



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)

SCHOOL FOCUSED PROGRAMME

BIO 301: VERTEBRATE BIOLOGY

P.O. Box 62157
00200 Nairobi - KENYA
Telephone: 891601-6
Fax: 254-20-891084
E-mail: academics@cuea.edu

Date: April 2015

Duration: 2 Hours

Instructions: Answer Question ONE and any other TWO Questions.

- Q1. a) Give two advantages of being an ectothermic vertebrate. **(2 marks)**
- b) How is the integument an important structure in amphibians? Give 2 reasons. **(2 marks)**
- c) Explain the four characteristic that define the phylum chordate. **(4 marks)**
- d) Giving examples attempt a classification of fishes into their three classes. **(6 marks)**
- e) Briefly describe the stages of vertebrate evolutionary radiation. **(6 marks)**
- f) Discuss the constrains on vertebrate diversification. **(6 marks)**
- g) Explain four factors/characteristics that make the amniotic egg an important evolutionary achievement for the terrestrial vertebrates . **(4 marks)**
- Q2. a) Evaluate FIVE factors that influence the distribution of marsupials and camel to their current geographical locations. **(10 marks)**
- b) What structural, physiological and behavioral adaptations do these two groups of mammals have that enable them survive in their respective habitats? **(10 marks)**
- Q3. Account for Osmoregulation and thermoregulation in terrestrial vertebrates. **(20 marks)**
- Q4. a) Giving named examples, compare and contrast embryology across named vertebrate groups. **(12 marks)**

- b) Explain how each of the vertebrates compared above increases the chances of survival for their young ones.

(8 marks)

- Q5. a) Compare and contrast the anatomy and morphology of the FIVE vertebrate groups with reference to the pelvic and pectoral girdles (for the anatomy part).

(12 marks)

- b) Explain how the terrestrial vertebrates are adapted for locomotion; flight in birds, running and walking in mammals.

(8 marks)

END