



MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

THIRD YEAR SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE IN BIOLOGY

SZL 304: EVOLUTIONARY BIOLOGY

DATE: 17/3/2022

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 1. – Compulsory (30 marks)

- i. Describe the processes of co-evolution (3 marks)
- ii. Explain the importance of fossil records in the study of evolution (3 marks)
- iii. Describe the meaning of phylogeny (3 marks)
- iv. Explain microevolution (3 marks)
- v. Describe the factors involved in genetic drift (3 marks)
- vi. Describe the processes by which mutations occur (3 marks)
- vii. Outline the process of artificial selection (3 marks)
- viii. Describe how adaptive radiation occurs (3 marks)
- ix. Describe the use of carbon dating in the study of evolution

SECTION B

Question 2

Using appropriate examples describe the process of natural selection (20 marks)

Question 3

Describe the following concepts:

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

Question 4

Describe the mechanisms of microevolution (20 marks)

Question 5

Discuss the causes of speciation (20 marks)