



FreeExams.co.ke

# **UNIVERSITY EXAMINATIONS 2022/2023 ACADEMIC YEAR**

## **FIRST YEAR FIRST SEMESTER MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGY**

**COURSE CODE:** SBT 221

**COURSE TITLE:** PLANT ECOLOGY

**DATE:** 27<sup>TH</sup> APRIL 2023

**TIME:** 2.00 – 4.00 PM

---

### **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: 3 Hours

### QUESTION ONE

- a. Define the following terms: (5 marks)
- i. Ecosystem resilience
  - ii. Ecosystem resistance
  - iii. Ecosystem restoration
  - iv. Pioneer species
  - v. Keystone species
- b. Describe the physiological adaptations of mangrove plants in marine ecosystem (4 marks)
- c. Outline the challenges that hinder ecological restoration in most ecosystems? (5 marks)
- d. Explain the effects of deforestation on properties of soil (5 marks)
- e. Differentiate between primary and secondary succession (4 marks)
- f. Discuss how abiotic factors affect plant species (5 marks)
- g. Differentiate between *in-situ* and *ex-situ* methods of conservation (2 marks)

### QUESTION TWO

What are the features of the following types of forests (20 marks)

- a) Temperate deciduous forest
- b) Evergreen coniferous forests
- c) Temperate coniferous forests
- d) Temperate rainforests
- e) Tropical rain forests

### QUESTION THREE

Discuss the following methods of sampling plant species (20 marks)

- a) Profile method
- b) Point-centered Quarters Method
- c) The line-intercept method
- d) Quadrat Sampling

#### QUESTION FOUR

(20 marks)

Describe the adaptation mechanisms of the following plant communities

- i. Xerophytes
- ii. Hydrophytes
- iii. Halophytes
- iv. Mesophytes

#### QUESTION FIVE

Discuss how biotic factors determine the distribution and abundance of plant communities (20 marks)