

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN BIOC 314: NUTRITIONAL BIOCHEMISTRY

STREAMS: Y3S1

TIME: 2 HOURS

DAY/DATE:FRIDAY 8/12/2017

8.30 A.M – 10.30 A.M

INSTRUCTIONS:

Instructions:

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

Question One (30 marks)

- Explain the major roles of the two types of muscle tissue in metabolic integration. (4 marks).
- Outline the four major alterations in metabolic flux that permit humans to survive long periods of time without food. (4 marks)
- How does vitamin D help in the regulation of calcium and phosphorous for normal bone development? (3 marks)
- Explain how ethanol degradation inhibits gluconeogenesis. (4 marks)
- Outline the exocrine and endocrine functions of the pancreas. (2 marks)
- Briefly describe the hormonal control of digestion in small intestine? (5 marks)
- Briefly describe the composition of the walls of the digestive tract of various species. (4 marks)
- Differentiate between marasmus and kwashiorkor in terms of proteins. (4 marks)

Question Two (20 marks)

- Describe the role of the liver in metabolic integration. (10 marks)
- Briefly describe the biochemical process of gluconeogenesis. (10 marks)

Question Three (20 marks)

- a. Describe the digestion of lipids by pancreatic enzymes. (10 marks)
- b. Provide a detailed description of complete proteins. (10 marks)

Question Four (20 marks)

- a. Outline the recommended healthy dietary requirement. (10 marks)
 - b. Describe carbohydrate and protein metabolism during stress starvation. (10 marks)
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