



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2013/2014**

FOURTH YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN EARTH SCIENCE WITH  
INFORMATION TECHNOLOGY

(MAIN CAMPUS)

**NGA 412: WATER RESOURCES IN ARID AND SEMI ARID  
AREAS**

Date: 11<sup>th</sup> April, 2014

Time 11.15 a.m. – 1.30 p.m.

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**INSTRUCTIONS:**

- Answer Question ONE and any other TWO questions.
- Sketch maps and diagrams should be used whenever appropriate.

## NGA 412: WATER RESOURCES IN ARID AND SEMI ARID AREAS

1. a) Write precise notes on the following:
  - i. Aridity index (6 marks)
  - ii. Flash floods (6 marks)
- b) Discuss the relationship between desertification and climate change. (8 marks)
- c) Examine strategies to be put in place in ASAL regions to enhance management and sustainable exploitation of arid environments. (10 marks)
2. a) 'Pastoralism is a means of conservation in arid and semi arid areas'. Discuss (12 marks)
- b) Examine the challenges faced in development and successful application of hydrological models in arid and semi arid areas. (8 marks)
3. a) Examine the main water resource challenges in ASAL of the developing countries. (10 Marks)
- b) Examine factors that control weathering in arid and semi arid regions. (10 marks)
4. a) Account for the current status and trends of droughts and desertification in the world. (10 marks)
- b) Discuss the key aridsol classifications and their importance in management of water resource in arid and semi arid zones. (10 marks)
5. a) Explore the major characteristics of precipitation in arid and semi-arid zones. (10 marks)
- b) Account for the hydrological parameters that characterize a drought. (10 marks)

6. a) Examine the importance of soil properties in determination of water management in arid and semi arid regions. (8 marks)

b) Discuss the strategies employed to improve access to water resources in deserts and dry lands? (12 marks)