



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN FISHERIES AND
AQUACULTURE AND BACHELOR OF SCIENCE IN AQUATIC
RESOURCES CONSERVATION AND DEVELOPMENT WITH
INFORMATION TECHNOLOGY**

MAIN CAMPUS

**AFN 305: HYDROLOGY, CLIMATOLOGY AND CLIMATE
CHANGE**

Date: 10th December, 2016

Time: 3.30 - 6.30 pm

INSTRUCTIONS:

- Answer ALL the questions in SECTION A and in SECTION B answer question 9 and any other THREE questions.

SECTION A: Answer ALL Questions in this section (40 Marks)

1. Briefly, describe the hydrological cycle. (5 marks)
2. Outline the effects of greenhouse gases. (5 marks)
3. Climate change exerts societal impacts. Briefly comment. (5 marks)
4. Using illustrations, distinguish between mitigation and adaptation. (5 marks)
5. Briefly comment on the upward flow of groundwater against the force of gravity. (5 marks)
6. Outline the steps taken in groundwater treatment. (5 marks)
7. Use a well labeled diagram to describe: a water table, saturated zone, unsaturated zone, a capillary fringe and soil moisture belt. (5 marks)
8. Describe the following: (5 marks)
 - i. Groundwater depletion
 - ii. Subsidence
 - iii. Saltwater intrusion

SECTION B:

Answer QUESTION 9 (compulsory), and any other THREE Questions in this Section.

9. Aerosols exert either a warming or cooling effect. Discuss. (9 marks)
10. Use illustrations to distinguish between bioremediation and chemical remediation. (7 marks)
11. Describe climate and weather resilience with reference to: (7 marks)
 - i. Electricity generation.
 - ii. Transportation
12. Describe the impacts of climate change in relation to rising sea level and melting ice and snow. (7 marks)
13. Discuss the techniques used in flood control. (7 marks)

END