

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: MONDAY 20/09/2021

2.30 P.M – 4.30 P.M

INSTRUCTIONS

- Answer question one (COMPULSORY) and any other two questions
- Sketch diagrams may be used whenever they may help to illustrate your answer
- Do not write anything on the question paper
- This is a closed book exam. No reference materials are allowed in the examination room
- There will be no use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely

QUESTION ONE (30 MARKS) (COMPULSORY)

- (a) Compare and contrast the formation of urea and uric acid. [5 marks]
- (b) With a use of a suitable diagram, demonstrate the formation of urea in ureotelic animals. [7 marks]
- (c) Compare the absorption and transport of lipid in fishes and mammals. [6 marks]
- (d) Briefly compare and contrast triglycerides mobilization in fishes and mammals. [6 marks]
- (e) Compare carbohydrate metabolism in small and large animals when running. [6 marks]

QUESTION TWO (20 MARKS)

- (a) Compare and contrast digestion and assimilation of carbohydrate in ruminants and non ruminants. [10 marks]

- (b) Discuss mobilization of lipid reserves in insects. [10 marks]

QUESTION THREE (20 MARKS)

- (a) Enumerate and explain the source and metabolism of volatile fatty acids produced by the ruminants in the process of carbohydrates. [10 marks]
- (b) Briefly discuss digestion in the birds glandular (proventriculus) and muscular stomach (gizzard) [10 marks]

QUESTION FOUR (20 MARKS)

- (a) Compare and contrast the process of lipogenesis in ruminants, birds, human and rodents. [10 marks]
- (b) Discuss mobilization of carbohydrates reserves in insects. [10 marks]
-