

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN AGRICULTURAL AND EXTENSION

ZOOL 233: VERTEBRATE ANATOMY

STREAMS: BSc. AGED

TIME: 2 HOURS

DAY/DATE: TUESDAY 09/04/2024

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS

- Answer ALL the questions in Section A and any TWO in Section B

SECTION A (30 marks)

1. (a) Distinguish between Osteichthyes and Chondrichthyes, with respect to their internal anatomy (3 marks)
(b). Explain why Archaeopteryx is considered a transitional fossil between non-avian dinosaurs and birds (3 marks)
2. Identify the cell types and their hormones located in the following endocrine organs:
 - a) Hypothalamus (2 marks)
 - b) Pancreas (2 marks)
 - c) Adenohypophysis (2 marks)
3. Explain the following parts of a mammalian body:
 - a) Seminiferous tubules (3 marks)
 - b) Motor cortex (3 marks)
4. (a) Describe the structure of the Loop of Henle (3 marks)
(b) Rearrange and name the following vertebrate body parts from the lowest to the highest level of structural organization. (3 marks)

Cardiovascular system, DNA, Heart, Nucleus, Endothelium, Cardiac muscle fiber

5. (a) Draw a labelled diagram mammalian lumbar vertebra (4 marks)
(b) Explain the term pubic symphysis (2 marks)

SECTION B (40 Marks)

6. Discuss the microscopic anatomy of the mammalian skeletal muscle fiber (20 marks)
7. Describe the structure of following body parts in vertebrates: -
- (a) The avian oviduct (12 marks)
 - (b) Ruminant mammary gland (8 marks)
8. Describe the following parts of the mammalian body:
- (a) Structural organization of autonomic nervous system (12 marks)
 - (b) Neuronal synapses (8 marks)
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