



ALUPE UNIVERSITY

COLLEGE

...Passion of Knowledge...

P. O.Box 845-50400 Busia(K)

principal@auc.ac.ke

Tel: +254 741 217 185

+254 736 044 469

off Busia-Malaba road

**OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH**

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION SCIENCE

COURSE CODE: SBT 311

COURSE TITLE: ADVANCED ECOLOGY

DATE: 31/05/2022

TIME: 9 A.M. – 12:00 P.M

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 3 PRINTED PAGES

PLEASE TURN OVER

REGULAR – MAIN EXAM

SBT 311: ADVANCED ECOLOGY

STREAM: BED (SCIENCE)

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer ALL questions from section A and any **FOUR** from section B.*
 - ii. Diagrams should be used whenever they serve to illustrate the answer.*
 - iii. Do not write on the question paper.*
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SECTION A (30 MARKS)

Question One

- a) Define the term vegetation. (2 Marks)
- b) Explain four economic values derived from Savannah vegetation in Kenya. (4 Marks)
- c) What three characteristics that distinguish semi-desert vegetation from the rest? (3 Marks)
- d) Describe the role of drainage and altitude in the distribution of vegetation. (6 Marks)

Question Two

- a) Suggest two events that would happen when plants are exposed to lower light intensity than the optimum. (4 Marks)
- b) Define porosity and relate it to performance of soils in relation to drainage. (4 Marks)
- c) Describe any two factors that affect soil temperature. (4 Marks)
- d) Describe the features of land capability classes 1, 2 and 3. (3 Marks)

SECTION B (40 MARKS)

Question Three

- a) Explain how patterns of energy flow, productivity and diversity change during succession. (6 Marks)
- b) Identify any four changes that occur in a plant community during succession. (4 Marks)

Question Four

- a) Describe three effects of soil pH on the performance of soils. (6 Marks)
- b) Differentiate the role of fungi and actinomycetes in influencing soil properties. (4 Marks)

Question Five

- a) Explain the effects of cropping practices on soil structure. (6 Marks)
- b) Describe how oxygen sufficiency and deficiency impact on plant growth. (4 Marks)

Question Six

- a) Suggest how overstocking can lead to overgrazing. (2 Marks)
- b) Grazing pressure is a serious problem on animal ecosystems. Describe any four remedies to this catastrophe. (8 Marks)

Question Seven

- a) Define the term decomposition. (2 Marks)
- b) Discuss four influence of climate on decomposition. (8 Marks)
