

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN BIOCHEMISTRY

BIOC 418: COMPARATIVE ANIMAL BIOCHEMISTRY

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 09/04/2024

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS

- **Answer question one and any other two questions**

Question 1 (Compulsory) (30 marks)

- a) Compare and contrast fat depots in birds and ruminants. (8 marks)
- b) Compare and contrast different metabolic rates for various types of reptiles. (8 marks)
- c) Discuss protein metabolism in ruminants. (8 marks)
- d) Highlight the energy preferences in migratory birds. (6 marks)

Question two (20 marks)

- a) Describe activity- and habitat- dependent anaerobiosis. (10 marks)
- b) Describe mobilization of lipid reserves in insects. (10 marks)

Question three (20 marks)

- a) Highlight key differences in gluconeogenesis in various vertebrates. (10 marks)
- b) Discuss the digestion of food in the four chambers of a ruminant stomach. (10 marks)

Question four (20 marks)

- a) Compare and contrast lipogenesis in ruminants and non-ruminants. (10 marks)
- b) Describe the production of ammonia and its fate in different animals. (10 marks)