CHUKA **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN AGRICUTULTURE EDUCATION

ZOOL 233: VERTEBRATE ANOTOMY

STREAMS: BSC (AGED) **TIME:2 HOURS**

DAY/DATE: THURSDAY 13/04/2023 **2.30 P.M. –4.30 P.M.**

INSTRUCTIONS

ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO FROM SECTION B

SECTION A (30 MARKS)

Q1. a) State the functions of each of the following animal tissues

i. Stratified squamous epithelium (1 mark)

ii. Fibrocartilage (1 mark)

iii. Areaolar tissue (1 mark)

b) Describe three types of granulocytes (3 marks)

Q2. a) Explain the mechanism of osmoregulation in fresh water teleosts (3 marks)

b) Give three ways in which marine reptiles get rid of excess salts (3 marks)

Q3. a) Explain the types of foetal and embryonic development in vertebrates (3 marks)

b) Describe three modes of asexual reproduction in vertebrates (3 marks)

Q4. a) Explain the roles of hormones secreted by the following glands (4 marks)

i. Pineal gland

ii. Paraventricular cells

iii. Corpus luteum

iv. Beta cells

v. b) State the functions of ATP and Troponin in skeletal muscle contraction (2 marks)

Q5. a) Explain accommodation in a mammalian eye (3 marks)

b) Give example of a sensory receptor in mammals that fall under the following category

i. Mechanoreceptor (1 mark)

ii. Thermoreceptor (1 mark)

iii. Electroreceptor (1 mark)

SECTION B (40 MARKS)

Q6. Describe blood circulation in

a. Amphibians (10 marks)

b. Mammals (10 marks)

Q7. a) Describe the structure of a ruminant digestive system and explain its function (10 marks)

b) Illustrate and describe the structure and functions of the parts of a motor neuron (10 marks)

Q8. a) Explain the path of sound waves in mammalian ear from pinna to the organ of Corti (10 marks)

b) Describe structure and functions of the kidney nephron (10 marks)