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*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2021 / 2022 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER**  
**MAIN EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY AND BACHELOR'S  
DEGREE IN EDUCATION AND EXTENSION**

**COURSE CODE: SBT 422**

**COURSE TITLE: AQUATIC BOTANY**

**DATE: 21<sup>ST</sup> JANUARY 2022**

**TIME: 8.00 – 10.00 AM**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

**TIME: 2 Hours**

This paper consists of 3 printed pages. Please Turn Over



**KIBU observes ZERO tolerance to examination cheating**

## QUESTION 1

- a) State the **major** aquatic biomes giving examples in each case (2 Marks)
- b) Explain **three** adaptations of hydrophytes (3 Marks)
- c) i. Illustrate the vertical profile of temperature and light in a thermally stratified lake and identify the following parts: epilimnion, hypolimnion, metalimnion and thermocline. (5 Marks)
- ii. Comment on temperature variation in warm monomictic lakes (2 Marks)
- d) State the meaning of each of the following terms: (3 Marks)
- i. Estuaries
  - ii. Fucoxanthin
  - iii. Chemotrophs
- e) Compare the Cyanophyta and Chlorophyta based on the following attributes. (4 Marks)
- i. Cell motility
  - ii. Reproduction
  - iii. Distribution
  - iv. Dominant accessory pigments
- f) Distinguish between pelagic zone and benthic zone (2 Marks)
- g) State **two** economic importance of algae and sea grasses (2 Marks)
- h) Identify main economic values of the saline lakes of East Africa. (2 Marks)

i) Describe the extent and major characteristics of the littoral zone (3 Marks)

j) Explain how primary productivity is measured in an aquatic ecosystem  
(2 Marks)

## **QUESTION 2**

Describe ways of conserving and managing aquatic ecosystem (20 Marks)

## **QUESTION 3**

Discuss human activities that has contributed to depletion of water sources  
(20 Marks)

## **QUESTION 4**

Explain the characteristics and types of running water. (20 marks)

## **QUESTION 5**

Describe the phytoplankton movement in standing waters (20 Marks)