



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2016/2017**

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR DEGREE  
OF BACHELOR SCIENCE IN CLIMATE CHANGE AND  
DEVELOPMENT WITH INFORMATION TECHNOLOGY**

**MAIN CAMPUS**

**NCA 411: WATER MANAGEMENT IN A CHANGING CLIMATE**

Date: 6<sup>th</sup> December, 2016

Time: 3.30 - 6.30pm

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**INSTRUCTIONS:**

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



1. a) Explain how climate change may affect precipitation ( 5 marks)
- b) Outline the components of Catchment Management Strategies used to manage river basins in Kenya (8 marks)
- c) Discuss the global paradigm shift in water management ( 6 marks)
- d) Briefly discuss the opportunities available to invest in water resource management to deal with water resources in the face of climate change ( 5marks)
- e) Discuss the importance of stakeholders involvement in water resource management in the face of climate change ( 6marks)
  
2. a) Discuss the adaptive options available to the government of Kenya in managing water in the face of climate change ( 10 marks)
- b) Briefly explain the effect of rising global temperature on agricultural water resource in different parts of the world. (10 marks)
  
3. a) Discuss briefly the water conservation techniques which may be adapted by African countries to cope with water shortages caused by climate change (20 marks)
- b) Discuss the main actors in water resource management in Kenya ( 10marks)
  
4. Discuss the opportunities available to invest in water resource management to deal with water resources in the face of climate change ( 20 marks)
  
5. a) Explain the five specific objectives outlined in the ministry of water and irrigation strategic plan of 2009 (10marks)
- b) Explain how water management is a climate change mitigation measures ( 10 marks)
  
6. Briefly explain the impacts of climate change on water management in agriculture sector ( 10mark)