INTERNATIONAL UNIVERSITY OF EAST AFRICA
'Learning to Succeed'

FACULTY OF BUSINESS MANAGEMENT

END OF SEMESTER EXAMINATIONS - DECEMBER 2025

PROGRAMME: BTHM
YEAR/SEM: YEAR 1/SEMESTER 1
COURSE CODE: BTHM 1103
NAME: PLANT ECOLOGY

DATE:
TIME:

INSTRUCTIONS TO CANDIDATES:

SECTION A

Section A is a case study and it is Compulsory (40 marks)

Question 1:

Case Study 1. in Bwindi Impenetrable National Park, Uganda

The Slender Spindle Tongue is a rare plant that grows in the forests of Bwindi Impenetrable National Park in Uganda. It has a special relationship with a type of bird called the sunbird, which helps to pollinate its flowers. The plant's flowers are shaped like tubes and are a bright orange-red color, which attracts the sunbirds. When a sunbird visits the flower, it gets sticky pollen on its beak and feathers, which it then carries to other flowers, helping to pollinate them. The Slender Spindle Tongue is an endangered plant, and its survival depends on the sunbirds. But the sunbirds are also threatened by habitat loss and climate change, which can reduce the availability of food and nesting sites. To conserve the Slender Spindle Tongue, we need to protect the sunbirds and their habitats.

Questions

(a) Explain why a plant needs pollen from a different flower to make seeds (6 marks)

(b) Explain what would happen to the plant if it could only pollinate itself (6 marks)

(c) Explain the Environmental factors which might make it harder for the flowers to be pollinated (6 marks)

(d). Explain the simple actions which could be taken to help the flowers keep getting pollinated (7 marks)

(e) Differentiate between flowering and non-flowering plants (15 marks)

Question 2:

Case study 2

In Bwindi Impenetrable National Park, plants use fruits and seeds to spread and grow. Some plants, like Impatiens, have seed pods that explode and throw seeds far away. Other plants, like trees, produce fruits that animals eat. The animals then carry the seeds to new places and deposit them, often with a bit of fertilizer, helping the seeds grow into new plants. This helps the plants spread and grow in new areas. But, when animals that eat fruits are hunted or habitats are destroyed, it can be harder for plants to spread and grow.

Required

(a). Explain why animals help plants spread their seeds (6 marks)

(b). In your opinion, what happens to plants when animals that eat fruits are hunted? (6 marks)

(c) Explain how we can help protect the plants and animals in Bwindi Impenetrable National Park (10 marks)

(d) Identify some of the ways seeds are dispersed in Bwindi Impenetrable National Park (3 marks)

(e)Explain the differences between seeds and fruits (15 marks)

SECTION B

Answer any Three Question

Question 1:

1. a) Examine the main differences between roots and stems in plants, and how these differences help them perform their specific functions (10 marks)

(b)By use of examples, identify the modifications of roots. (10 marks)

Question 2:

2. (a)Identify the types of stems and describe their characteristics (10 marks)

(b)By use of examples, describe the plant habit of herbs and give their characteristics (10 marks)

Question 3:

3. (a) Write short notes on the following terms used in botany. (2 marks each)

(i) Sclerenchyma cells

(ii) Angiosperms

(iii) Gymnosperms

(iv) Androecium

(v) Vascular bundle

(b) Discuss the whole process of Primary Succession in Plant Ecology (10 marks)

Question 4:

4. (a) Examine the primary functions roots to plants. (6 marks)

(b) Explain by use of examples how plants defend themselves from attack (14 marks)

Question 5:

5.(a) Examine the different ways through which the tourism industry makes use of plant resources in appealing experiences for visitors. (10 marks)

(b) Examine the significance of the study of plant ecology to your career (10 marks)

Question 6:

7.(a) Discuss the different types of fruits and their adaptations for seed dispersal. (10 marks)

(b) Examine the main features of climbing plants. Explain using examples. (10 marks)

Question 7:

8.(a) Describe the two types of pollination known to you. (8 marks)

(b) Explain the processes by which pollination of flowers takes place (12 marks)

Question 8:

9. (a) Examine the different leaf arrangements known to you (8 marks)

(b) Differences between vascular and non-vascular plants, and illustrate each group with at least one example (12 marks)

Question 9:

10. Describe the process of primary succession, highlighting the stages and species involved in the colonization of a new habitat. (20 marks)

Question 10:

10. Describe the process of primary succession, highlighting the stages and species involved in the colonization of a new habitat. (20 marks)

Question 11:

11. Discuss the impact of human activities on ecological succession, including examples of how human disturbance can alter or disrupt succession (20 marks)

Question 12:

12.(a) Examine the effects of invasive species on native wildlife habitats and populations in Murchison Falls National Park, using specific examples of affected species. (10 marks)

(b) Examine the strategies you could employ to overcome the invasive species in Murchison falls.(10 marks)