



# UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

FIRST YEAR EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN

AGRICULTURAL EDUCATION AND EXTENSION

JWL 100: VERTEBRATE ANATOMY

**DATE: APRIL 6, 2018**

**TIME: 2:00 PM – 4:00 PM**

**INSTRUCTIONS:**

**Answer Question ONE and ANY Other TWO Questions.**

**QUESTION ONE (30 MARKS)**

- a) Explain five characteristics of vertebrates (5 marks)
- b) With examples explain any three classes of fish (6 marks)
- c) Distinguish between macroscopic anatomy and microscopic anatomy (4 marks)
- d) Discuss six adaptations of reptiles to their habitats (6 marks)
- e) Briefly discuss amphibians anatomy (5 marks)
- f) Distinguish between pulmonary circulation and systemic circulation (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Discuss birds anatomy (10 marks)
- b) Explain the process of embryonic development in animals (10 marks)

**QUESTION THREE (20 MARKS)**

- a) With suitable examples differentiate between prokaryotic and Eukaryotic cells (8 marks)
- b) Explain various cell organelles and their functions (12 marks)

**QUESTION FOUR (20 MARKS)**

- a) Explain the characteristics of mammals that distinguishes them from other vertebrates (10 marks)
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- b) With examples explain the classes of mammals and amphibians (10 marks)

**QUESTION FIVE (20 MARKS)**

- a) Discuss skeletal system in snakes (8 marks)
- b) Describe the human circulatory system (12 marks)

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