

CHUKA



UNIVERSITY

RESIT/ SPECIAL EXAMINATIONS

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

BIOC 401: SPECIAL METABOLISM

STREAMS: BSC (BIOC)

TIME: 2 HOURS

DAY/DATE: MONDAY 23/07/2018

2.30 PM – 4.30 PM

INSTRUCTIONS:

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

Question One (30 Marks)

- (a) Discuss the structure and functions of skeletal muscle sarcomere. [5 marks]
- (b) Using structural and chemical formulae describe heme biosynthesis in the erythrocytes. [9 marks]
- (c) Describe energy metabolism during cardiac muscle contraction. [8 marks]
- (d) Discuss role of Calcium ions in the regulation of phototransduction cascade. [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]
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