

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS.

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

**BIOC 406: COMPARATIVE ANIMAL BIOCHEMISTRY**

**STREAMS: BS.c (BIOCHEMISTRY)**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 10/04/2019**

**8.30 A.M - 10.30 A.M.**

**INSTRUCTIONS:**

- Answer Question ONE and any other TWO Questions
- Do not write anything on the question paper

**QUESTION ONE: (COMPULSORY) [30 MARKS]**

- (a) Outline 5 factors that affect the digestibility of carbohydrates in fish. [5 Marks]
- (b) Discuss briefly steatorrhoea disease. [5 Marks]
- (c) Discuss briefly nitrogen metabolism in birds. [5 Marks]
- (d) Draw and explain the role of each of the four compartments in the ruminants' stomach. [5 Marks]
- (e) What is the role of Ornithine in the urea cycle? With examples, differentiate between Ureotelic and Uricothelic organisms. [5 Marks]
- (f) What is haemolymph? Highlight the constituents in the haemolymph of insects. [5 Marks]

**QUESTION TWO: [20 MARKS]**

- (a) Discuss in detail lipid digestion and absorption in humans. [10 Marks]
- (b) Describe carbohydrates metabolism in ruminants. [10 Marks]

**QUESTION THREE: [20 MARKS]**

- (a) Describe the utilization of lipid reserves during flight and starvation in insects. [10 Marks]
- (b) Describe the digestive systems found in reptiles. [10 Marks]

**QUESTION FOUR: [20 MARKS]**

(a) Discuss minerals and their requirement in fish. [10 Marks]

(b) Describe the anatomy and secretory activities of the gastro-intestinal tract of poultry. [10 Marks]

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