MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

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

MAIN CAMPUS

NCA 406: ADAPTATION OF COASTAL AND MARINE ECOSYSTEM TO CLIMATE CHANGE

Date: 6th December, 2016   Time: 12.00 - 3.00 pm

INSTRUCTIONS:

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

Q1. a. Explain how the ecosystems in the following coastal features are vulnerable to climate change:

    i.   Beaches   (4marks)

    ii.   Sand dunes   (4marks)

    iii.   Estuaries   (4marks)

    iv.   Coastal wetlands   (4mark)

b. Explain the adaptation of coastal and marine ecosystems to carbon dioxide (CO_2) uptake
(7marks)

c. Explain how management of fish stocks has been used to adapt to the impacts of Climate Change
(7marks)

Q 2.   (a) Discuss the human related drivers which my increase the vulnerability of coastal systems to the impacts of climate changes   (10marks)

    (b) Discuss how human systems in the coastal areas may be adapted to climate change
(10marks)

Q 3. Explore ways in which the following coastal systems may be adapted to climate changes

    (a) Coral reefs   (5marks)

    (b) Estuaries and lagoons   (5marks)

    (c) Sea grasses   (5marks)

    (d) Rocky Coasts   (5marks)

Q4. a. Discuss the impact of rise in Sea-Surface Temperature (SST) on the coral reefs.
(10marks)

    b. Discuss how the coral reefs are adapting to these changes in Sea-Surface Temperature (SST)   (10marks)

Q5 . Describe how the following are used as a coastal adaptation to climate change

    (a) Ocean ranching   (5marks)

    (b) Aquaculture   (5marks)

    (c) Explain how developing countries may adapt to the impacts of Climate Change on the coral reefs   (10marks)

Q 6. a. Explain how sea mammals may be adapted to the climate change   (10marks)
    b. Explain how coastal birds may be adapted to the effects of climate change (10marks)