



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF EDUCATION (SCIENCE)

SZL 304: EVOLUTIONARY BIOLOGY

DATE: 15/4/2019

TIME: 8.30-10.30 AM

INSTRUCTIONS

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

SECTION A

QUESTION ONE – COMPULSORY (30 MARKS)

- a) Describe the processes of co-evolution
- b) Explain the importance of fossil records in the study of evolution (3 marks)
- c) Describe the meaning of phylogeny (3 marks)
- d) Explain microevolution (3 marks)
- e) Describe the factors involved in genetic drift (3 marks)
- f) Describe the processes by which mutations occur (3 marks)
- g) Outline the process of artificial selection (3 marks)
- h) Describe how adaptive radiation occurs (3 marks)
- i) Describe the use of carbon dating in the study of evolution

SECTION B

QUESTIONS TWO (20 MARKS)

Describe the process of natural selection

QUESTIONS THREE (20 MARKS)

Describe the following concepts:

- a) Divergent evolution (10 marks)
- b) Convergent evolution (10 marks)

QUESTIONS FOUR (20 MARKS)

Describe the mechanisms of microevolution

QUESTIONS FIVE (20 MARKS)

Discuss the causes of speciation