MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE WITH INFORMATION TECHNOLOGY

MAIN CAMPUS

NES 406: WATER QUALITY ASSESSMENT & MONITORING

Date: 3rd December, 2016 Time: 12.00 - 3.00pm

INSTRUCTIONS:

- Answer Question ONE and any other TWO.

1. (a) Explain the monitoring objectives as normally used in designing a sampling network for assessing water quality. (6mks)

(b) Discuss the consequences of a deteriorating water quality due to various anthropogenic uses. (9mks)

(c) Explain the principle elements of a study plan for a water quality monitoring programme. (7mks)

(d) Explain the quality control measures that may be taken into account during field sampling and laboratory analysis of a chosen water quality parameters.(8mks)

2. (a) Explain the common biological water quality indicators that ought to be observed within a sampling area. (4mks)
(b) (i)Explain the different categories of the biological water monitoring. (4mks)
(ii) Describe how you would assess the status of a given swamp. (12mks)

3. (a) Describe the important natural processes affecting tropical lakes and reservoirs. (6mks)
(b)Explain how you would establish stream flows. (9mks)
(c) Prepare a field note book template for recording observation data. (5mks)

4. (a) Explain the importance of sampling and analyzing groundwater. (4mks)
(b) Write explanatory notes about:
(i) confined and unconfined aquifers. (8mks)
(ii) sampling techniques for sediment load. (8mks)

5. (a) Explain briefly the:
(i) structure of reporting a monitoring data. (4mks)
(ii) importance of reporting a water quality monitoring data. (4mks)
(b) Discuss plausible solutions to the myriad concerns in water resource managements affecting Kenya today. (12mks)