

# 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)