CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE (NURSING)

NURU 119: MEDICAL BIOCHEMISTRY II

STREAMS: BSC (NURS) **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 06/12/2017 **2.30 P.M. – 4.30 P.M.**

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

(a) Explain gluconeogenesis and give three reactions of glycolysis that cannot be applied in gluconeogenesis. [4 marks]

(b) Define uncouplers and using an example give two types of uncouplers. [3 marks]

(c) Discuss the four basic steps of β − oxidation of saturated fatty acids. [8 marks]

(d) (i) Define ketosis [1 mark]

(ii) Give three causes of ketosis [3 marks]

(e) Explain the following terms

(i) Hypercholesterolemia

(ii) Atherosclerosis

(iii) Transamination

(iv) Nitrogen balance [8 marks]

(f) List three factors that explain why dietary fibre is better than a drug in the breakdown of cholesterol. [3 marks]

QUESTION TWO (20 MARKS)

(a) Discuss the pentose phosphate pathway. [10 marks]

(b) Using equations discuss the first five reactions of the Krebs cycle. [10 marks]

QUESTION THREE (20 MARKS)

(a) Discuss the first four stages of making cholesterol from acetyl – CoA. [8 marks]

(b) Using equations discuss the first two stages of the urea cycle. [4 marks]

(c) Define fatty liver and give four causes of fatty liver. [5 marks]

(d) Give the advantages of gluconeogenesis to an individual. [3 marks]

QUESTION FOUR (20 MARKS)

(a) Discuss the following lipid storage diseases

(i) Nice man-pick disease

(ii) Gauchers disease

(iii) Tay-sachs disease [6 marks]

(b) Explain in details the digestion of proteins. [6 marks]

(c) Expound on the Mitchell'schemiosmotic theory. [4 marks]

(d) Give four functions of respiratory poisons [2 marks]

(e) List two fates of acetyl – CoA formed by β – oxidationof fatty acids. [2 marks]
