



MACHAKOS UNIVERSITY

University Examinations 2019/2020 academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

SBT 200: PLANT ECOLOGY

DATE: 22/1/2021

TIME: 2.00-4.00 PM

INSTRUCTIONS

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

SECTION A

QUESTION ONE COMPULSORY (30 MARKS)

- a) State how the biotic component of the ecosystem affect the distribution of plants. (3 marks)
- b) Outline Clement's components of succession (3 marks)
- c) Discuss the disadvantages of the harvest method in determining productivity. (3 marks)
- d) Explain the two categories of biogeochemical cycles (3 marks)
- e) Describe the patterns of distribution of both plant and animal on a global scale (3 marks)
- f) Explain how morphological leaf trait of a plant can be an indicator of changing climate. (3 marks)
- g) Differentiate between primary and secondary productivity (3 marks)
- h) Outline the major vegetation types in East African region (3 marks)
- i) State the physiological and morphological adaptations of plants in afro-alpine region (3 marks)
- j) Describe the procedure followed in vegetation analysis (3 marks)

SECTION B

QUESTION TWO (20 MARKS)

Describe how to estimate the percentage of plant covering using a quadrat of 1m sq in a savanna grassland

QUESTION THREE (20 MARKS)

Explain the gas exchange method of determining productivity

QUESTION FOUR (20 MARKS)

Describe different theories of climax plant community

QUESTION FIVE (20 MARKS)

Discuss how human impacts on the environment have led to plant species loss