

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE

ENSC 451: MANAGEMENT OF ARID AND SEMI ARID LANDS

STREAMS: BSC (NARE) Y4S1

TIME: 2 HOURS

DAY/DATE: MONDAY 02/12/2019

2.30 P.M. – 4.30 P.M.

**INSTRUCTIONS:**

- Answer ALL questions in section A and any other TWO in section B
- Do not write anything on the question paper

**SECTION A (30 MARKS)**

- Q1. Write short notes on the following terms as used in the management of Arid and Semi-Arid lands:
- (a) Meteorological drought [2 marks]
  - (b) Resilience [2 marks]
  - (c) Temperature Anomalies [2 marks]
- Q2. Explain various environmental issues or challenges facing the Dry East Asia community and the adaptations measures being undertaken to overcome them. [4 marks]
- Q3. Outline the challenges facing Sahel region of Africa and the strategies being used by the local communities towards adaptations. [4 marks]
- Q4. Discuss three International institutional framework/convention towards Arid and Semi-Arid Lands. [6 marks]
- Q5. Explain six abiotic resources found in ASALs of the world [6 marks]
- Q6. List various species used in rehabilitating degraded dry lands [4 marks]

**SECTION B (40 MARKS)**

Q7. (a) Discuss the contribution of climate change to insecurity in the ASALs of Kenya. [10 marks]

(b) Using a relevant example in the ASALs, briefly describe the tragedy of the commons concept as put forward by Garret Hardin in 1968. [10 marks]

Q9. You have been contracted by County government of Kitui as a consultant to provide guidance on how to sustainably manage the county resources. Provide a detailed response on recommendations you would make towards making the land resource less vulnerable to climate change. [20 marks]

Q9. (a) Describe various water harvesting techniques for crop production in dry areas. [10 marks]

(b) Discuss the role of indigenous communities in the rehabilitation and restoration of dry lands. [10 marks]

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