

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: WEDNESDAY 12/04/2023

8.30 A.M – 10.30 A.M

INSTRUCTIONS:

Answer question one and any other two questions

QUESTION ONE (30 MARKS)

- (a) Describe the mobilization of carbohydrates stores in insects. [6 marks]
- (b) Explain the difference in energy preference in migratory birds and running animals. [6 marks]
- (c) Explain and justify the different forms of nitrogenous waste removal in different animals. [6 marks]
- (d) Explain the source and fate of different volatile fatty acids produced in ruminants. [6 marks]
- (e) Discuss lipid mobilization in insects. [6 marks]

QUESTION TWO (20 MARKS)

- (a) (i) Describe lipogenesis in ruminants. [8 marks]
- (ii) Compare and contrast lipogenesis in ruminants and non ruminants. [4 marks]
- (b) Explain the role of proteins in migratory birds during flight. [4 marks]

QUESTION THREE (20 MARKS)

- (a) Discuss carbohydrate metabolism in various non ruminants. [12 marks]
- (b) Describe the role of unique larvae hemolymph proteins in insects. [5 marks]
- (c) Describe the fate of the released ammonia in ruminants. [3 marks]

QUESTION FOUR (20 MARKS)

- (a) Describe protein catabolism in ruminants. [10 marks]
 - (b) Discuss accumulation of energy stores in migratory birds and insects. [10 marks]
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