



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MARINE RESOURCE MANAGEMENT

BSMR 15S/YEAR 3/SEMESTER 1

AES 4304: BIOLOGICAL OCEANOGRAPHY

SPECIAL/ SUPPLEMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

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

QUESTION ONE (30 MARKS)

- a). Explain the term El Niño (1 mark)
- b). Explain how organisms protect themselves from predators (2 marks)
- c). Define the term Zooplankton (1 mark)
- d). State why do people study oceanography (2 marks)

e). Briefly describe algal bloom (3 marks)

f). Explain why nekton are important to the biological community of estuaries (4 marks)

g). Does the sea have "seasons"? On land leaves fall in autumn. State the signs of the seasons in the ocean indicating what happen during each season (3 marks)

h). Why are the tropical oceans a lighter blue color while the temperate oceans are a much darker blue (5 marks)

i). Explain what pelagic community live in Mombasa Tudor Creek in Western Indian Ocean (5 marks)

j). Briefly describe the formation of an Atoll (4 marks)

QUESTION TWO (20 marks)

Students apply the scientific method to probe possible reasons behind declining marine iguana populations in the Lamu Island. Initially students are given rudimentary information and encouraged to generate wide-ranging hypotheses. Students are then given further information to help them refine their initial hypotheses into single, testable statements. As the case progresses, students shift to an examination of experimental methods and data interpretation. Over the course of the case, they utilize both inductive and deductive reasoning in developing their conclusions about the factors influencing marine iguana populations.

Describe Marine habitats and where marine iguana populations make a living in the Lamu Island (20 marks)

QUESTION THREE (20 marks)

a. State Five factors that shape the structure of the community (10 marks)

b. Explain how plankton are investigated scientifically (10 marks)

QUESTION FOUR (20 marks)

Assume that you are working on a university project on marine biology. Explain why there exists most life on the continental shelf (20 marks)

QUESTION FIVE (20 marks)

a. Discuss the concept Large Marine Ecosystems (10 marks)

b. State the factors affecting the water temperature of Mombasa Tudor Creek in Western Indian Ocean (10 marks)