CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BIOC 403: CLINICAL BIOCHEMISTRY

STREAMS: BSC (BIOC) (Y4S2) **TIME: 2 HOURS**

DAY/DATE: MONDAY 08/4/2019 **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS
(i) Answer Question ONE and any TWO questions
(ii) Do not write on the question paper

QUESTIONONE (30 MARKS)

(a) Describe the clinical applications of aspartate aminotransferase (AST) and indicate the normal reference values in males and females. [5 marks]

(b) Describe how a-amylase levels can be used in evaluation of pancreatic diseases.[5 marks]

(c) Differentiate between total bilirubin and direct bilirubin and hence provide the normal reference ranges. [5 marks]

(d) Describe blood urea nitrogen test and creatinine test as measures of kidney function. [7 marks]

(e) Describe the difference between urea clearance and urine osmolality test and hence explain the impact of protein diet on the test results. [8 marks]

QUESTION TWO (20 MARKS)

(a) Describe the genetics of the ABO blood group antigen system [10 marks]

(b) Describe how erythroblastosis fetalis occurs and hence explain how it can be prevented. [10 marks]

QUESTION THREE (20 MARKS)

(a) Describe the etiology of Thalassemia. [10 marks]

(b) Describe the different treatment strategies available for Thalassemia. [10 marks]

QUESTION FOUR (20 MARKS)

(a) Describe the mechanism of sickling of red blood cells as observed in sickle cell anemia [10 marks]

(b) Describe the rheology of sickle cells [10 marks]
