# TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied & Health Sciences

Department of Environment & Health Sciences

University Examination for the Degree of Bachelor of Science in Marine Resource Management

BSMR 14S/YEAR 2/SEMESTER 2

Code: AES 4212: MARINE BIOLOGICAL COMPLEXITY PAPER 1

SEMESTER EXAMINATION

SERIES: MAY/2016

TIME: 2HRS

**Instructions to Candidates**

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions

**This paper consists of one printed pages**

**QUESTION ONE (30 MARKS)**

a) Name the sources of Dissolved Organic Carbon (DOC) in a microbial loop of a coral reef ecosystem (5 mks)
b) State the major elements associated with the occurrence of mangrove associate species (4 mks)
c) Briefly discuss the effects of sedimentation on sea grasses (5 marks)
d) State the breathing adaptation mechanisms for crustacean species in a mangrove forest (4 mks)
e) Briefly discuss the role of algae in coral reef formation (5 marks)
f) State the physiological adaptations of mangroves (4 marks)
g) (i) Define the term hidden values in coastal ecosystems (1 mark)
(ii) Briefly explain how the coastal ecosystems provide hidden values along coastal areas (2 marks)

**QUESTION TWO (20 MARKS)**

Explain why coral reefs harbor the highest diversity of fish communities than any environment on earth (20 marks)

**QUESTION THREE (20 MARKS)**

Discuss the structure and adaptations of mangroves in the tropical coastal regions (20 marks)

**QUESTION FOUR (20 MARKS)**

Explain the limiting factors for distribution and species diversity of corals in tropical and sub-tropical coastal regions (20 marks)

**QUESTION FIVE (20 MARKS)**

Discuss the ecological importance or functions of sea grasses in coastal regions (20 marks)