



MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (AGRICULTURAL EDUCATION AND EXTENTION)

BACHELOR OF EDUCATION (SPECIAL NEEDS EDUCATION)

BACHELOR OF EDUCATION (SCIENCE)

SZL 200: VERTEBREATE ZOOLOGY

DATE: 15/12/2021

TIME : 2.00-4.00 PM

INSTRUCTIONS

Answer all questions in section A and any other two questions in section B

Illustrate answers with diagrams wherever appropriate

SECTION A (compulsory)

1.

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|----|--|-----------|
| a) | Outline three characteristics of the circulatory system in protochordates | (3 marks) |
| b) | Explain why reptiles flourished during the permian period | (3 marks) |
| c) | Describe three excretory adaptations in Mammals | (3 marks) |
| d) | Explain how darwin's evolution concept is demonstrated in the evolution of vertebrates | (3 marks) |
| e) | Explain why gnathostomes replaced most agnathans | (3 marks) |
| f) | In which type of climate would you expect Lizards to thrive? Explain why? | (2 marks) |
| g) | Compare and contrast the chest structure of an eagle and an ostrich | (3 marks) |
| h) | Describe three | |
| | i. feeding adaptations in rodents | (3 marks) |
| | ii. Osmotic adaptations in sharks | (3 marks) |
| i) | Describe the significance of adaptive radiation in vertebrate evolution | (4 marks) |

SECTION B: ANSWER ANY OTHER TWO QUESTIONS

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| 2. | Discuss the rise and fall of the amphibians | (20 marks) |
| 3. | Discuss factors that have contributed to the success of Teleosts | (20 marks) |
| 4. | Describe how reptiles are structurally and functionally adapted to life in their habitats | (20 marks) |
| 5. | Explain how birds and mammals have adaptively responded to the following challenges in their environments | |
| | a) Reproductive | (10 marks) |
| | b) Respiratory | (10 marks) |