



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

..... YEAR ..... SEMESTER EXAMINATION FOR

BACHELOR .....

SZL 202: COMPARATIVE PHYSIOLOGY

DATE:

TIME :

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## INSTRUCTIONS

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### Section A

1.

- a) Explain why people who opt for a fat free diet to avoid weight gain may still become obese. (3 marks)
- b) Explain how a mammalian body system protects itself from getting stomach ulcers (3 marks)
- c) Unlike other animals, birds lack teeth. Explain how they have evolved to manage in life without the teeth (3 marks)
- d) Describe three adaptations for aquatic feeding (3 marks)
- e) Explain why a closed circulatory system is important for a bird (3 marks)
- f) Explain the lack of vivipary in some animal (3 marks)
- g) By use of a well labelled graph, illustrate how you would expect oxygen consumption to vary with environmental temperature in the following organisms:
  - i. Elephant (2 marks)
  - ii. Lizard (2 marks)
- h) Describe three osmotic adaptations in fresh water invertebrates (3 marks)
- i) Explain why air is a better respiratory medium than water (2 marks)
- j) A hyena was hunting in Tsavo national park and spotted a variety of organisms. However, its digestive system failed to activate. Explain (3 marks)

### SECTION B: ANSWER ANY OTHER TWO QUESTIONS

2. Discuss challenges and adaptations for an endothermic lifestyle (20 marks)

3. Compare and contrast animals' adaptive responses to respiration in their various environments (20 marks)
4. Discuss how the nervous system is an effective response to everyday challenges faced by animals (20 marks)
5. Discuss how evolution in the animal kingdom, has helped animals to cope with their increased food requirements (20 marks)