

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

ENSC 401: MANAGEMENT OF ARID AND SEMI-ARID LANDS

STREAMS: ENSC Y4S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 5/12/2018

8.30 A.M - 10.30 A.M.

INSTRUCTIONS:

- Answer Question ONE in Section A and any TWO Questions in Section B
- Do not write anything on the question paper

SECTION A: [30 MARKS]

1. Write short notes on the following terms as used in the management of Arid and Semi-Arid Lands;
 - (a) Aridity index [2 Marks]
 - (b) Aestivation [2 Marks]
 - (c) Meteorological drought [2 Marks]
2. Briefly explain why there is renewed interest in the development of the arid and semi arid lands of Kenya. [4 Marks]
3. Explain how soil erosion by water and wind can be reduced in the ASALs. [6 Marks]
4. Outline five abiotic resources found in ASALs of the world. [5 Marks]
5. Account for the distribution of the world's main desert areas. [5 Marks]
6. List four grass species used in rehabilitating degraded dry lands. [4 Marks]

SECTION B: [40 MARKS]

7. (a) Discuss the contribution of climate change to insecurity in the Kenyan ASALs. [10 Marks]
- (b) Using relevant example in the ASALs, briefly describe the Tragedy of the commons concept as put forward by Garret Hardin in 1968. [10 Marks]

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8. (a) Water harvesting for crop production is central to successful dry land farming. Describe four 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]
9. You have been contracted by the County Government of West Pokot as a lead consultant to provide guidance on how to improve livestock production in order to make the County food secure. Provide a detailed response. [20 Marks]
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