



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

JANUARY – APRIL 2015 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF NATURAL SCIENCES (BIOLOGY)

REGULAR PROGRAMME

BIO 301: VERTEBRATE BIOLOGY

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Date: April 2015	Duration: 2 Hours
Instructions: Answer Question ONE and any other TWO Questions.	

- Q1. a) State THREE ways in which crocodiles resemble birds. **(3 marks)**
- b) Outline the significance of hair/fur in modern mammals. **(3 marks)**
- c) State THREE reasons why vision is important for advanced terrestrial vertebrates with reference to eye position in herbivores, monkeys and birds. **(3 marks)**
- d) State and briefly explain four important characteristics of chordates. **(4 marks)**
- e) In what FOUR ways are marine teleosts and amphibians enabled to osmoregulate their body fluids? **(4 marks)**
- f) Briefly describe the stages of adaptive radiation in Vertebrates. Give examples. **(6 marks)**
- g) Distinguish the patterns of reproduction in monotremes, marsupials and placental mammals. **(6 marks)**
- Q2. Describe FOUR ways used by terrestrial vertebrates to solve the challenges encountered in terrestrial environment. **(20 marks)**
- Q3. i) Compare the anatomy of vertebrates in relation to the pectoral and the pelvic girdles. **(10 marks)**
- ii) Giving examples, discuss the adaptive modifications for flight, terrestrial locomotion and grasping in terrestrial vertebrates. **(10 marks)**

- Q4. Evaluate the role of integument in the FIVE vertebrate groups. **(20 marks)**
- Q5. Giving examples, explain how various physiological structural characteristics would influence spatial distribution of vertebrates. **(20 marks)**

END