



# **TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES  
DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

## **UNIVERSITY EXAMINATION FOR: BACHELOR OF SCIENCE IN MARINE RESOURCE MANAGEMENT**

**BSMR/15S/YEAR 2/ SEMESTER 2**  
**AES 4209: INTRODUCTION OCEANOGRAPHY**  
**SPECIAL SUPPLEMENTARY EXAMINATION**  
**SERIES: SEPT. 2017**  
**TIME: 2 HOURS**

### ***Instructions to Candidates***

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions.

***This paper consists of two printed pages.***

***Mobile phones are NOT allowed in the examination room***

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### **QUESTION ONE (30 MARKS)**

- a). Explain the term El Niño? (1 marks)
- b). State two properties that cause thermohaline circulation? (2 marks)
- c). What is the name for tides that occur just after new moon and full moon, when the gravitation attraction of the sun and moon act in a direct line? (2 marks)
- d). What is the name for the submerged edges of continents with gradual slopes?  
(2 marks)
- e). State two basic types of bacteria that are in aquatic environment? (4 marks)
- f). State THREE methods used in Shoreline Protection? (4 marks)
- g). Name three main factors that influence the height of a wind generated ocean wave.  
(3 marks)

h). Explain what controls the direction of ocean currents? (4 marks)

i). Explain the dangers about plastic in oceans? (3 marks)

j). Name the three properties that must be known to determine the density of sea water. (3 marks)

### **QUESTION TWO (20 marks)**

State how the climate change impact on the oceans affects our economy? (20 marks)

### **QUESTION THREE (20 marks)**

Explain FIVE top threats facing our oceans? (20 marks)

### **QUESTION FOUR (20 marks)**

Discuss FIVE future challenges on impacts of climate change? (20 marks)

### **QUESTION FIVE (20 marks)**

Discuss, why oceans are important to human beings? (20 marks)