



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2015/2016

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

MAIN CAMPUS

**NGA 312: PHYSICAL AND CHEMICAL MONITORING OF
WATER QUALITY**

Date: 19th 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 312: PHYSICAL AND CHEMICAL MONITORING OF WATER QUALITY

1. a. Examine anthropogenic activities that impact on water quality. (5 marks)
b. Explain the significance of various types of sampling stations. (6 marks)
c. Explain the principal elements of a water quality study plan. (7 marks)
d. 'Selection of water quality variables to determine the pollution conditions in a catchment is important in water assessment studies'. Discuss (12 marks)
2. a. Discuss the health challenges associated with poor water quality. (8 marks)
b. 'Preliminary survey is critical in water quality monitoring programme'. Discuss. (12 marks)
3. a. Discuss major factors necessary for description of the water quality monitoring area. (10 marks)
b. Examine factors that determine frequency and timing of sampling during water quality monitoring exercise. (10 marks)
4. a. Explain the procedure for sampling from hand dug wells. (5 marks)
b. Explain considerations necessary to assure accuracy and precision of results during a field water quality monitoring exercise. (7 marks)
c. Discuss main limitations of conventional water sampling. (8 marks)
5. Explain the process of determining Dissolved Oxygen in the field using Winkler method. (20 marks)
6. a. Explain the significance of using a Water Quality Index in water monitoring study. (8 marks)
b. Examine the various types of water samplers and their uses. (6 marks)
c. Examine various types of composite samples in water quality monitoring. (6 marks)