

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

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

**BIOC 406: COMPARATIVE ANIMAL BIOCHEMISTRY**

**STREAMS: BSC. BIOCHEMISTRY Y4S2**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 12/04/2018**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

- Answer question one and any other two questions.
- Do not write on the question paper.

**Question one (30 marks)**

- (a) Describe assimilation and its roles in comparative biochemistry. (5 marks)
- (b) With examples, explain the classification of metabolism. (5 marks)
- (c) Discuss the metabolism of carbohydrates in fish. (5 marks)
- (d) Differentiate between enzymes hexokinase and glucokinase in animal metabolism. (5 marks)
- (e) The liver houses many metabolic activities that involve enzymes. Explain. (5 marks)
- (f) Explain the various physiological states of lipids. (5 marks)

**Question two (20 marks)**

- (a) Elaborate the structural compartments of digestion in ruminants. (10 marks)
- (b) Migratory birds can fly for relatively long distances without fatigue. Explain. (10 marks)

**Question three (20 marks)**

- (a) Describe the carbohydrates metabolism in insects. (10 marks)

- (b) Describe the digestion and transport of monosaccharaides in the human body. (10 marks)

**Question four (20 marks)**

- (a) Describe the process of  $\beta$ -oxidation in lipid metabolism. (10 marks)
- (b) Elaborate the distinct differences between fat and protein metabolism in the liver. (10 marks)
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