



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 SCIENCE (AGRICULTURAL EDUCATION AND EXTENSION)

BACHELOR OF EDUCATION (SCIENCE)

BACHELOR OF SCIENCE IN (BIOLOGY)

SBT 204: PTERIDOPHYTES AND BRYOPHYTES

DATE: 20/01/2021

TIME: 8.30-10.30 AM

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 (30 MARKS) (COMPULSORY)

- a) Explain why Pteridophytes are referred to as “Lower Plants” yet they possess vascular bundles like the higher plants (angiosperms and Gymnosperms) (3 marks)
- b) Why are bryophytes referred to as “The amphibians of the plant kingdom” (3 marks)
- c) Name the structures used to release spores in the following group of plants:
 - i. Mosses (1 mark)
 - ii. Liverworts (1 mark)
 - iii. Hornworts (1 mark)
- d) Outline the differences between Isomorphic and Heteromorphic alternation of generations (3 marks)
- e) Differentiate between Perichaeta and sporophylls found in mosses and ferns respectively (3 marks)

- f) Briefly describe any two types sporangia found in Pteridophytes (3 marks)
- g) State three principal characteristics of seedless vascular plants (3 marks)
- h) Describe the process of sporangia development in *Equisetum* (3 marks)
- i) Describe the process of asexual reproduction in the Division Marchantiophyta (3 marks)
- j) Give a brief outline on the evolutionary and fossil existence of Bryophytes and Pteridophytes (3 marks)
- k) Outline features that distinguish Anthocerotophyta from other groups of bryophytes (3 marks)

SECTION B (40 MARKS)

QUESTION TWO (20 MARKS)

With specific examples, discuss the justification for studying Pteridophytes and bryophytes in the university

QUESTION THREE (20 MARKS)

- a) Discuss the challenges facing conservation of tropical bryophytes and pteridophytes (10 marks)
- b) How can these challenges be mitigated? (10 marks)

QUESTION FOUR (20 MARKS)

Discuss the gametophytic and sporophytic characteristics of the seedless vascular plants in the Division Psilotophyta

QUESTION FIVE (20 MARKS)

Discuss the various life and growth forms found in mosses