



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2015/2016**

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

**MAIN CAMPUS**

**NGA 407: GIS APPLIED TO WATER RESOURCES**

Date: 25<sup>th</sup> April, 2016

Time: 11.00 - 1.00 pm

---

**INSTRUCTIONS:**

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



**NGA 407: GIS APPLIED TO WATER RESOURCES**

1. (a) Discuss the benefits of a GIS in the management of water resources.  
15 marks
- (b) Examine the general procedures required prior any GIS analysis  
15 marks
2. Discuss the use of GIS in ground water management.  
20 marks
3. Explain requirements for the establishment of a GIS system for the national irrigation board.  
20 marks
4. With emphasis on water resources, discuss how the following analysis are applicable
  - (a) Interpolation 7 marks
  - (b) Buffering 6 marks
  - (c) Proximity 7 marks
5. Examine why GIS has become an integral tool for modeling in water resources management.  
20 marks
6. Discuss the use of GIS is determining the most suitable location for waste water infrastructure.  
20 marks