INTERNATIONAL UNIVERSITY OF EAST AFRICA

'Learning to Succeed'

FACULTY OF BUSINESS MANAGEMENT

END OF SEMESTER EXAMINATIONS - APRIL 2025

PROGRAMME: BTHM

YEAR/SEM: YEAR 1/SEMESTER 1

COURSE CODE: BTHM 1103

NAME: PLANT ECOLOGY

DATE: 2025-04-14

TIME: 2:00-5:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

Section A Section A is compulsory

Question 1:

Kibale National Park in western Uganda is a tropical rainforest with a diverse array of plant species. The park's unique climate and environmental conditions have led to the evolution of various leaf adaptations in its plant species. The park's tropical rainforest is characterized by high temperatures, high humidity, and intense sunlight. To cope with these conditions, plants have developed specialized leaves with adaptations such as: - Large leaf size to maximize photosynthesis - Thick cuticles to prevent water loss - Waxy coatings to reflect excess sunlight - Drip tips to facilitate water runoff - Hairy or pubescent leaves to reduce transpiration. Some examples of plant species found in Kibale Nat ional Park with unique leaf adaptations include: - The umbrella tree (Musanga ecropioides) with its large, flat leaves that provide shade and protect against heavy rainfall - The fig tree (Ficus spp.) with its small, hairy leaves that reduce transpiration and conserve water - The palm tree (Arecaceae) with its long, slender leaves that maximize photosynthesis and withstand strong winds

Questions:
(a) Discuss the importance of leaf size and shape in plants found in Kibale National Park (8 marks)
(b) Describe how plants in Kibale National Park prevent water loss through their leaves (10 marks)
(c) Discuss the importance of leaf adaptations in enabling plants to survive and thrive in the tropical rainforests of Kibale National Park (10 marks)
(d) Examine the role of environmental factors such as light, temperature, and humidity in shaping leaf adaptations in plants found in Kibale National Park (12 marks)

Section B Select any THREE (3) Questions from this Section (60 Marks)

Question 1:

(a) Analyze the impact of tourism infrastructure development on plant communities and ecosystems(10 marks)
(b) Explain the differences between tap roots and fibrous roots (10 marks)

Question 2:

(a) Discuss the factors that influence the structure and composition of plant communities. (13 Marks)
(b) Explain the concept of ecological succession and how it shapes plant communities over time. (12 Marks)

Question 3:

(a)Explain the role of plant defenses in protecting against pathogens and herbivores (12 marks)
(b)Discuss the differences between angiosperms and gymnosperms (8 marks)

Question 4:

(a) Discuss the functions of leaves to plants (10 marks)
(b)Examine the difference between roots and stems (10 marks)

Question 5:

(a) Analyze the impact of tourism infrastructure development on plant communities and ecosystems (12 marks)
(b) Examine the role played by tourism in promoting plant conservation efforts in your Country. Support your answer with examples (13 marks)

Question 6:

(a)Describe the difference between stilt roots and aerial roots (10 marks)

(b) Examine the modification of roots in plants (10 marks)