

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

RESIT/SPECIAL EXAMINATION

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOCHEMISTRY**

BIOC 423/404: SPECIAL METABOLISM

STREAMS: BSC. BIOC

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 11/08/2021

2.30 P.M – 4.30 P.M.

INSTRUCTIONS

- **Answer All the Questions**
- **Do not write on the question paper**

QUESTION ONE

(30 Marks)

- (a) Discuss the role of sodium and potassium ions in development of action potential. **(7 Marks)**
- (b) Using structural and chemical formulae describe **heme** catabolism in the spleen. **(9 Marks)**
- (c) Describe energy metabolism during skeletal muscle contraction. **(6 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 the serotonin receptor subtypes and explain their role in serotonergic transmission. **(10 Marks)**

QUESTION THREE (20 Marks)

- (a) Discuss biochemical basis of hepatic jaundice. **(10 Marks)**
- (b) Explain the rationale and application of heliotherapy in newborns. **(10 Marks)**