ENVIRONMENTAL SCIENCE**

**ENSC 451: MANAGEMENT OF ARID AND SEMI ARID LANDS**

**STREAMS: BSC. ENSC**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 21/09/2021**

**8.30 A.M. – 10.30 A.M.**

**INSTRUCTIONS:**

- **Answer all questions in section A and any two in section B**
- **Do not write anything on the question paper**

**SECTION A (30 MARKS)**

1. Briefly describe the characteristics of Arid and semi arid lands. (4 marks)
2. Explain the importance of Arid and Semi Arid lands to the economic development in Kenya. (6 marks)
3. Briefly explain two main land degradation processes in the Arid and Semi Arid lands, highlighting the observable indicators in the field. (6 marks)
4. Write short notes in the following technologies used in the management of Arid and Semi Arid lands
  - a) Retention ditches (4 marks)
  - b) Conservation tillage (4 marks)
5. Briefly describe the characteristics and best management practices of the following soil types found in the Arid and Semi Arid lands.
  - a. Arenosols (3 marks)
  - b. Acrisols (3 marks)

**SECTION B (40 MARKS)**

6. Discuss five in-situ water conservation strategies in Arid and Semi Arid lands. (20 marks)
  7. Discuss the approaches you would take to manage salt affected soils in the Arid and Semi-Arid lands. (20 marks)
  8. Discuss the role of community institutions in rehabilitation of degraded Arid and Semi Arid lands. (20 marks)
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