

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATION

**RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS EXAMINATION FOR THE
AWARD OF DEGREE IN BACHELOR OF SCIENCE (BIOCHEMISTRY)**

BIOC 423: SPECIAL METABOLISM

STREAMS: BIOC

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 5/5/2021

11.30 A.M - 1.30 P.M.

INSTRUCTIONS

- (i) Answer All the Questions**
- (ii) Do not write on the question paper**

QUESTION ONE (30 Marks)

- (a) Discuss the role of calcium ions in regulation of skeletal muscle contraction. (5 marks)
- (b) Using structural and chemical formulae describe **heme** catabolism in the spleen. (9 marks)
- (c) Describe energy metabolism during smooth muscle contraction. (8 marks)
- (d) Discuss termination of phototransduction signaling in the retina. (8 marks)

QUESTION TWO (20 Marks)

- (a) Discuss the mode of action and physiological role of G-protein coupled receptors. (10 marks)
- (b) List all the serotonin receptor subtypes of 5HT1 and 5HT2 groups and explain their role in serotonergic transmission. (10 marks)

QUESTION THREE (20 Marks)

- (a) Discuss biochemical basis of jaundice. (8 marks)
- (b) Explain the rationale and application of phototherapy in newborns. (12 marks)