



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SBT 408: FOREST ECOLOGY

DATE: 2/8//2019

TIME: 11.00-1.00 PM

INSTRUCTIONS

Answer Question 1 (**compulsory**) and **any two** questions

QUESTION ONE

- a) Discuss three physical factors in a forest that interact with tree. (3 marks)
- b) Explain how light affects tree growth in a forest. (3 marks)
- c) Describe the role of silviculture in forestry. (3 marks)
- d) Distinguish between the vertical and horizontal structure of a forest. (3 marks)
- e) Using diagrams distinguish a forest edge and a forest snag. (3 marks)
- f) Explain how is a treelet different from a shrub? (3 marks)
- g) Explain why a human being can destroy a forest, but he cannot grow a forest. (3 marks)
- h) State three living components of forest ecosystem. (3 marks)
- i) Explain the characteristics of shade-intolerant species. (3 marks)

QUESTION TWO

- a) Discuss natural changes which can occur in a forest ecosystem during its life cycle. (10 marks)
- b) Discuss five main man-made changes that can take place in a forest ecosystem. (10 marks)

QUESTION THREE

- a) Discuss the advantages of a complex ecosystem over a simple ecosystem. (10 marks)
- b) Discuss five impactful forest practices that can be used to create a stable forest. (10 marks)

QUESTION FOUR

- a) Discuss energy flow in a forest ecosystem. (10 marks)
- b) Discuss the role of the hardiness of a forest tree. (10 marks)

QUESTION FIVE

- a) Discuss the main characteristics of a plant which make it to be called a tree. (10 marks)
- b) Discuss the five crown classes found in a forest. (10 marks)