

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BIOC 100: INTRODUCTION TO BIOCHEMISTRY AND BIODIVERSITY

STREAMS: B.Sc (BIOCHEMISTRY) Y1S1

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 5/12/2018

11.30 A.M - 1.30 A.M.

INSTRUCTIONS:

- Answer question one and any other two questions
- Do not write on the question paper

QUESTION ONE: [30 MARKS]

- Outline the four major macromolecules and their respective constituents. [4 Marks]
- State two characteristics of carbon that makes it to be a universal component of biomolecules. [2 Marks]
- State and briefly explain the three basic body planes of invertebrates. [3 Marks]
- State the three main features of chordates. [3 Marks]
- Explain why some small populations, even when protected from further human interference, appear to be unusually prone to extinction. [4 Marks]
- Briefly explain the concept of structural polarity in biomolecules. [4 Marks]
- Briefly outline the process of bioremediation in plants. [4 Marks]
- State four weak chemical forces or non-covalent bonds that maintain biological structures of biomolecules. [2 Marks]
- Briefly describe the main plant organelles of metabolisms. [4 Marks]

QUESTION TWO: [20 MARKS]

- Describe amino acid biosynthesis in plants. [10 Marks]
- Distinguish between living organisms and inanimate objects. [10 Marks]

**BIOC 100**

**QUESTION THREE: [20 MARKS]**

- a. Discuss the role of various groups of hormones in plants. [10 Marks]
- b. Discuss evolutionary processes that influence genetic diversity. [10 Marks]

**QUESTION FOUR: [20 MARKS]**

- a. Discuss how birds are adapted for flight. [10 Marks]
- b. Describe the Phylum Nematoda. [10 Marks]

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