

10



**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2015/2016 ACADEMIC YEAR**  
**SECOND YEAR SECOND SEMESTER**  
**MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIORESOURCES  
MANAGEMENT AND CONSERVATION**

**COURSE CODE:** SBC 222  
**COURSE TITLE:** NATURAL HISTORY OF VERTEBRATES


**DATE:** 11<sup>th</sup> May 2016      **TIME:** 9:00 – 11:00a.m.

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**INSTRUCTIONS TO CANDIDATES**

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over   
KIBUCO observes ZERO tolerance to examination cheating

1. a) Define each of the following terms: (3 marks]
    - i. Classification
    - ii. Phylogeny
    - iii. Comparative biochemistry
  - b) State the difference between homologies and analogies. (3 marks)
  - c) Briefly describe the main anatomical features of chordates. (3 marks)
  - d) Briefly describe respiratory features of amphibian developmental stages which enable them to live both in water and on land. (3 marks)
  - e) Modern day fishes are very active swimmers, briefly describe features which enable them to be such active swimmers. (3 marks)
  - f) Highlight the main characteristics of amphibians. (3 marks)
  - g) Explain factors that led to the rise and fall of reptiliangroups. (3 marks)
  - h) Briefly describe the key characteristics that have made birds the most diverse of terrestrial vertebrates. (3 marks)
  - i) State features that have enabled flying mammals to colonize extremely harsh environments. (3 marks)
  - j) Explain how endothermy has enabled mammals to colonize extremely inhospitable environments. (3 marks)
- 2 Discuss by giving relevant examples the economic and biological importance of the orders of the class Reptilia. (20 marks)
  - 3 a) Discuss the main processes through which homoplastic structures may have evolved. In each case support your argument with relevant examples of anatomical features. (10 marks)
  - b) Discuss the main features of hemichordates. (10 marks)
  - 4 Describe the evolutionary pathway of vertebrates which enabled them to invade sea, land and air. (20 marks)
  - 5 a) Discuss the main features of scientific names as advanced by the Linnaean system of binomial nomenclature. (10 marks)
  - b) Discuss the main features of non-vertebrate chordates. (10 marks)