



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2020 TRIMESTER**

**FACULTY OF SCIENCE**

**DEPARTMENT OF BIOLOGY**

**REGULAR PROGRAMME**

**BIO 403: MARINE BIOLOGY**

**Date: April 2020**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and any other TWO Questions**

- Q1. a) Make a distinction between the following:
- i. Neap tide and spring tide **(3 marks)**
  - ii. Nekton and plankton **(2 marks)**
- b) Explain why the neritic zone is highly productive and state the problem encountered by organisms in this zone **(3 marks)**
- c) i) What is global warming? **(2 marks)**  
ii) Briefly discuss any two ways by which this process is a threat to marine ecosystems. **(3 marks)**
- d) What is Coriolis effect? Explain how it influences winds blowing in the north and in the south hemispheres

**(3**

**marks)**

- e) A student at Gazi Bay used the Light and Dark Bottle method to determine primary productivity. The following oxygen levels in mg per litre were recorded:

	Transparent bottle	Dark bottle
Initial, 6.00 am	2.88	2.88
Final, 9.00 am	3.02	2.45

- i) Account for the difference in final oxygen levels in the transparent and dark bottles **(3 marks)**
- ii) Calculate the gross primary productivity that the student obtained **(3 marks)**

- f) By use of a well-labelled diagram only illustrate the principal classifications of the marine water mass **(6 marks)**
- g) State the importance of upwelling in marine waters **(2 marks)**
- Q2. a) Describe how mangroves are adapted to the conditions of life in their environment **(6 marks)**
- b) Discuss the importance of mangroves **(14 marks)**
- Q3. Describe environmental conditions in soft-bottom shores and giving examples discuss adaptations of animals for survival in such shores. **(20 marks)**
- Q4. a) Outlining the variety of coral reefs, describe coral reef formation **(10 marks)**
- b) Discuss threats to coral reef ecosystems **(10 marks)**
- Q5. a) What are seaweeds? **(5 marks)**
- b) Discuss the importance of seaweeds. **(15 marks)**

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