



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF EDUCATION

SBT 408 : FOREST ECOLOGY

DATE: 15/3/2022

TIME : 2:00 – 4:00 PM

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. i. Explain the factors that determine the distribution of forests (3 marks)
ii. Describe three characteristics of forest ecosystems (3 marks)
iii. Discuss the three classes of crown (3 marks)
iv. Outline the importance of boreal forests (3 marks)
v. Discuss the importance of a forest snag (3 marks)
vi. Outline the stages of forest development (3 marks)
vii. Using diagrams describe vertical and horizontal forest structure (3 marks)
viii. Discuss the advantages of a complex ecosystem over a simple ecosystem (3 marks)
ix. Describe the characteristics of Temperate Forests (3 marks)
x. Discuss zonation of a named forest (3 marks)

SECTION B: ANSWER ANY TWO (2) QUESTIONS (TOTAL 40 MARKS)

2. a. Describe Energy flow in a forest ecosystem (10 marks)
b. Discuss *exsitu* and *insitu* conservation of forests (10 marks)
3. Discuss the carbon cycle in a forest ecosystem (20 marks)

- 4 a. Describe the requirements of sustainable forest management as used in forest conservation (10 marks)
- b. Discuss the effects of man-made disturbances on forests (10 marks)
5. a. Using illustrations, explain the process of succession in a forest ecosystem (10 marks)
- b. Discuss the importance boreal forests (10 marks)